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## **Exploring gendered play**

### An inquiry into women's digital gaming practices

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*Gent, maart 2016*

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# NEDERLANDSE SAMENVATTING

De hedendaagse digitale gamemarkt trekt een breed spectrum van spelers aan, waaronder ook vrouwen van diverse leeftijden. Het is duidelijk dat het stereotiepe beeld van jonge, blanke, en bovenal, mannelijke gamers niet langer accuraat is in dit nieuwe tijdperk van digitale technologie. Desondanks is het belangrijk om een onderscheid te maken tussen een relatief gelijke groep mannen vs. vrouwen die gamen, en een gevestigde gendergelijkheid binnen deze speelcultuur. Recente studies geven bijvoorbeeld aan dat de digitale speelcultuur nog steeds de (impliciete) boodschap uitdraagt dat vrouwen niet worden verondersteld deel te nemen aan deze vrijetijdsbesteding (e.g., Fox & Tang, 2014). Dit zou een oorzaak kunnen zijn van de twijfelachtigheid bij vrouwen om zich als gamer te identificeren (Shaw, 2012a). Centraal in dit proefschrift staat daarom de vraag hoe genderpraktijken in de huidige digitale speelcultuur inspelen op de game-ervaringen van vrouwelijke spelers. Dit gebeurt door ons te focussen op twee centrale en gerelateerde concepten, namelijk: stereotypering en gamer identiteit. Deze concepten worden benaderd vanuit verschillende theoretische perspectieven waarin sociaalpsychologische theorieën worden gecombineerd met kritisch feministische standpunten.

Deze doctorale thesis stelt zes empirische studies voor. De eerste studie exploreert hedendaagse genderkwesties in de digitale speelcultuur en bekijkt hiervoor enkele casestudies. Dit werk is er niet enkel op gericht om de context uit te leggen waarin vrouwen spelen, maar biedt ook een alternatieve uitleg voor de toename van vijandigheid tegenover de aanwezigheid van vrouwelijke spelers. We argumenteren dat dit voortkomt uit een wijziging van het gamerspubliek, wat een frustratie teweegbrengt bij traditionele spelers die een stereotiep mannelijk discours in gaming proberen te behouden en te beschermen.

De tweede studie heeft vooral betrekking op vermeende genderverschillen ten opzichte van gamevoorkeuren en "stereotype endorsement". Deze exploratieve studie bevraagt zowel mannelijke als

vrouwelijke spelers naar hun gamerattitudes, speelgewoontes, en voorkeursgenres. De resultaten tonen aan dat sterk geëngageerde vrouwelijke spelers zich verzetten tegen heersende genderideeën en dat hun motivaties om bepaalde genres te spelen die van mannelijke spelers overtreffen.

Terwijl de twee bovenstaande studies vooral de speelcontext of de speelgewoontes van vrouwelijke spelers verduidelijken, focussen de volgende drie experimentele studies zich op het psychologisch mechanisme "stereotype threat". De resultaten leveren bewijs dat dit fenomeen de speelervaringen van vrouwelijke spelers aantast als gevolg van hun angst om genderstereotypen te bevestigen. Het is duidelijk waargenomen dat vrouwen zich zorgen maken over hun gameprestaties, wat vervolgens een negatieve impact heeft op hun speelervaringen. Dit komt tot uiting in een gepercipieerde zwakkere prestatie, verlaagde self-efficacy, en een achteruitgang in emotioneel welzijn. Deze resultaten doen zich vooral voor wanneer rekening gehouden wordt met verschillen in individuele variabelen die zijn opgenomen als moderatoren van het gameplay effect op de ervaringen van vrouwen. Gamer identiteit, bijvoorbeeld, speelt een cruciale rol in dit proces. Terwijl een sterke gamer identiteit normaal gezien speelresultaten bekrachtigt, vlakkt het positieve effect af wanneer vrouwen worden geconfronteerd met dreiging.

De laatste studie ontwikkelt een statistisch model om de identificatieprocessen van vrouwen als gamer beter te begrijpen. Het model geeft over het algemeen weer hoe de gamer identiteit van vrouwen samenvalt met hun vrouwelijke identiteit, vroegere ervaringen met stigma, en andere belangrijke variabelen zoals leeftijd en gamegewoontes. De resultaten geven aan dat vrouwelijke spelers kracht putten uit hun onconventionele positie om zich als gamer te identificeren. Of anders geformuleerd: vrouwen die toegewijd zijn aan gaming en hun status als "outsider" erkennen, hebben een sterkere neiging om zich als gamer te identificeren. Dit is echter niet het geval wanneer vrouwen frequent geconfronteerd worden met seksuele intimidatie wanneer zij games spelen. Vrouwen die continu herinnerd worden aan het feit dat ze gendergrenzen overschrijden, zijn minder geneigd om zichzelf het label als gamer toe te kennen.

Alles samengenomen, kunnen we concluderen dat deze studies bewijs leveren dat de speelervaringen van vrouwelijke spelers onderhevig zijn aan verscheidene genderpraktijken. Terwijl we eerst de mythe weerleggen dat vrouwen weinig interesse hebben in games of stereotiepe gendergenres prefereren, duidt ons werk er ook op dat onderliggende spanningen inherent zijn binnen een conservatieve digitale speelcultuur. Deze moeilijkheden hebben een weerslag op de ervaringen van vrouwen en vooral wanneer er cross-gender machtsverhoudingen aan het werk zijn. Als zodanig balanceert deze thesis voortdurend tussen vrouwen die hun eigen gameplay op actieve wijze beheren en vrouwen die onderworpen zijn aan gendernormen en -verwachtingen.



# ENGLISH SUMMARY

Today's game market appeals to a wide range of players, including women of various ages. It has become clear that the stereotypical image of gamers as young, white, and above all male, is no longer accurate in this new age of digital technology. Notwithstanding, one should distinguish between a relatively equal proportion of men vs. women playing games, and an established gender equality in game culture. Recent studies, for example, indicated that game culture still carries out the (implicit) message that women are not supposed to engage in this leisure activity (e.g., Fox & Tang, 2014), which might be the cause of women's hesitation to identify themselves as gamers (Shaw, 2012a). Hence, this doctoral dissertation deals with the question how gendered practices in today's digital game culture affect the game experience of female players. It does so by focusing on two central and related concepts, namely: stereotyping and gamer identity. These concepts are approached from multiple theoretical perspectives combining social-psychological theories with critical feminist points of view.

This doctoral dissertation presents six studies. The first study explores contemporary gender issues in game culture and inquires into several case studies. Not only does this work attempt to explain the context in which women play, but it also offers an alternative explanation for an increase of hostility towards the presence of female players. We argue that this arises from changing player bases, provoking traditional players who attempt to maintain and protect a stereotypical male discourse in game culture.

The second study is more concerned with alleged gender differences in terms of game preferences and stereotype endorsement. This explorative survey study questions both male and female players about their gamer attitudes, play habits, and game genre preferences. Results indicate that highly invested female players resist dominant gender beliefs and that their motivations to play certain genres exceed those of male players who prefer the same genres.

Whilst the aforementioned studies clarify the play context or play habits of female players, the following three experimental studies focus on the psychological mechanism of stereotype threat. Results provide evidence that this phenomenon is distorting women's play experiences due to the fear of confirming gender stereotypes. It is specifically found that women worry about their gaming performance, which subsequently seems to negatively impact their play experiences in terms of weakened perceived achievement, lowered self-efficacy, and deteriorated emotional wellbeing. However, these results mainly appear when individual-difference variables are regarded as moderators of the effect of game play on women's experiences. Gamer identity, for example, plays a crucial part in this process. Whilst a strong gamer identity usually affirms play outcomes, its positive impact noticeably flattens out once women are confronted with threat.

The final study develops a statistical model to better grasp women's identification process as a gamer. This model generally represents how women's gamer identity coincides with their female identity, previous experiences of stigma, and other important variables such as age and game habits. Results suggest that female players draw strength from their unconventional position to identify as gamer. Or put differently, women who are highly committed to gaming and aware of their status as an "outsider" are more likely to identify themselves as gamer. This, however, is not the case when women frequently encounter sexual harassment when playing games. A constant reminder of crossing gendered play lines makes these women less likely to label themselves as gamers.

Taken together, we can conclude that these studies demonstrate that play practices of female players are gendered in various ways. Whilst we first disprove the myth that women have low interest in games or prefer stereotypical gender genres, our work also points to underlying tensions inherent within a conservative game culture. These difficulties affect women's experiences and especially when cross-gender power relations are at work. As such, the present dissertation continuously balances between women as actively managing their own game play and women as subjected to gendered norms and expectations.

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LEVEL 01

Prologue





# CHAPTER ONE

## WHAT TO EXPECT?

**I**n August 2010, it became clear that digital game culture (still) favors a gendered discourse in which gamer identity carries a male connotation. Concretely, the digital game-related blog Penny Arcade.com came under scrutiny for printing a rape joke in their comic on “Dickwolves” (i.e., an imaginary character with phalli instead of limbs) whereupon some readers expressed their dissatisfaction and filed a complaint against Penny Arcade’s creators. In response, the latter published a follow-up cartoon in which they hostilely mocked their readers’ right to be offended. Penny Arcade continued to provoke controversy by merchandising Dickwolves in the form of t-shirts and pennants, creating a sense of “my team”-thinking endorsed by many community members. The Dickwolves incident led to a derailed debate in game culture antagonizing a group of so-called hypermasculine<sup>1</sup> gamers against those not complying with the discourse’s sexist standards (Salter & Blodgett, 2012).

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<sup>1</sup> The psychological term “hypermasculinity” typically refers to the exaggeration of stereotypical male gender roles (Parrott & Zeichner, 2003).

Four years later, in the summer of 2014, there was a novel, yet comparable, well-documented incident. Zoë Quinn, a US game developer, was falsely accused for trading sex with a game journalist in exchange for positive reviews of her game *Depression Quest* (Quinn, 2013). A movement with the hashtag #GamerGate perpetuated the attacks on Quinn claiming that there is corruption in digital game journalism and that feminists are conspiring against the game industry (Chess & Shaw, 2015). One clear goal of this online hate campaign was to “take back” digital games from the army of feminist social justice warriors. Prominent women involved in digital gaming, such as game critic Anita Sarkeesian, game developer Brianna Wu, and assistant professor game studies Adrienne Shaw, were severely harassed and received manifold threats telling them to “shut up” (XOXOFestival, 2014), “commit suicide” (BBC, 2014), or “get raped” (McKinney, 2015). The conflict escalated to such an extent that some female game critics had to leave their homes and take security protection measures (Chess & Shaw, 2015).

As with the Dickwolves incident, members of the game community were polarized into a group supporting a dominant masculine game culture<sup>2</sup> and another group voicing or embracing alternative identities. The main difference was that the #GamerGate campaign lacked an official leadership, while the Dickwolves’ creators were clearly the spokespeople swaying the gamer community with their opinions. The anonymity of gamergaters made it much harder to identify the harassers and control escalation of the conflict, leading to a worldwide popularization of the #GamerGate hashtag.

Both cases point to the continuing problems of a gendered game culture and the subsidiary role of women within game culture. They are attempts to offer representation of traditional “gamers” as “young,

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<sup>2</sup> It should be noted that there are various kinds of dominant masculinities in game culture which go beyond outright aggressive forms such as hypermasculine game content. Throughout this dissertation, we argue that dominant masculinity is interwoven within game culture in often subtle and ambiguous ways (cf. Chapter five for a discussion on how male dominance is constructed in game culture).



heterosexual, white males” despite the widening of game community’s membership (Shaw, 2014). Indeed, digital gaming is evolving from a restricted androcentric realm to a progressive medium based on the expansion of game genres and broadening of gaming audiences (Scharkow, Festl, Vogelgesang, & Quandt, 2015). In relation to gender, a recent report from the Pew Research Center (Duggan, 2015) revealed that nearly an identical amount of men and women are now playing digital games, countering the idea of gamers as predominantly male. However, in spite of this positive evolution, the report also noted that men were twice more likely than women to label themselves as gamer. So, whilst gaming seems to have taken a central place in women’s leisure practices, unbalanced power dynamics are still at work diminishing women’s privileges within the discourse. The main goal of this doctoral dissertation is to explore how gendered practices in digital gaming affect the game experience of female players. This central question is approached through two interwoven concepts, namely: identity and stereotyping. The rationale for focusing on these themes is that gamer identity is fed by stereotypical gender mechanisms creating an unlevelled playing field for women. Gamer identity, in this vein, can be understood as the definition of one’s self based on belonging to that group. This thesis elaborates on how gamer identity and stereotypical practices in gaming are entangled and how they govern the way females play and participate in game culture.

Although stereotyping in gaming has often been studied in texts (e.g., studies on representation; Near, 2013; Summers & Miller, 2014), this dissertation takes a different view by concentrating on broader social issues around gender and play. We do not strive to detect direct effects of sexualized content on women (e.g., Behm-Morawitz & Mastro, 2009) nor do we aim to identify sex differences in game predilections linked to essentialist biology (e.g., Hartmann & Klimmt, 2006). On the contrary, emphasis is on how socially constructed stereotypes are subtly (or not) undermining the experience of women who are already playing games. An important psychological mechanism hereby is stereotype threat (i.e., anxiety to confirm a negative stereotype; Steele & Aronson, 1995), which likely plays a pivotal role in the rejection of women to label themselves as gamer. Whilst stereotype threat has been extensively studied in various domains such as sports (e.g.,

Stone, 2002) and math (e.g., Galdi, Cadinu, & Tomasetto, 2014), this mechanism remains relatively unexplored in the field of digital games. Therefore, when looking into stereotyping, the present dissertation hopes to publish new insights in gender game research and aims to add to existing literature on stereotype threat.

In outlining our research subjects and contexts, focus is on “all women who play digital games” in a “contemporary Western time frame” and should be interpreted within this context. While early studies concentrated primarily on school-aged children (Richard, 2013), game audiences have matured with their medium and now people of all ages are playing them (Juil, 2012). It is therefore decided to not set age boundaries for our research group (which is dissimilar from disregarding age in the empirical chapters). The rationale for focusing on women are manifold. In the first place, research on gender (women) and gaming is relatively new compared to other digital game research, for example, on game motivations (e.g., Yee, 2006) and addiction (e.g., Fisher, 1994). How gendered practices are interwoven in game culture has received too little attention it deserves. Moreover, within current studies, player samples are often skewed towards a predominantly male audience (e.g., Billieux et al., 2013; Jansz & Tanis, 2007; Van Looy, Courtois, De Vocht, & De Marez, 2012), requiring more balance in terms of players’ sex. It is also not self-evident to include women in game research as they tend to underestimate or underappreciate their contributions possibly due to their marginalized position in game culture (Shaw, 2012a). Hence, our aim is to let women’s voices speak and give them a valued position as player research subjects within academic research.<sup>3</sup>

Moreover, feminist gaming research has strongly grown in the past years (Richard, 2013), analyzing micro-level experiences of women’s play by adopting an often traditional qualitative approach (see for example the work of Jenson & de Castell [2013] or Shaw [2014]). Whilst it goes without saying that this type of research is of great value, quantitative critical research could also contribute to the revealing and

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<sup>3</sup> This is not to say that men are completely discarded in this dissertation. We do take into account a male player group in chapter six.

exposing of stereotyped practices in digital gaming. It is our aim to challenge conventional (feminist) research methods and provide more group-level explanations by means of quantification and the use of new methods such as psychophysiological measurement. We believe that expanding the methodological toolbox is a necessity to add to feminist insights on the lives and experiences of female players.

The present thesis can best be described as multidisciplinary audience research combining insights from both social-psychological and feminist theories. Dialoguing between these viewpoints allows us to answer our central question of how gendered practices in digital gaming affect the game experience of female players. While a social-psychological perspective helps us unravel how women's gaming experiences are mediated by their beliefs, attitudes, and emotional states, a feminist perspective gives us insights into the underlying ideological forces that exclude these women from the realm of digital gaming (Craig, 1999). Moreover, because this dissertation concentrates on the relation of women with digital gaming, our findings contribute to the current public debate on gamer identity. It tries to provide some clarity on why gamer identity remains stagnant and immobile as opposed to the expansion of gaming community and to understand what this means to women enjoying digital games. Specifically, as argued by Consalvo (2012), our focus on women's experiences resulting from a gendered player culture meets the need for documentation on sexist beliefs and practices. Also, it adds to insights on what responses mitigate or eliminate those issues.

We start off by outlining the key concepts that constitute the pillars on which this doctoral dissertation is built. A clear definition of these concepts and a description of how they are related are provided in chapter two. In chapter three, we dwell upon the meta-theoretical considerations which delineate this work. After citing our ontological, epistemological, and axiological position, it is explained why our work can be considered both post-positivist and feminist. Besides situating the methodological (in)congruities of these perspectives, this chapter argues that empiricist research can nevertheless be feminist. The following chapter four discusses the methodology that is employed in our empirical studies. This chapter provides an overview of the research

methods and devotes special attention to a relatively new method within the field of communication sciences; that is, the use of psychophysiological measures. Section two (cf. "Level 02"), then, consists of the empirical chapters numbered five to nine. Chapter five is specifically concerned with new forms of backlash against women in game culture and corroborates these issues by means of case studies. Next, in chapter six, it is explored how players (both male and female) are dealing with gaming stereotypes in relation to previous play experience and motivations. Chapter seven examines stereotype threat and explains how cross-gender competition taps into women's play experiences. This is followed by chapter eight, which comprises two studies delving into the underlying mechanisms of stereotype threat experienced by female players. The final empirical chapter nine considers to what extent women label themselves as gamers and how this is related to previous threat experiences and their female identity. Section three, finally, contains our closing chapter ten. In this chapter, we draw a main conclusion and reflect upon the values, limitations, and contributions of our research project.

## CHAPTER TWO

### DEFINING KEY CONCEPTS

**B**efore we look into meta-theoretical orientations, it is important to have a clear understanding of the key concepts used in this doctoral dissertation. To do so, we shed light on the fundamental concepts gender and sex which constitute the leitmotiv in this work, then we try to grasp what is meant by stereotyping and, more specifically, by gender stereotyping, followed by a discussion on identity and how this term is conceptualized throughout this doctoral thesis. The chapter closes with a brief discussion of how the fundamental concepts are articulated within digital game culture at large. In reading this chapter, it should become clear that we attempt to build theoretical bridges between social-psychological and cultural paradigms. Our main theoretical contribution lies in applying a combination of concepts aligned to these different, yet related, academic perspectives.

## 2.1. The Construction of Gender/Sex

In explaining gender and sex, it is inevitable to dive into the large body of feminist theory. Whereas there is no such thing as a homogeneous and unified field of feminist theory, a common ground in feminism is its focus on sex and gender as crucial components of cultural and social life traversed by existing power relations (van Zoonen, 2000). Most feminist writers have argued for a social constructionist perspective on gender and sex in which biological determinism is completely refuted (Brickell, 2006; Butler, 1990; Oakley, 1972). This line of reasoning usually implies a conceptual distinction between sex as a biological given and gender as a cultural construction of femininity and masculinity. British sociologist and feminist Ann Oakley (1972) laid the foundation for disentangling sex from gender and defined the concepts as follows:

“‘Sex’ is a word that refers to the biological differences between male and female: the visible difference in genitalia, the related difference in procreative function. ‘Gender’, however, is a matter of culture: it refers to the social classification into ‘masculine’ and ‘feminine’” (Oakley, 1972, p. 16).

In other words, Oakley’s sex/gender dichotomy introduced a division of differences between *men* and *women* in terms of human biology and differences between *masculinity* and *femininity* rooted in culture, inspiring other sociologists to shed light on how norms of femininity and masculinity are regulated, legitimized, and (re)produced in society (Dunphy, 2000). An indispensable work in this matter concerns West and Zimmerman’s article *Doing Gender* published in 1987 which is considered a groundbreaking non-essentialist account of gender as socially constructed. The main idea of this article refers to “gender as a routine accomplishment embedded in everyday interaction” (West & Zimmerman, 1987, p. 125). Gender, in this vein, is something people *do* in the presence of others who are presumed to recognize this particular conduct as an utterance of masculinity or femininity. West and Zimmerman (1987) further argued that sex, sex category, and gender are analytically independent even though in Western societies, these concepts are often seen as congruent. While sex refers to socially

agreed upon biological criteria for classifying someone as female or male, sex category is accomplished through application of these sex criteria. However, as genitalia are conventionally hidden in public, sex categorization usually depends upon appropriate identificatory displays such as someone's clothing, hair, voice etc. Gender goes beyond identificatory displays and relates to one's *performance* as an incumbent of a certain sex category, i.e., *being* a woman or man. This performing of gender eventually creates differences between men and women resulting in a social order, which supposedly is regarded as "natural". Once the differences are established and seen as "essential" or "biological", they allow individuals to design their actions in accordance with normative gender standards hereby reproducing ideological social structures (Goffman, 1977; West & Zimmerman, 1987).

Some radical feminist scholars, however, have proposed to renounce the distinction between gender as culturally constructed and sex as biological. Butler (1990, 1993), for example, challenges this distinction and argues that sex, just like gender, is a social construction:

"If the immutable character of sex is contested, perhaps this construct called 'sex' is as culturally constructed as gender; indeed, perhaps it was always already gender, with the consequence that the distinction between sex and gender turns out to be no distinction at all" (Butler, 1999, pp. 10-11).

For Butler, bodies are themselves constructed *as if* they provide material foundations on which gender is constructed. This is not to say that physical bodies do not exist but it does indicate that their existence is created or, better, constructed as "prediscursive" prior to culture, a so-called neutral ground on which culture operates (Butler, 1990; Mikkola, 2008). Important hereby is the notion of "performativity", which is closely related to power discourse. Butler's (1993) theory of gender performativity stresses that gender constantly performs the identity it is purported to be, making gender identity in *casu performative*: "it only exists because it is done" (Duits, 2008, p. 39). The repeated performing of gender, then, helps to legitimate the notions of what is considered feminine or masculine in a specific

context, time, and place (Diedrich et al., 2013). Butler's account of gender performativity has been criticized, however. Seyla Benhabib (1992), for example, postulated that Butler's vision does not allow for the agency<sup>4</sup> that is necessary for furthering the emancipatory objectives of feminist movements. She argued that Butler, who describes agency as a variation in repeated performances (1990), does not account for the resources needed to establish that variation. Whilst a performative vision on gender succeeds in explaining how meaning is constructed, to be practically relevant, Benhabib claims that there should be at least some understanding of a "stable" subject to ground a feminist political agenda.

Besides countering biological determinism, feminist thinking has also transformed towards an intersectionality perspective, suggesting that gender should be understood in relation to other identities such as class, age, sexuality, and ethnicity (Shields, 2008). With their publication *Doing Difference* (1995), West and Fenstermaker revised their previous work and explained that gender, race, and class are simultaneously and intersectionally generating difference and dominance in social life. This is more than "the sum of its parts", more than, for example, Black women independently dealing with a struggle as a Black and one as a woman (Crenshaw, 1989), but it encompasses people's interrelated experience as "gendered", "raced", and "classed". In this vein, gender can never be experienced without simultaneously experiencing race and class (West & Fenstermaker, 1995).

In this doctoral dissertation, we agree that gender is a fluid, socially constructed concept that intersects with multiple other dimensions such as class, age, ethnicity, and sexuality. However, given the complexity of intersectionality, our aim is not to provide a comprehensive overview of all its intersections as this would be endless (Krijnen & Van Bauwel,

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<sup>4</sup> In social sciences, the concept of agency refers to one's capacity to act independently and to make free choices. Structure, on the other hand, refers to the social order of society, which limits an agent in his or her decisions and thus "free" choices (Barker, 2012). In other words, while agency allows individuals to position themselves as autonomous, structure sets the boundaries of these positions.



2015), but to focus on gender as our main research interest, keeping in mind that this is just one part of female players' interrelated and complicated experiences.

## **2.2. A Social Perspective on (Gender) Stereotyping**

The term "stereotype" has been coined by Walter Lippmann in his book *Public Opinion* published in 1922. In this work, Lippmann stressed the importance of stereotypes in ordering "the great blooming, buzzing confusion of the outer world [...]" (Lippmann, 1922, p. 81). The main idea of Lippmann's book was that people use stereotypes as shortcuts (i.e., generalities, patternings, or typifications) to make sense of their social context, making their understanding of the world less cognitively demanding (Dyer, 2002). This rather functional perspective on stereotypes as "simplifications" still serves as a common ground in social-psychological literature even though stereotyping has been discussed in a variety of ways (Condor, 1990; Stangor & Schaller, 2000). The British social psychologist Henri Tajfel (1981b), for example, mainly emphasized the social functioning of stereotypical practices as processes of categorization. Categorizing human groups in terms of general characteristics helps people to perceptually compare their own group (i.e., in-group) to outside groups (i.e., out-group) (Tajfel, 1981a). Moreover, this process of social comparison does not only entail the desire to see oneself as different from but also *better* than others (McDermott, 2009). Thus, whereas social psychologists generally describe stereotyping as a value-neutral psychological mechanism of "data-sorting", stereotypes seem to carry some connotations. Indeed, just as Tajfel, Lippmann recognized that stereotyping is not entirely neutral nor is it merely a shortcut; it is always grounded in social power (Dyer, 2002; Lippmann, 1922).

Social and cognitive psychological literature on stereotypes have been critiqued, however. Mainly theorists from a critical perspective have argued that stereotypes should be more clearly situated within their wider cultural, historical, and political context (Dyer, 1977; Pickering, 2001). Stuart Hall is one of the key figures in this debate, reasoning that stereotypes are aimed at reducing "people to a few, simple, essential characteristics, which are represented as fixed by Nature"

(Hall, 2003, p. 257), hence adding a negative connotation to practices of stereotyping. This discursive function of stereotypes, then, allows the ruling class to maintain, reinstall, and carry on the established hegemony<sup>5</sup> (Dyer, 1977). In explaining this signifying process, Hall (2003) distinguishes between “types” and “stereotypes” in which the former seem commensurable with social psychologists’ understanding of (cognitive) stereotypes (cf. *supra*). Types, which also correspond to what Pickering (2001) calls “categories”, are organizing our sense of the world into widely recognized characterizations. In other words, we *need* types in order to get along in the world and to guide our everyday interactions (Pickering, 2004). The essential difference with stereotypes is that types do not attempt to refuse flexible thinking with categories, leaving room for transformation. Stereotypes are more rigid and clear-cut in the sense that they symbolically fix and thus maintain “natural” boundaries between the acceptable and unacceptable; that is, between the powerful and the excluded (Dyer, 1977; Hall, 2003; Pickering, 2001). They do not recognize the mutability between the category and the individual, but deny that sort of connection and are used instead for negative moral evaluation (Pickering, 2004). Hence, there is an unambiguous connection between stereotypes and power as stereotyping can be considered a tool to exercise symbolic power.

Gender stereotyping, accordingly, functions as a mechanism to exercise symbolic power by making assumptions based on someone’s gender (Jacobson, 2005). In most contemporary societies, men exert (implicit) power over women, implying that gender stereotypes mainly serve to reinforce and perpetuate an ideological male-dominated hierarchy (Siann, 2013). It has been argued that media play a crucial role in disseminating stereotypical gender representations in which they are “(social) technologies of gender, accommodating, modifying, reconstructing and producing disciplining and contradictory cultural

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<sup>5</sup> The concept of hegemony was originally developed by Gramsci (1971) referring to a process in which a dominant group does not dominate by plain force but through consent of the subordinates. This so-called consent is achieved through the “naturalization” of power relations as if they are “commonsense” to the main public (Krijnen & Van Bauwel, 2015; van Zoonen, 2000).

outlooks of sexual difference" (van Zoonen, 2000, p. 41). Digital games, for example, often portray women in a stereotypical fashion by representing them as innocent, helpless, and sexual objects (Downs & Smith, 2010; Miller & Summers, 2007); hereby valuing "appropriate" gender characteristics of appearance and weak abilities in women (Jacobson, 2005). However, as the definition of van Zoonen already suggested, media also provide "contradictory" views on gender stereotyping. They are "polysemic" as media texts carry multiple meanings and are open to various interpretations (van Zoonen, 2000). For instance, although stereotypical representations of women in games have been heavily criticized (Summers & Miller, 2014), Royse, Lee, Undrahbuyan, Hopson, and Consalvo (2007) discovered that heavy female players are negotiating such representations as some stated to feel empowered in playing with "a sexy and strong female character [...] kicking a guy's butt 10 ways to Sunday" (p. 564).

This doctoral dissertation primarily elaborates on gender stereotyping in gaming by considering an often-mentioned implicit effect of stereotypical practices: *stereotype threat* (Steele & Aronson, 1995). As explained more clearly in the empirical chapters seven and eight, stereotype threat is a mechanism that occurs in situations wherein a stereotyped person fears to confirm a negative self-relevant stereotype, which paradoxically often results in confirming the stereotype (Hoyt & Blascovich, 2010; Inzlicht & Kang, 2010; Keller, 2007). This psychological mechanism demonstrates that stereotypes about a social group affect people on a very personal level even though one does not endorse an established stereotype. The mere presence and salience of stereotyping seem sufficient to reinforce a hegemonic power structure (Tajfel & Turner, 1986). In what follows, it becomes clear that stereotyping is closely related to the identity concept as stereotyping defines the symbolic boundaries of who can legitimately take on a so-called "freely chosen" identity and who cannot.

### **2.3. Does Identity Matter?**

Cultural and social theories on identity have in common that they accept "both individual and collective identities to be multiple rather than single, to be dynamic rather than static and to be volatile rather

than consistent" (van Zoonen, 2013, p. 44). Nonetheless, while there is to some extent interdisciplinary consensus about identities being culturally produced and situated in social and historical contexts, there is also much debate on how identity processes operate and how the term "identity" should be conceptualized (Adriaens, 2012). Some authors even claim that this incompatibility on the concept of identity among, and even within, various social disciplinary areas has led to an unstable situation in which the concept is "abused" and "overproduced" with different meaning (Brubaker & Cooper, 2000).<sup>6</sup> This is not to say that it has no more value. Hall (1996), for example, argues that identity is useful in two distinct, yet related, ways. First, he mentions that the abundance of critique on identity puts key concepts "under erasure"; however, these critical voices fail to replace them with different concepts. This makes the concept of identity hitherto irreplaceable – albeit in their "deconstructed" and "detotalized" forms. A second reason Hall identifies for maintaining the concept of identity is that it should be thought of as a discursive construct in which agency and politics play a crucial role (Hall, 1996). Indeed, whereas identities are fairly self-chosen, choices are set within structural and discursive constraints (Duits, 2008). These constraints are very abstract as it is not something that we experience directly; some patterns are well recognized while others tend not to be seen at all (e.g., blocked access of female players to gaming practices) (Stets & Burke, 2003).

Then, what identity perspectives are dominant in contemporary social sciences? As it would be an overwhelming task to provide a comprehensive list of the literature on identity, we can distinguish two leading strands of theorizing and research, namely: social cognitive and

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<sup>6</sup> We are aware of the fact that some authors prefer to distinguish between identity and identification as two distinct, yet associated, constructs (e.g., Brubaker & Cooper, 2000; Gandy & Oscar, 2000; S. Hall, 1996). Brubaker and Cooper (2000), for instance, advocate for using the term "identification" as an alternative for "identity". They specifically argue that the former is better suited to indicate a *process* in flux instead of a stable *condition* across time or persons, which relates more to identity. In this thesis, identification is not so much a noun but is considered a verb. Similar to Butler's notion of gender (1990), identification is something we do; it is the "doing of identity" within a cultural social order.

symbolic interactionist perspectives of identity (Howard, 2000). While the former perspective has its roots in psychological identity theory and mainly relies on experimental laboratory methodologies, symbolic interactionism finds its origin in sociological identity theory and is generally associated with ethnographic methods for analyzing identity in an everyday context (Howard, 2000; Stets & Burke, 2003). In the social cognition tradition, identities are represented as “cognitive schemas, abstract and organized packages of knowledge” (Howard, 2000, p. 368), allowing us to summarize and reduce information about people, objects, and situations for cognitive efficiency. This sociocognitive processing is a central tenet in social identity theory developed in the late 1970s by Henri Tajfel (1981b; 1979; 1978), but was more fully defined in combination with John Turner’s self-categorization theory (1985). The basic idea of this theoretical framework is that individuals define their identities along a continuum of being a unique individual (i.e., personal identity) to being a group member (i.e., social identity) depending on contextual demands (Howard, 2000). “Depersonalization” of the self is the basic process in which people act as embodiments of a relevant in-group (stereo)type; it brings self-perception and behavior in line with a specific type and thus transforms a personal identity into a social identity (Hogg, Terry, & White, 1995). This, however, is no neutral-free process as the embodiment of a group type is based on societal meanings and norms, leading individuals to view themselves in ways defined by the social structure (Abrams & Hogg, 2006).

Moreover, though inherently different from social cognitive perspectives of identity, symbolic interactionism shares this vision on the social nature of self as constituted by society (Hogg et al., 1995). An important premise of symbolic interactionism is that these norms are developed and transmitted through interaction. A more structural approach within this field relies on the concept of role identities wherein social structure is explicitly linked to people’s roles in society (Stryker, 1987; Stryker & Serpe, 1982). Role identities, in this vein, correspond to “internalized positional designations” of different positions or roles a person holds in society (Stets & Burke, 2003). For example, female players’ selves as a woman is an identity, as well as their selves as colleague, friend, and any other myriad of role possibilities. The self is

thus not an autonomous psychological entity, but a multifaceted social construct dependent on the roles people have in society. These role identities of the self not only gain meaning through concrete role specifications, but also from relevant "counterroles" (Hogg et al., 1995; Howard, 2000). The role of "man", for instance, takes on meaning when compared to its opposite role of "woman". Hence, one is verified not in being similar to one another (as in social identity theory), but the verification of each identity depends upon a counteridentity in a reciprocal manner (Burke, 2004).

Stets and Burke (2003) have argued that social identity theory and identity theory<sup>7</sup> show many similarities despite of a lack of cross-referencing in academia. The main resemblance lies in their vision on the self as differentiated into multiple identities in confined practices such as norms or roles which exist prior to the individual (Hogg et al., 1995). Both theories, however, have remained peripheral in explaining personal identities. Social identity theory presumes personal identity as the lowest level of self-categorization on the extreme individual end of the continuum (cf. supra), while identity theory regards personal identity as tied to an individual rather than to a role in society (Stets & Burke, 2003). Thus, both perspectives describe personal identity as distinct from social identity rather than as relational constructs. Deaux (1993), in contrast, argues for an interplay between the two identities, asserting that personal identity is to some extent defined by group membership, and that social identities are permeated with personal meaning. Hence, each is necessary to give the other meaning.

In coming to a definition of identity, we share this vision of Deaux on personal and social identities as fundamentally interrelated and argue that the status of social identities are reflected in people's self-esteem. Or vice versa, as people are motivated to evaluate themselves positively, they tend to positively value those groups to which they belong (Howard, 2000). Thus, we acknowledge that social identities are

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<sup>7</sup> We refer to identity theory as a particular view of identities grown out of the symbolic interactionist tradition. Borrowing from Stets and Burke (2003), it can be understood as a theory taking into account "individual role relationships and identity variability, motivation, and differentiation" (p. 133).

articulated with personal identities; however, since our thesis focus is mainly on intergroup relations and group processes, we believe that a social identity perspective best suits our goals. Social identity is defined as a multifaceted and dynamic construct responding to changes in long-term intergroup relations and immediate interactive contexts (Hogg et al., 1995), a sociocognitive mechanism that categorizes people based on some socially shared features and beliefs (Tajfel & Turner, 1986), which may yet fluctuate in different cultures (Deaux, 2002), characterized by an emotional significance of that group membership (Ellemers, Spears, & Doosje, 2002). This social identification will have further behavioral consequences for how one interacts with out-group members and is, in turn, depended on how motivated one is to identify as a group member (Deaux, 2002). It should be noted, however, that identities are not strictly delineated, nor do they serve clear functionalist goals. This thesis approaches identities as hybrid and dynamic concepts that interact with and among other defining identities.

#### **2.4. Bringing Concepts Together: How Do Gender, Stereotyping, and Identity Reside in Digital Game Culture?**

This doctoral dissertation concentrates on *digital* games rather than the commonly used denominator *video* games. Digital, in this line of reasoning, covers a broader definition of games as it semantically refers to everything “available in electronic format” (Dictionary.com, n.d., para. 5), while video is traditionally associated with a clear-cut “raster display device” (Video game, n.d.). The main motivation for using digital games is that this term emphasizes all types of games with a digital component such as pervasive games, city games, computer games, and others, excluding non-digital game formats such as board games, TV quizzes etc. Digital games consist of “any game that can be played on any type of digital platform” (De Grove, Courtois, & Van Looy, 2015, p. 353) such as computers, consoles, handhelds, and mobile phones. Moreover, game players have been extensively studied within the academic field. The majority of game studies is practiced by individuals belonging to various academic disciplines such as

communication, literary studies, psychology, sociology etc., making the field of game studies a multidisciplinary area (Mäyrä, 2008). Whilst gaming as a study object mostly depends on the discipline's tradition, we do acknowledge some recurring "themes" in game studies. These themes are often related to the dangers associated with playing such as addiction (e.g., Grüsser, Thalemann, & Griffiths, 2006) and aggression (Sherry, 2001), or, on the other hand, are focused on how games can positively impact players with respect to entertainment (e.g., Vorderer, Hartmann, & Klimmt, 2003) and learning (e.g., Connolly, Boyle, MacArthur, Hainey, & Boyle, 2012). Although studies on gender and games have also been booming in the past (two) decennia, often focusing on representation (e.g., Miller & Summers, 2007) and gender differences (e.g., Lucas & Sherry, 2004), there is still a need for research into greater socio-cultural issues such as the role of stereotyping in women's play experiences (Richard, 2013).

Yet, one could wonder if the abovementioned research need is still prevalent given that games are nowadays widely available (thus "normalized") and attract a whole range of people including women (van Rooij, 2011). The proliferation of game genres, e.g., adventure games, shooters, casual games etc., has led non-traditional audiences such as elderly and women to discover digital gaming. Recent numbers of an industry U.S. game report indicated that the gap between the sexes has largely closed with 56% of male and 44% of female players (ESA, 2015). When looking at Flanders, Belgium, a similar trend is noticed with 52.5% male and 47.5% female players (Digimeter, 2014). However, it is pivotal to distinguish the act of playing games from being a gamer or, put differently, identifying as gamer (Shaw, 2012a). It is this notion whereupon this doctoral dissertation is ultimately based.

Who then is considered to be "a gamer"? To answer this question, one should look into the (Western) history of digital games to better understand how game culture became constructed as Caucasian, heterosexual, and, above all, male (Shaw, 2013; Vanderhoef, 2013). Whereas the first games were developed by male scientists, the emergence of games on the market was not deliberately aimed at one specific target group. Early game developers and designers had little idea about who was actually playing and buying their games. This



“laissez-faire” attitude continued to exist until the game industry crash in 1983 caused by a combination of poor economic times, increased competition, low-quality games, and inadequate (or lack thereof) marketing decisions. Suddenly there was the need to take on a more strategic lens and focus on market segments that were most definable and likely to buy their games: young men. This formula of male targeting (amongst other effective developments) proved to be a massive success in terms of games’ increasing popularity<sup>8</sup>. The whole game industry saw a chance at making money again and started to “reinvent” games targeted at boys. The following decennium was characterized by campaigns heavily marketing games as products for boys, which was later on expanded to adult men (Bakie, 2010; Lien, 2013; Shaw, 2013; Towhey, 2015). As a reaction against this fusing of games with masculinity, a Girl Games Movement emerged in the 1990s, designing and producing digital games specifically aimed at young girls, e.g., *Barbie Fashion Designer* (Mattel, 1996). However, given that this movement was based on the belief that girls would not enjoy “real” games associated with boys, this kind of targeting further distanced women from mainstream games. Shaw (2012a) explained that marking “girl gamers” as a market, whether they feel appealed by those attempts or not, acts as a form of marginalization making gender a salient category when talking about games. The “othering” of women, i.e., emphasizing those who are different from the powerful mainstream (Johnson et al., 2004), continues until today even though the digital game market has expanded with a diversity in content, genres, and representation (Graham, 2014; Scharkow et al., 2015). Chapter five elaborates on this matter and explains how present-day mechanisms of exclusion actively work on keeping women out of game culture in order to preserve a male gamer ideology (Consalvo, 2012). While we limit ourselves to three case studies in chapter five, it

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<sup>8</sup> The launch of Nintendo’s game magazine *Nintendo Power* in the 1980s played an important part in the re-popularization of games by shaping a strong game culture. It helped to raise and stabilize a loyal gamer market and made readers feel as if they were contributing to the construction of a gamer identity through *Nintendo Power’s* feedback elements (Consalvo, 2007).

becomes clear that stereotyping goes beyond these examples and remains an imperative issue in digital game culture at large.

Altogether, digital games are gendered and players' gender matter. Historical practices and cultural norms have constructed a medium entrenched with gender, "naturalizing" and "essentializing" gamers as male. This does not mean that all gamers are male, but it does indicate that the discourse of digital game culture is stereotypically masculine (Schut, 2006). Stereotyping, then, serves as "a strategy of splitting" (Hall, 2003) between those culturally legitimate as players and those who are not. It is a tool to situate and perpetuate the belief of a male dominance in game culture. Or, connected to identity, the act of stereotyping sets restrictive boundaries for women (and other anomalies in game culture, for that matter) in which identifying as a gamer is refuted due to norms which allegedly pre-exist individuals. Notwithstanding, women can and are enjoying digital games and thus have to negotiate their gaming pastime. This negotiation regularly translates itself into a kind of isolated play in which women take on a "closeted gamer identity" (Taylor, 2008, p. 54), i.e., an identity of invisible player, or even reject this label entirely (Shaw, 2012a). When women do trespass gendered norms and take on a visible gamer identity, they potentially face being exposed to harassment or discrimination (see for example: Fox & Tang, 2014; Jenson & de Castell, 2013; Lukianov, 2014). Female players are clearly operating in a situation of stereotype threat in which they not only play a game, but "concurrently disprove a number of stereotypes about females and aggression, technology and willingness to challenge males" (Bertozzi, 2008, p. 483; Richard, 2013). Hence, although "gamer identity" has no true substance, it appears to have real consequences for those who do not fit within the cited discourse of digital game culture.

## CHAPTER THREE

### RESEARCH ORIENTATION

Communication can be examined from different theoretical angles leading to different types of theory and ways of understanding communication processes. To situate our meta-theoretical position within this myriad of perspectives, it is pivotal to provide an overview of the ontological, epistemological, and axiological loci that define this doctoral dissertation. We start chapter three by introducing each meta-theoretical position and subsequently frame our research into these perspectives. Next, we try to start a dialogue between feminist and post-positivist points of view in attempting to position our work as academically “hybrid”. Focus is hereby mainly on methodological considerations.

### **3.1 Meta-theoretical Considerations**

#### *3.1.1. Ontological, Epistemological, and Axiological Orientations*

There are several schools of thought on theory development in the communication discipline, which fundamentally differ from each other depending on their meta-theoretical foundations. But what are meta-theoretical considerations specifically? Katherine Miller's (2005) book on communication theory provides a clear overview of three specific areas of meta-theory hereby referring to assumptions about ontology (the nature of reality), epistemology (the nature of knowledge), and axiology (the study/the role of values). Questions about ontology are mainly concerned with the nature of the phenomena that we address in our scholarship – in the field of communication comprising the nature of the social world and how people interact within this world (Miller, 2005). The way scholars understand and conceptualize human communication depends on their ontological stance. Accordingly, there are three ontological positions relevant to the study of communication: realism, nominalism, and social constructionism (Littlejohn & Foss, 2009). Burrell and Morgan (1979) define a realist position as the belief that the social world is a "real" world constituted by tangible and rather immutable structures. This real world occurs independently of individual perception denoting that it exists "out there" and thus pre-exists any human individual. In contrast to a realist ontology, a nominalist ontological stance asserts that there is no world out there, but postulates that a social world is artificially created by the names, labels, and concepts people apply and use in structuring reality. It is by far a real or objective world (Burrell & Morgan, 1979; Miller, 2005). Furthermore, a third ontological perspective is defined, taking a somewhat intermediary stance between a realist and nominalist ontology: social constructionism. This position was coined by Berger and Luckmann (1991) who aimed to join together the aforementioned polarized standpoints between social reality as exclusively objective or fully subjective. A social constructivist point of view perceives reality as an ongoing human product in which objectivities arise when cultural meanings become permanent and settled as "objective facts" into people's mind. In other words, social constructionists see the world as a dynamic process that is created, disseminated, and reproduced by

people acting on their own perceptions (Littlejohn & Foss, 2009). It is this ontological assumption that is underlined throughout this doctoral dissertation. Our vision on gender (cf. *supra*), for example, serves well as a social constructionist text which has “real” consequences for sexed individuals. Gender roles have a history, are being reinforced by cultural and social knowledge, and receive legitimation through various sources such as games, film, literature etc. This in turn creates the assumption that gender has natural and causal power instead of being socially constructed through historical and social interaction (Sismondo, 1996). Hence, our research results may gain understanding of dominant constructed patterns on gender and how they are endorsed and acted upon in contemporary game culture. These patterns are not so much natural as the result of a situated practice.

Furthermore, one’s commitment to a particular ontology will simultaneously influence one’s epistemology as beliefs about the nature of the social world go hand in hand with knowledge about that world (Miller, 2005). Epistemological positions in communication scholarship involve ideas about what knowledge of human communication is and how it is constructed. Similar to the ontological realist-nominalist continuum, we can distinguish an ordinary dichotomy between an objectivist and subjectivist epistemological position. Whereas an objectivist stance believes that it is possible to *explain* the social world through examining causal relations and regularities, a subjectivist stance tries to *understand* social phenomena based on the view of individuals directly involved in the studied activities (Burrell & Morgan, 1979; Miller, 2005). As such, social science can essentially be seen as either empirically objective or individually subjective. Our research assumes an objectivist epistemology in which we make use of scientific methods in search of (socially constructed) objectivities. Drawing on quantitative methods, we aim to explore some trends that add to our understanding of women’s play experiences. However, given that a pure objectivist position postulates a separation between knower and known (Miller, 2005), we reject this assumption and recognize that all observations are influenced by value orientations making a strict distinction between researchers and objects of study untenable. This assumption is also connected to axiological considerations in communication theory. Accordingly, axiology focuses

on values and discusses how theory should reflect these values (or not). Though most social researchers nowadays refute the notion that values can be completely expunged from research processes, many still advocate a limited role of values in theory development. Again, several axiological positions can be traced in communication theory ranging from a preferred rejection of all values in the research process to the embracing of values in research and theory development (Littlejohn & Foss, 2009; Miller, 2005). This thesis corresponds with the latter vision as we intend to gain insight in processes of power and ideology for promoting social change in a gendered game culture. This should not imply that we avoid questions of objectivity, however. Another goal is to deploy high epistemic values, i.e., "high standards in the conduct of research and theory development" (Baran & Davis, 2015, p. 17), pursuing to "get as close as possible" to seeming objectivities based on constructed gendered patterns. We believe that gathering these insights will serve our activist goal in addressing power practices towards women who engage in digital gaming. Hence, while we strive to implement our research in a fashion that is as value-free as possible, we acknowledge that the goals that propelled our research are driven by a commitment to social change and emancipation.

### *3.1.2. Post-positivist, Interpretive, and Critical Perspectives*

The aforementioned meta-theoretical considerations have led to plural and multifaceted approaches of theory development in the field of communication. Generally, though not limited to, three approaches now dominate within the philosophy of social science: post-positivist, interpretive, and critical theories (Miller, 2005). However, in explaining these perspectives below, one should keep in mind that they are often not stringently delineated in practice.

In the post-war era, positivism was perceived as the dominating philosophy of science in an Anglo-American sphere. It was until the late 1960s, however, that positivist theory became the target of strong criticism due to their claim of absolute truth and their assumption that knowledge could only be gained through measuring observable phenomena (Alvesson & Sköldbberg, 2009). This rejection of a positivist perspective led to the emergence of different philosophies of sciences,

yet some theorists did not postulate a complete refusal of positivist assumptions (Miller, 2005). The latter is mainly associated with post-positivism, a theory based on empirical observation guided by the scientific method<sup>9</sup> while simultaneously accepting that the social world exists apart from our perceptions. Its epistemological stance, then, is oriented towards knowledge as gained through a search for uniformities and causal relationships (Baran & Davis, 2015). To post-positivists, scientific methods should be applied with caution to be as unbiased and accurate as possible; for example, by finding consensus about our observations in the community of scholars (e.g., validation of measuring scales). Post-positivism's axiology thus wants to limit the role of values in research processes even though they agree upon notions that societies are socially created (Alvesson & Sköldberg, 2009; Littlejohn & Foss, 2008).

An interpretive perspective dismisses post-positivists' attempts to explain reality through scientific methods, but advocates a subjective epistemology in which causalities and regularities are non-existent. Central to interpretivists is "a local understanding of specific social collectives and specific events" (Miller, 2005, p. 58), or put differently, the belief that knowledge can only be acquired through the subjective experience from others. Instead of the scientific method, interpretivists hereby deploy research methods such as in-depth interviews and participant observation. Evidently, then, the axiology of interpretive theory espouses, rather than eliminates, the influence of (researcher) bias from observation (Baran & Davis, 2015). Although we grant external influence into the research process, this thesis is not considered interpretive as we believe in empirically indexing uniformities to investigate gender norm endorsement and behavior.

The main thing that post-positivists and interpretivists have in common is their assumption that theory should further understanding or explanation about the social world. Some theorists, however, do not share these research goals, but advocate a transformation of an

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<sup>9</sup> The scientific method can be understood as "a search for truth through accurate observation and interpretation of fact" (Baran & Davis, 2015, p. 8). Typical methods herein are experimental or survey research (Miller, 2005).

inherently “flawed” social world. Especially critical theorists advance this political standpoint of reorganizing existing processes of ideology through the accumulation of knowledge (Baran & Davis, 2015; Miller, 2005). In axiological terms, these scholars emphasize their role in uncovering constraining hegemonic practices and aim to liberate oppressed individuals within this realm (Littlejohn & Foss, 2009). Whereas critical theory is no unified theory (nor are the preceding theories, for that matter), some general areas of scholarship can be situated within the critical tradition. Feminist criticism is one trajectory in this school of thought and particularly important with an eye on our research purpose. As explained in chapter two, feminism perceives gender as a defining feature of social life and assumes a patriarchal (i.e., male-dominated) constructed society. It shares critical theory’s ontological vision of social constructionism including an epistemological belief in the connectivity between the investigator and the subject of the investigation (Miller, 2005). Moreover, feminist theory adheres with an activist stance in axiological systems, which is also the driving motivation of our doctoral research.

Taken together, the preceding theoretical perspectives are grounded in and claim distinctiveness based on the various ontological, epistemological, and axiological meta-theoretical assumptions. The position of this doctoral dissertation is somewhat arbitrary, however. While we broadly agree with post-positivist perspectives of ontology and epistemology, there is undoubtedly some overlap with feminist critical points of view. Instead of choosing one side, focus is on convergence and complementarity. The next section attempts to start a dialogue between these – at first sight – conflicting theoretical perspectives and tentatively offers an alternative to integrating feminist values into (methodological) post-positivist research.

### **3.2. A Dialogue Between Post-positivism and Critical Feminism**

Feminist scholars have strongly criticized the dominance of the positivist school of thought in social science research. In fact, some claim that feminism has arisen out of crises and contradictions in a positivist research era (Williams, 2005). An often mentioned feminist



critique on positivism is that it privileges androcentric accounts of knowing and that gender is too limitedly conceptualized (Peterson, 1992; van Zoonen, 2000). A major obstacle also relates to methodological differences grounded in contrasting ontological considerations of reality (Harnois, 2013). Whereas positivists believe in quantitatively measuring an objective reality, feminists insist on recognizing subjectivity and qualitative inquiry “from the inside”. Positivism eventually turned into post-positivism, advocating a less strict realist stance; however, its endured focus on the scientific method reproduces an uneasy relationship with feminism (Miller, 2005; Peterson, 1992).

### *3.2.1. Feminist Methodological Critique on Quantification*

Epistemological beliefs inform the methodology that researchers deploy. Each methodology is based on assumptions about what knowledge is and how knowing is best accomplished. With this in mind, feminist scholars tend to see quantitative research as being at odds with feminist theory (Harding, 1987; Sprague, 2005). Several feminist critiques have been raised on quantitative research practices originated in traditional social sciences. To understand the antipathy towards quantitative methods, it is pivotal to consider the historical contexts in which critical feminist studies emerged and established its presence. One important explanation is that key founding figures in feminist and cultural studies had backgrounds in literary studies, instead of the social sciences, which provided innovative and different ways of thinking about communication (Deacon, 2008). Hall’s (1973) encoding-decoding model, for example, changed the at that time dominant transmission paradigm leading to a rearrangement and review of feminist media theory and research (van Zoonen, 2000). Methodologically, this shift toward a ritual view of communication identified quantitative methods as “intractably inflexible and ill-conceived” (Deacon, 2008, p. 91), arguing that quantitative research is limited in its ability to consider the social and historical contexts in which it is produced. This makes it especially hard to identify social problems (e.g., gender imbalances) and subsequently formulate social solutions (Harnois, 2013).

Another feminist critique of quantitative methodologies concerns the use of standardized measures and its relatedness with dominant standpoints. Creating measures, in this argumentation, produces artificial distinctions which are drawn from and particularly favor the judgment of privileged groups. This judgment, accordingly, shapes what is (continued to be) measured and what is not (Sprague, 2005). Moreover, accusations have been raised that statistical analyses serve a political discourse. Hughes (1995), for example, asserted that “the politics of domination are integrated into the scientific method and used as a social and political agent for those in power” (p. 395). Using statistics, in this vein, serves to justify and validate differences between “the normal” and “the other” (e.g., women, LGBT etc.) in which underlying continuities are obscured. Also, the “normal” are often defined in a descriptive sense as a statistical average, neglecting the needs and visions of minority groups. Once statistical numbers establish differences between groups and decide what is regular or not, they are illusively recognized as objective facts (Deacon, 2008; Hughes, 1995; Schüklenk, Stein, Kerin, & Byne, 2013).

Finally, another common feminist objection against quantification is that quantitative scholars cannot simply “add gender and stir” (Caprioli, 2004, p. 259). Feminist research requires something more than gender being one of many variables merely conceptualized as an additive into survey or experimental studies. It is contended that quantitative research too often reduces gender to sex as a dichotomous variable (i.e., man vs. woman) without considering that gender is socially based (Harnois, 2013).

### 3.2.2. *Counting Counts*

While feminist scholars have rightfully addressed aforementioned concerns, we have some reservations regarding the hesitation towards quantification. Foremost, although statistics should be read critically, not all numerical evidence is inexorable corrupt. The identification of difference, for example, is an essential prerequisite for marginalized groups to be recognized as such and subsequently receive support (Deacon, 2008). Oakley (1998) asserts that statistics proved to have served feminist goals in the past by revealing the extent of poverty and

inequality paving the way for social reform. Besides the documentation of material inequalities, quantitative research has also contributed to exposing changes in gender ideology and cultural representations of men and women (Harnois, 2013). For instance, a large-scale content analysis of video game characters by Williams, Martins, Consalvo, and Ivory (2009) revealed, on the one hand, a systematic overrepresentation of males, whites, and adults, and on the other hand, an underrepresentation of females, Hispanics, Native Americans, children, and elderly. This study succeeded in addressing questions of power and identified an incongruity in representation between game characters and the actual population (including game players themselves) based on quantification.

Another critique on quantitative research concerns its association with the political misuses of its creators. Indeed, history shows that statistics are socially constructed as an objective science serving the eugenic goals of a male and white superiority (Hughes, 1995). Anne Fausto-Sterling (1985), for instance, asserted that much research is built to validate so-called biologically-rooted gender differences, separating the men from the women. Whilst we do not deny the early association of statistics with patriarchal domination, we do claim that this does not make statistical analysis automatically incorrect or internally deficient (Deacon, 2008). A major advantage of quantitative analysis is exactly that it is transparent because of its emphases on standardization of procedures and researcher control, lending itself to repetition and evaluation. This in turn helps to improve research validity and reliability; however, at the same time, the transparency of quantification facilitates critiques of them (Sprague, 2005).

Agreeing that gender is a social construction, the addition of sex in survey or experimental research is not necessarily conceived erroneous. Caprioli (2004), for example, has proclaimed that gender categories, though socially based, have real implications for individuals and social relations. Gender is conflated and interdependent with sex. To measure complex concepts such as gender, then, quantitative studies use indicators of objects that are not directly observable. Sex, in this respect, becomes an indicator of gender and can be empirically measured to advance feminist goals of social justice (Caprioli, 2004).

Important hereby is that it is reflected upon *how* gender constructs and affects identified sex-differentiated outcomes (Carpenter, 2002). This allows us to cite a constructionist explanation in indexing the extent to which groups endorse dominant gender representations and behaviors (Luyt, 2015). We therefore believe that sex can be a meaningful category in feminist analysis because it helps us understand the effects of dominant feminine and masculine stereotypes.

Finally, our main concern relates to an embedded hierarchy of methodologies in feminist analysis. Feminist scholar Ann Oakley (1998) has indicted feminist methodology to be “itself gendered”, further claiming that “one of the chief functions of the quantitative/qualitative dichotomy is an ideological representation” (p. 707). She argued that the “paradigm argument”, in which quantitative and qualitative research are historically seen as opposed, is in fact purely a social construction. This construction of a polarization of methods has impeded critical thinking about developing and using ways of knowing in order to create emancipatory knowledge for women. Disciplinary norms in academic paradigms structure this knowledge process and render some research questions, theories, and, thus, methods as more legitimate than others (Harnois, 2013). Given traditional feminists’ preference for qualitative methods, they seem to commit the same error they accuse positivists of making “by limiting their definition of legitimate scholarship based on methodology” (Caprioli, 2004, p. 256). Rather than expanding methodologies to promote inclusiveness in the field, such polarization practices discriminate against quantification and thus obstructs methodological pluralism. We argue that the addition of more quantitative methods could contribute to feminist scholarship in capturing the lives and experiences of women.

### *3.2.3. Bridging the Gap*

Qualitative and quantitative approaches both have substantial limitations when used one without the other. Whilst qualitative research needs generalizability, quantitative studies need contexts (Williams, 2005). Indeed, it is now widely accepted that multi-method approaches, the combination of quantitative and qualitative research methods, are the best way to dissolve methodological deficiencies and

advance understanding (Deacon, 2008; Williams, 2005). Yet, this dissertation, which supports quantitative measurement as informed by social constructionism, wants to disprove the ideological assumption that quantification cannot be feminist *an sich*. To invigorate our feminist empiricist standpoint, we refer to the work of Joey Sprague (2005) who advocates the use of quantitative methods to forward critical feminist scholarship. In her review about preceding exemplars of feminist quantitative research, she defined three crucial characteristics of how feminists can deploy quantitative methods. We argue that what makes our work feminist is based on these points.

Firstly, a distinctive methodological pattern was found in the questions that feminist exemplars are asking. Feminist empiricists should challenge the idea of essentialism of gender behavior and outcomes. Whilst mainstream research has persistently tended to emphasize differences between men and women as an essential dichotomy, feminist quantitative scholars have questioned these notions of naturalness and focused instead on how gender patterns are articulated with power (Sprague, 2005). To qualify as feminist, these kinds of questions are informed by feminist values, focusing on issues of social justice related to women's lives. Non-feminist research, on the other hand, uses gender only in an analytical matter and lacks any explicit political agenda or effort to overcome gender oppression (Carpenter, 2003). Another kind of question feminist empiricists ask themselves is related to how inequality is legitimately produced and re-created in social interaction. The experimental studies in this dissertation (chapters seven and eight) serve as examples of such research asking questions about persistent gender inequality in game play. These studies explicitly focused on how women's lower social status when playing games makes them less confident and leads them to behave in ways that are subsequently perceived as evidence of their lack of competence. While such practices may reproduce social inequality among genders, these studies provide evidence of how gendered behavior is deeply embedded in power discourse.

Secondly, for their research to be eligible in social science, quantitative feminists are required to use standardized measures. However, some recognize that these measures are often developed from the standpoint

of privileged groups such as men. Many therefore challenge conventional approaches to measurement and build alternative measures by focusing on issues and everyday experiences of marginalized groups (Sprague, 2005). The empirical study in chapter six, for example, explores which stereotypes about digital games are common in the minds of women. Based on exploratory focus groups with female players talking about gaming, new measures were tentatively developed in order to map their general and gender-specific stereotypical perceptions of gaming.

Thirdly, quantitative feminists often organize their analyses by focusing on conventional models that include measures of gender and other dimensions of social inequality. Many of these scholars (e.g., Barth, Guadagno, Rice, Eno, & Minney, 2015; Cokley et al., 2015) look for interactions of other interesting variables with gender; or put differently, they look beyond gender being an “add-on” variable and try to uncover its interplay with other possibly predictors of social inequality (Sprague, 2005, p. 112). Again, the study in chapter six can serve as an example given that it tested the significance of the interactions between sex of game players and individual motives and play frequency. This allowed us to formulate nuanced explanations of players’ stereotypical beliefs and genre preferences. Moreover, another approach of organizing feminist statistical analysis is to do separate analyses on socially distinct groups of people (Sprague, 2005). Studies in chapter seven, eight (experimental studies), and nine (final survey study), respectively, focused exclusively on an - often ignored - female playing audience. A major advantage of this approach is its ability to reveal different strengths or patterns of biases in social processes from the standpoint of women. For instance, statistical patterns were found proving that stereotype threat operates differently in the case of female players who are highly competitive or attach importance to labelling themselves as gamer.

Taking the above considerations into account, feminism as an emancipatory movement in science needs to include a range of methods in which quantitative methodology should have an accepted and appreciated place. This doctoral dissertation can be classified as a feminist empiricist work combining post-positivist insights and methods

with theoretical feminist critical points of view. It specifically calls upon a constructionist ontological stance, an objectivist epistemology, and social activist axiology underpinning feminist research goals. Moreover, although the authors of this thesis may have normative commitments, this does not mean that we do not aspire value-neutrality in studying the effects of socially constructed patterns and ideas in digital gaming. It is our view that predicting and explaining gendered patterns entrenched in an androcentric game culture are crucial prerequisites in attaining emancipation and empowerment of female game players.





# CHAPTER FOUR

## RESEARCH METHODOLOGY

**T**his chapter delves into the used research methodology of the subsequent empirical chapters. As previously mentioned, this dissertation consists of six empirical studies of which each study aims to provide more clarity on the main research question. In what follows, we provide a summary of the six studies detailing the chapter to which they belong, their respective titles, concrete research purpose, and utilized research methods. While it is not our intention to elaborate on the basic characteristics of the employed methods (cf. each paper already describes these methods in detail), we do introduce psychophysiological measurement as a relatively novel research method within the communication discipline.

### 4.1. Methodological Toolbox

This doctoral thesis aspires to answer the central research question of *how gendered practices in digital gaming affect the game experience of female players* by employing several ways of data collection and analysis. The majority of used methods can be classified under the heading of quantitative measurement (expect for study I). This choice was made because quantification is particularly suited for assessing the endorsement of gender norms and variations therein among social groups such as female players (Luyt, 2015). Also, we were motivated to counterbalance the large amount of qualitative feminist research in which gender and digital gaming is often studied (if studied at all, that is). This does not mean that we are not aware that favoring a quantitative approach could entail a potential loss of insights on a closer level of inquiry. We do believe that combining insightful case study research with quantitative multi-methods allows us to adequately answer our central research question. For an overview of the empirical work, research purpose, and used methods, we refer to Table 1. Concretely, six empirical studies were executed and currently accepted, published, or under review in peer-reviewed journals, expect for study five, which forms an extension of the forth study and is based on a short conference paper. Both studies are therefore included into one chapter (cf. Chapter eight).

Study I, entitled *A Gendered Identity Debate in Digital Game Culture*, offers a critical reflective view on contemporary gender issues in game culture. Besides providing a theoretical explanation of degrading gendered practices, this study deploys a qualitative approach by expounding several case studies on how female players are disparaged and how this process manifests itself in digital game culture. This study contributes to our general research question as it explains the context in which women play and the intrinsic mechanisms that are at work. In other words, study I sets the scene for the subsequent empirical studies. Study II, with the title *"I Play So I Am?" A Gender Study into Stereotype Perception and Genre Choice of Digital Game Players*, is our first empirical quantitative study that aims to explore how gendered patterns are generally entrenched in the minds and play habits of both male and female players. This study starts off with two exploratory

focus groups serving as a guide for posing questions in our survey questionnaire. Survey data is analyzed by employing a factorial ANOVA and a logistic regression approach. Focus is on specifying attitudes towards gamer stereotypes and whether socially constructed gender preferences in games can be verified. Moreover, it adds to answering our central research question by delving into the intersection between being male/female, gaming habits, and play motivations. Study III is entitled *Challenging the Other. Exploring the Role of Opponent Gender in Digital Game Competition for Female Players*, and is our first experimental study providing an answer on how female players are affected by gendered practices in digital gaming. It sets up an environment in which women are confronted with cross-gender competition in games and tries to identify the underlying mechanisms that define women's emotional and behavioral responses. Specifically, this study deploys a mixed analysis of variance in which self-report measures and logging data are examined for taking under scrutiny players' skill perception. Study IV, *Playing Under Threat. Examining Stereotype Threat in Female Game Players*, is our second experimental study that aims to specify whether and how the psychological mechanism of stereotype threat taps into women's game experience in terms of performance and affective responses. Herein attention is paid to how variables of interest such as gamer identity can serve as important moderators for female players' threat perception. In this vein, we inquire into the interrelatedness of stereotyping and labelling oneself as gamer. The title of study V runs as follow: *Can cardiac activity be modulated by threat effects of female players on performance and challenge perception?* It is clear that the study's interest mainly lies in the detection of psychophysiological responses on threat. Its purpose was to demonstrate that culturally determined stereotypical ideas and beliefs even act upon complex bodily processes.<sup>10</sup> We attributed the following section to the use of

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<sup>10</sup> This statement requires some additional explanation as one might question the causality. In fact, it typically refers to the chicken-and-the-egg problem: Which comes first, the thought, or the physiological response? Do bodily fluctuations lead to the thought, support the thought, or are caused by the thought? According to Lang, Potter, and Bolls (2009, p. 187), it is most

psychophysiological research tools as they are rather unexplored within communication and media studies. Eventually, we end the empirical chapters with study VI, which is entitled *Tracing Female Gamer Identity. An Empirical Study into Gender and Stereotype Threat Perceptions*. Herein we construct a structural equation model to detect to what extent variables such as previous threat experiences and female identity are of importance for women identifying as a gamer. This study helps answering our central question given that identifying as a gamer is entangled with dominant gender discourses (cf. supra). Study VI, in this vein, attempts to define relevant indicators of why women attribute the label of gamer to themselves (or not).

In summary, while study I contextualizes how gender is entrenched in contemporary game culture, study II aims to explore whether and how women (and men) translate “normalized” game practices in their play habits, attitudes, and motives. Whereas study II deploys a large-scale questionnaire in identifying general trends, studies III-V zoom in onto specific situations wherein women are confronted with negative stereotyping. It will be noticed that these experimental studies evolve from a basic experimental design on stereotype threat to a more nuanced account of how individual differences (such as the degree of gamer identification) contribute to a sense of threat. Study VI, finally, tries to construct a comprehensive model in which our concepts of interest, namely gamer identity and stereotyping, are being related to each other with respect to women’s gender identity. In the end, one should get a sense of how gender norms in digital gaming are entrenched in women’s minds, play habits, and even bodies (cf. Study V).

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accurate to conclude that both systems are interactive and have feedback and feed-forward mechanisms.

**Table 1**  
**Overview of the Empirical Studies**

Chapter	Empirical Study	Research Purpose	Methods
5	I. A Gendered Identity Debate in Digital Game Culture	To further understanding of backlash against women in digital game culture. Focus is specifically on the discussion of gamer identity and how this is articulated in power discourse	Conceptual research, case studies
6	II. "I Play So I Am?" A Gender Study into Stereotype Perception and Genre Choice of Digital Game Players	To gain insight into perceptions of game stereotypes. The interplay between these perceptions, play frequency, and gender is studied as well as between genre choice, play motivations, and gender	Survey study, exploratory focus groups
7	III. Challenging the Other. Exploring the Role of Opponent Gender in Digital Game Competition for Female Players	To examine the relative effect of opponent gender on the game experience of female players	Experimental study: self-reporting; logging
8	IV. Playing Under Threat. Examining Stereotype Threat in Female Game Players	To assess the impact of stereotype threat on affective and performance responses of female players	Experimental study: self-reporting; logging
	V. Can cardiac activity be modulated by threat effects of female players on performance and challenge perception?	Methodological extension of study IV; focus is on women's physiological responses while confronted with stereotype threat	Experimental study: heart rate variability; logging; self-reporting

Chapter	Empirical Study	Research Purpose	Methods
9	VI. Tracing Female Gamer Identity. An Empirical Study into Gender and Stereotype Threat Perceptions	To inquire into the relation between female identity and gamer identity, and how this is related to threat experiences	Survey study

## 4.2. Psychophysiological Assessment

As illustrated in Table 1, multi-methods are used ranging from traditional survey questionnaires to advanced psychophysiological measurement. The latter is a relatively novel method within the field of communication sciences and thus requires some additional elaboration.

Foremost, it should be clear that psychophysiology is dissimilar from physiology. The use of physiological measures in media studies already emerged in the 1960s and 1970s when mass communication scholars were looking for “effects” of the media. These effects were understood as bodily changes in response to media messages. However, findings of physiological effects seemed sparse, and, when found, were rather weak or small, leading to the disappearance of physiological measures from the communication discipline (Lang et al., 2009). It was not until the mid-1980s that physiological measures again seeped in because of an increasing interest in studying emotions, avowed as the “affective turn” of social sciences (Laaksonen, Salminen, Falco, Aula, & Ravaja, 2013). This turn was marked by a shift away from media “effect” research towards the study of media processing. Some researchers involved in media message processing returned to the use of physiological measures; however, they considered these measures not as “indicators of change in physiological states caused by the media” (Lang et al., p. 186), but rather defined them as “indicators of cognitive and emotional events” (p. 186). Hence, this paradigm shift heralded a turn of interest from physiology to psychophysiology in the communication discipline. Media researchers started looking at the psychological correlates of physiological measures and focused upon several variables of interest such as attention (e.g., Reeves et al., 1985), cognitive effort (e.g., Masters, 1985), arousal (e.g., Sundar &

Wagner, 2002), and emotions (e.g., Ravaja, Saari, Kallinen, & Laarni, 2006).

The use of psychophysiology has several advantages compared to more traditional research methods. Firstly, psychophysiological assessment is not constrained to limitations inherent to self-report questionnaires. Specifically, physiological assessment is not susceptible to social desirable answers, political correctness, or other biases originating from subjective data (Tran et al., 2007). It could be, for example, that participants have an idea of what the researchers are interested in and thus may be likely to anticipate on these suspicions. Measuring psychophysiological responses takes away this risk because of its objective and accurate nature (Ciuk, Troy, & Jones, 2015). Secondly, psychophysiological measures can be performed continuously throughout task performance without interference. Self-report, for example, is usually performed after a message is processed and thus is unable to capture participants' whole experience of media messages. Psychophysiological assessment, on the other hand, enables the investigation of phasic shifts in responses such as emotions or cognitive effort and its precision allows researchers to exactly pinpoint where in time participants responded remarkably on particular messages (Croizet et al., 2004; Ravaja, 2004).

Evidently, psychophysiological methods also have some important limitations. One limitation is reduced ecological validity referring to the extent to which the findings of the study reflect real-life occurrences. To ensure right conclusions, simplistic and univocal stimuli are required during an experimental study (Laaksonen et al., 2013). Another important limitation is that psychophysiological methods can be relatively intrusive (e.g., EMG electrodes on people's face muscles), making participants feel tense or nervous (Potter & Bolls, 2012). Notwithstanding, we explore the use of psychophysiology and, in particular, cardiovascular measurement for investigating stereotype threat in gaming. This allows us to zoom in on the interrelatedness of emotions, performance, and physiological responses when women are dealing with stereotypical information in digital gaming. Moreover, by using psychophysiological measurement, this dissertation contributes

to the sparse amount of studies on communication and media that have taken advantage of this approach.



LEVEL 02

Empirical Quests





# CHAPTER FIVE

## A GENDERED IDENTITY DEBATE IN DIGITAL GAME CULTURE

### **Contextualization Study I**

**T**he present chapter lays out the foundation on which the previous studies are built by defining our conceptual framework and furthering our understanding of gendered practices in digital game culture. Based on a social identity perspective and social constructionism, emphasis is on power discourses and on explaining how these could lead to vile behavior towards women who are playing games. Not only do we specify how women are explicitly and implicitly precluded in an androcentric game culture, it is also stressed why harassment is now more toxic and organized than ever. The chapter elucidates that this violent behavior cannot be dissociated from the current progressiveness in gaming as it is considered a response to a threatened male gamer identity. Additionally, this chapter demonstrates by means of three case studies representing identity management strategies that traditional male dominance is preserved and reproduced in digital gaming. Overall, the current study investigates the social and cultural environments of game players with a focus on gendered practices and indicates how their play is integrated into these contexts.

**Abstract Study I**

Although women make up half of the gamer population, only a small portion of them considers themselves as a gamer. This is seen as a logical consequence of a culture and industry that fiercely concentrate on legitimizing a masculine gamer identity. The upcoming presence of women in the digital game landscape, however, is threatening the notion of the masculine gamer. The aim of the current article is to analyze this threat, and how new forms of backlash emerge in response to it. Drawing from social identity and feminist theory, we argue that these new forms of backlash can be understood as “identity management strategies”, aimed at protecting masculine gamer identity. We analyze three such strategies: (1) the use of novel gendered binaries to frame the masculine against a feminine gamer identity, (2) the use of hostile sexist assaults to silence feminist gamers and advocates, and (3) the use of dualistic postfeminist discourses to mitigate and undermine criticisms.

**Keywords Study I**

Digital games; Female players; Gamergate; Gamer identity; Social Identity Theory

**Reference Study I**

Vermeulen, L., Vanden Abeele, M., & Van Bauwel, S. (n.d.). A Gendered Identity Debate in Digital Game Culture. Accepted for publication in *Press Start*.

## 5.1. Introduction

“Playing games does not equal being a gamer” (De Grove et al., 2015, p. 3).

Contemporary game culture is permeated with gender issues. Concerns have been voiced, for example, with respect to the stereotypical representation of women in games (Downs & Smith, 2010) and the disproportionate number of men employed in the game industry (Prescott & Bogg, 2014). An explanatory factor for these and other gender issues in game culture is the strong entanglement between gamer identity and masculinity (Dovey & Kennedy, 2006; Fox & Tang, 2014). Many consider video game playing as a typically male activity – an activity wherein men are both more interested and successful than women (Consalvo, 2012). Research shows that, as a consequence of this entanglement, women valuing digital games are found to conceal their identity as a gamer (Taylor, 2008), restrain their identification (De Grove et al., 2015), or reject this label altogether (Shaw, 2012a).

However, there is evidence that the traditional understanding of gamer identity as a masculine one is becoming more difficult to sustain in today’s media environment. As digital games are increasingly expanding, with divergent genres attracting a whole range of non-traditional players such as women and people of all ages (Scharkow et al., 2015), the gaming community is progressively becoming more diverse. A US industry report, for example, indicated that the traditional gap between the sexes has largely closed with 56% male and 44% female players (ESA, 2015). As a result, traditional conceptions of gamer identity are being challenged. Although this shift toward greater diversity could be considered positive, the backside appears to be that misogyny has never been so present and organized in game culture as it is today (Consalvo, 2012). The recent *gamergate* controversy, for example, in which a group of male gamers started an online harassment campaign to silence (mostly female) opinion leaders critical of gender issues, illustrates how misogyny has become a key weapon in the “war over gamer identity”. Although adherents initially framed the movement as a reaction against alleged unethical practices in games journalism, it quickly became clear that its main goal was to

install “a false binary” of gamer identity; that is, true gamers (male and heterosexual) versus feminists trying to be a gamer (Evans & Janish, 2015, p. 126-127).

The aim of the current manuscript is to further understanding of *gamergate* and other kinds of toxic behaviors. To that end, we will first explore the epistemological foundations of gamer identity and its alignment with gender identity from a social constructionist perspective (West & Zimmerman, 1987). Next, we will analyze how underlying group processes of category membership explain toxic behavior online by drawing from social identity theory (Tajfel & Turner, 1986). Focusing on three main social identity strategies, current cases of backlash are discussed, including their postfeminist features in a digital game culture. This analysis allows us to draw bridges between theoretical notions about and contemporary experiences of a female player group whose gamer identity has been systematically denied through history.

## 5.2. Gendered Gamer Identities

Identities are “multiple rather than single, [...] dynamic rather than static [...] and volatile rather than consistent” (van Zoonen, 2013, p. 44). This implies that each of us holds multiple identities that are defined and articulated within interpersonal relations and cultural contexts (Moghaddas, Persson, Hvidt, Christensen, & Hansen, 2012).

All identities, and therefore also gamer identity, are social constructions that are actively performed with and for others (Shaw, 2013). This definition implies that, similar to how a person’s gender identity results from a sociocultural process in which gender differences are perceived as objective facts that justify prevailing gender norms (West & Fenstermaker, 1995), gamer identity can be regarded as the result of a process in which people perceive “gamers” and “non-gamers” as different. These perceived differences lie at the heart of normative conceptions of appropriate activities for both “gamers” and “non-gamers.” To act appropriately as a gamer then, means that one’s actions are characterized and evaluated in accordance with these normative conceptions. Therefore, being a gamer is not something we *are* but something we *do* (West & Zimmerman, 1987).

Interestingly, one of the perceived “objective” facts that demarcate gamer identity is its focus on masculinity. When looking at the history of digital gaming, it becomes clear that games have inherited their association with masculinity from the very beginning (Dovey & Kennedy, 2006). The gaming industry played a crucial role in this process by creating, marketing, and thus reproducing its products in light of a predominantly male audience (Shaw, 2013). To this day, games remain fertile symbolic resources for men to construct and negotiate gendered identities such as multiple masculine ideals of respectable, rough, and playful manliness (Schut, 2006). Games are places wherein men can perform masculinity. This is not to say that women do not play games, but it does indicate that the dominant discourse surrounding digital game culture is stereotypically masculine. Fron, Fullerton, Morie, and Pearce (2007) refer to the “Hegemony of Play” as the dominant discourse behind the construction of digital game culture, denoting a power elite that “works in concert with game developers and self-selected hardcore ‘gamers’, who have systematically developed a rhetoric of play that is exclusionary [ ... ] to ‘minority’ players” (p. 1). This hegemony eventually creates a schism between those considered “legitimate” of claiming gamer identity (i.e., men) and those denied of doing so (i.e., women) (van Zoonen, 2000).

A consequence of the schism is that, although women are increasingly playing games, male players are much more likely to identify themselves as gamers than female players (Shaw, 2012a). This is problematic in that it denies women’s rightful access to gaming capital; that is, being knowledgeable about digital games and their para-textual system (Consalvo, 2007). Secondly, because of this lack of gaming capital, women tend to hide their game play leading to social isolation within the gamer community (Taylor, 2008). Having a network with many self-identified gamers, however, is an important prerequisite for assuming gamer membership and receiving the rewards associated with it (De Grove et al., 2015). On a broader level, women’s exclusion, both self and externally designated, promotes and recreates a stereotypical belief system that deploys a “strategy of splitting” between men as “typical” gamers and women as “deviants” (Hall, 2003).

This is not to say that disenfranchised players have no agentic power. As explained previously, gamer identity is a social construction and thus an unstable and contested ideological model of hegemony. Agency gives individuals the ability to define their own actions and resist the ideological ground of the hegemony of play (Hall, 1980). In this rationale, several authors (e.g., Fox & Tang, 2014) have recently drawn attention to a progressive shift in game culture that undermines the principles on which gamer identity is currently built. This shift is not only initiated by game industry's increasing interest to attract a broader audience (Vanderhoef, 2013), but also by social initiatives such the #INeedDiverseGames hashtag advocating inclusivity and diversity in gaming (Evans & Janish, 2015). We argue that this progress has led to a "gamer status threat", causing traditional players to defend old standards via relatively new types of backlash such as the use of ironic humor in which misogynic standards are reproduced (cf. *infra*).

### **5.3. Threatened Identity Boundaries**

To better understand the underlying process of gamer status threat, the social identity of being or, better: *doing* "gamer" is discussed from a social identity approach (Tajfel, 1978; Tajfel & Turner, 1979). This allows us to explain which mechanisms are accountable for the violent behaviors people experiencing status threats enact.

Gamer identity is a social identity because it denotes membership in a particular social category (Tajfel & Turner, 1986). People identify with that social category via cognitive processes of self-categorization: they describe themselves in terms of the category's defining characteristics. These characteristics comprise a group's prototypicality or normativity (Hogg et al., 1995). In case of digital games, we have argued that masculinity is strongly tied to gaming technology (Carr, 2005), making the masculine gender a prototypical attribute for assuming gamer identity. Moreover, while prototypical attributes help people typically self-categorize as gamer, value connotations are formed by comparing the in-group with out-groups (Tajfel & Turner, 1986). The distancing of out-groups (i.e., non-prototypical individuals) will yield feelings of attachment and positive affect within a group of gamers. This positive group distinctiveness will in turn motivate individuals' adherence to in-



group norms, assuring that one will be recognized as a legitimate and “prototypical” in-group member (Brewer, 1999). Given the focus on masculinity as a prototypical attribute, comparison with and distancing from femininity is central to a traditional gamer community.

Group membership can be relatively stable based on the extent to which one includes the in-group into the self. Social categories such as gamer identity are thus depended both on immediate social situations for the activation of prototypical behavior and on the availability of predefined culturally available categorizations (De Grove et al., 2015). The latter is similar with the idea that gamer identity is a social construction based on historical practices and economic decisions leading to an anchoring of gaming technology with masculinity (Carr, 2005). However, as explained before, social constructions are fluid and consequently subject to change and reformation. The growing numbers of female players together with non-traditional genres are challenging culturally embedded constructions of gamer identity. As a consequence, the status of “prototypical” male players becomes unsure through this progressive movement leading to an insecure social identity of the dominant or high-status group (Tajfel & Turner, 1986). We refer to this mechanism as gamer status threat, indicating the threat of status loss that male players perceive resulting from an intergroup conflict in game culture.

According to the social identity approach, dominant groups try to maintain status quo and protect identity boundaries in preventing lower status groups (e.g., female players) from challenging their favorable position (Scheepers & Ellemers, 2005). However, in-group favoritism does not necessarily lead to out-group negativity as there should be a motivational basis for discrimination against out-groups (Brewer, 1999). In case of digital games, women are not only perceived as threatening to in-group prototypicality (e.g., maleness), but their presence may also affect positive in-group comparisons on dimensions that are typically valued by traditional gamers. For example, it is argued that hardcore gamers feel reluctance towards games’ increasing popularity and diversity, contributing to fears that the quality of their favorite games could be compromised or negated entirely. These threats to the in-group and more specifically their valued principles will

make gamers who are highly committed to their identity respond to the gamer status threat. Specifically, the influx of female players is met with hostility from those invested in a hypermasculine gamer identity (Salter & Blodgett, 2012).

What we see now in game culture is an attempt to maintain (or restore) identity boundaries in terms of out-group derogation. Several strategies can be deployed for dealing with threatened social identities. In the case of gamer status threat, the combination of a strong gamer identification with group-level threat typically leads to, but is not limited to, conflict and antagonism (Ellemers et al., 2002; Tajfel & Turner, 1986). Accordingly, the threat against gamer identity has led to new, more collectively organized, forms of backlash against female players in today's gaming environment. This backlash manifests itself in different identity management strategies that reassert a dominant masculine gamer identity. In what follows, three identity strategies are discussed: redefining a gender binary in terms of a perceived core-casual genre dichotomy, increased hostile sexism in- and outside game culture, and the use of postfeminist features in discourses on the role of gender in game culture.

### *5.3.1. A Redefined Gender Binary*

With the emergence of mobile and social games, which are particularly popular among a female audience (Sung, Bjornrud, Lee, & Wohn, 2010)<sup>11</sup>, today's mainstream game culture is more diverse than ever. The influx of these casual genres, and their predominantly female player base, represents a threat to the social construction of gamer identity as hitherto owned by young, Caucasian, and heterosexual men. From a social identity perspective, this threat undermines their positive

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<sup>11</sup> In this article, casual, mobile, and social games are considered to be different kind of games, however, they do represent a single underlying genre. Here we refer to "casual genres" as a denominator for games that are polar opposites of core genres, characterized by their ease of play, positive fiction, and short play time (De Schutter, 2011).

group distinctiveness (cf. Tajfel & Turner, 1986), as almost anyone can now be considered a gamer.

The “othering” of casual genres vis-à-vis (real) core genres<sup>12</sup> provides a strategy to redefine the elements of the comparative situation. This is also referred to as a *social creativity strategy* (Tajfel & Turner, 1986). Social creativity aims at retaining status quo by comparing the in-group to the out-group on a newly formulated dimension. By redefining the gender binary in gaming as one between casual (i.e., feminine) and hardcore (i.e., masculine) players, “gamers” attempt to strategically reassert a dominant masculine gamer identity.

According to Vanderhoef (2013), this “cultural feminization of casual video games” (p. 2) is accomplished in a rather subtle fashion. Initially, especially the game industry played a crucial role in the process of feminizing casual gaming by disseminating the terms “casual” and “core” genres for marketing and targeting purposes. This division, however, persuades a form of indirect devaluation in which casual genres are seen as games lacking the “qualities of core gaming titles” and thus aimed at people outside gaming capital (Shaw, 2013; Vanderhoef, 2013, p. 4). Not surprisingly, women are the most avid players of non-traditional casual and social games (Sung et al., 2010), affirming an association between femininity and a denigrated gamer label. Similar divisions between casual/devalued/feminine gamers and core/valued/masculine gamers are further invigorated in reviews and online forums on numerous gaming websites (Fisher, 2015). This is not only carried out by formal parties such as game journalists but also by core players from the game community itself, who express their dissatisfaction with the changing nature of the game market and its demographics. Ranging from subtle sarcasm to rigorous aversion, these individual voices give rise to a collective sentiment of casual gamers invading a male-privileged core gaming space (Fisher, 2014; 2015).

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<sup>12</sup> Core genres are here considered as games that contain stereotypical masculine themes, have high complexity and require much effort, and time (Juil, 2012).

In digital game culture, genre preferences thus shape a new dimension of comparison to maintain the evaluative structure of distinctiveness between masculine and feminine players. In doing so, the merging of femininity and casual genre preferences becomes eventually “naturalized” and “normalized”, hereby (re)producing a presumptively biological disinterest of women in “real” digital gaming. The core-casual distinction, then, serves as a way to deal with the expansion in diversity (and rising womanhood) in gamers, reinstalling a symbolic boundary between those legitimate of claiming “real” gamer identity and those who lack this legitimacy. Neys, Jansz, and Tan’s (2014) study provides empirical evidence for this assumption, showing that core players are much more likely to identify themselves as gamers than casual players. This is rather remarkable as Juul (2012) indicated that casual players do not necessarily play “casual”, but can spend more time on gaming than core players do.

### 5.3.2. *Hostile Sexism*

A second identity management strategy for defending in-group positive distinctiveness is *social competition*. This strategy is typically applied when high-status groups perceive their status as unstable and fear position loss (Niens & Cairns, 2003). Especially high in-group identifiers are likely to deploy social competition. For these individuals, group distinctiveness threats combined with strong in-group identification often evoke overt displays of hostility and discrimination towards the out-group. This in turn serves purposes of collective self-esteem restoration (Branscombe, Ellemers, Spears, & Doosje, 1999; Ellemers et al., 2002).

In today’s digital gaming culture, male gamers who are strongly self-identified appear to systematically employ out-group derogation in terms of female marginalization and misogyny (Jenson & de Castell, 2013). While sexism and harassment of female players is nothing new in the game community, it is clear that this has become more concentrated and toxic in the past couple of years (Consalvo, 2012). For instance, in studying game magazines, Summers and Millers (2014) revealed a growing trend in the portrayal of female game characters toward an increase of hostile sexism and a decrease of benevolent

sexism. Whereas digital game magazines used to portray women as “damsels in distress” (i.e., benevolent sexism), the focus is now much more on female game characters as sexual objects (i.e., hostile sexism). While both constructs are built on the concept of male power (Glick & Fiske, 1996; Summers & Miller, 2014), the latter is considered to be a less positive form of sexism.

Furthermore, sexism is highly prevalent in the game community itself. Although this has been the case for several decades, in recent years, it has escalated, particularly due to upcoming possibilities to remain anonymous during game play. As the social identity model of deindividuation effects (SIDE) posits, the increased anonymity of online environments makes people’s social identities more salient and active while making their personal identities less salient (Postmes, Spears, & Lea, 1998). This process of depersonalization stimulates greater conformity to norms of the in-group of which the social identity has been activated (cf. self-categorization theory [Turner, 1985]). For online players, this implies that their gamer identity is activated more strongly during anonymous online game play, leading them to feel less inhibited to act in accordance with the masculine “gamer prototype”. Anonymity can thus facilitate harassment and other forms of hostilities towards outsiders such as women (Fox & Tang, 2014).

The use of negative language, including flaming, in particular operates as a tactic of terrorization to silence female voices (Ross, 2010). Women using real-time voice chat, for example, are likely to receive three times as many negative comments compared to male voices or no voice at all (Kuznekoff & Rose, 2013). It is barely a surprise then that women are concealing their gender identity online. If they do reveal their femaleness, it is likely that these women have to pay a “misogyny tax”; known as the price they pay for being a women in the public sphere (McEwan, 2014). It is the cost to one’s emotional resources in enduring the abuse and harassment for overtly practicing their hobby or profession (Ryan, 2014).

Online misogyny does not limit itself to harassment and flaming during game play. Also in the broader digital sphere, women directly and indirectly experience hostility. The recent *gamergate* controversy is an

example of how deeply the misogyny tax (cf. supra) is anchored in digital game culture. This harassment campaign was set up by a movement of players with conservative ideas about gamer identity (Fisher, 2015). The increasing presence of feminist critics, woman players, and female developers was in particular met with resistance, pushing femininity outside game culture in order to reestablish the role of masculinity with gamer identity. Anita Sarkeesian, Brianna Wu, and Zoë Quinn are just a few exemplars of female critics who dealt with online abuse, bomb, rape, and murder threats initiated and/or intensified by the *gamergate* movement. This vile behavior even forced these women to leave their private homes and seek protection after being doxxed (i.e. the act of making personal information public online; Golding, 2014; O'Rourke, 2014). Also academia became a target itself as *gamergaters* accused feminist game scholars to be involved in a feminist gaming conspiracy. Professor of Media Studies and Production Adrienne Shaw, for example, was personally attacked for her work, further claiming that she was a former tutor of Sarkeesian and Quinn (Chess & Shaw, 2015). Hence, the abuse that these victims have been receiving, in- and outside academia, is not limited to online spheres but taps into every aspect of their lives both online and offline.

### 5.3.3. *Postfeminist Discourse in Gaming*

A third strategy to protect the masculine gamer identity is the use of a postfeminist discourse in communication about that identity. Postfeminism is used to refer to current-day feminism, which is a "double movement" in which feminist ideas are simultaneously accepted and disavowed, leading to the subtle renewal of gender inequalities (McRobbie, 2007). Simply put, postfeminism argues that because feminism is considered an accomplished fact, feminist critique is paradoxically no longer needed. In postfeminism, contradictions between feminist and anti-feminist themes are oftentimes articulated through humor, irony, and exaggerating (Gill, 2007b, 2008).

Although postfeminism is no identity management strategy, it is a communication strategy that provides tools to obtain and maintain the gendered binary in game genres and hostile sexism. Making sexist statements in the form of jokes is one example of how postfeminism

may support misogyny in game culture. Game texts and websites are littered with postfeminist irony and humor wherein sexist jokes are not supposed to be taken seriously or considered offensive (Vanderhoef, 2013). Nostalgia is often used as a justification for reproducing traditional sexism, translated into humor which is the case in typical retro-inspired gaming scenes. As such, *Fat Princess* (2009) is a typical example of a game in which a princess should be rescued with a humorous wink to the old-school “damsel in distress stereotype” (Sarkeesian, 2013). The use of a specific historic period in postfeminist discourse allows the hegemony of play to subsist “under the cover of a nostalgic preoccupation with the past” (Gill, 2007a, p. 110). Hence, while overt sexism may give cause for resistance, the use of subtle sexist humor is a powerful way for silencing voices that disapprove with a patriarchal game culture.

Besides humor, the ambivalence of postfeminism is also notable in discourses emphasizing female choice in the game industry. Prominent women in this industry are seemingly free to construct and control their own career paths, without having to suffer from imposed power structures (Harvey & Fisher, 2015). The reason why few women work in the gaming industry, then, is considered their own individual decision rather than the result of structural constraints. A recent study, however, showed that women in the game industry face several challenges that limit their participation, such as a persistent gender pay gap and thresholds to work in executive or managing positions (Ganguin & Hoblitz, 2014).

Even overt feminist actions in gaming can be read as a postfeminist rhetoric. For example, as a reaction against the range of threats coming from the *gamergate* community, game developer Zoë Quinn co-founded the website Crash Override to help other victims of online hate speech<sup>13</sup>. The website offers a valuable support network and concentrates on preventative tactics (female) victims can enact through outlining privacy protection recommendations to eliminate personal information online. Although these guidelines provide useful information, the organization risks victim blaming (i.e., when victims

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<sup>13</sup> <http://www.crashoverridenetwork.com>

are held responsible for the harm committed against them [Ryan, 1971]) as they do not only advise minority players to remain anonymous, but also emphasize female players' responsibility for self-monitoring their online behavior. This focus on self-surveillance, however, comes at the expense of organized feminist politics. The latter is crucial for addressing global sexist practices because they can provide legal ground in counteracting online harassment. This policymaking is nowadays absent, forcing female players to be silent in favor of self-empowerment pursuing the underlying power hierarchy in game culture (Gill, 2007b; McRobbie, 2009).

#### **5.4. Conclusion**

Although game culture suffers from hegemonic players' (re)enactment of unequal gender standards, playing games is not fundamentally masculine. While many women have refused the adoption of gamer identity throughout gaming history, they have always been playing and creating digital games and will continue to do so (Golding, 2014). Games themselves are not inherently considered problematic, but the social structure on which these games are built deserves critical attention. Hence, it is only through questioning and preempting the ground of gamer identity that social change will and can be accomplished.

To that end, the current article has outlined how the social construction of gamer identity as a gendered identity defines in-group/out-group categorization processes in a changing digital gaming environment. Our main assertion was that the ongoing feminization of players and products has led to a perceived gamer status threat among traditional male players, which is counteracted by means of novel forms of backlash or identity management strategies.

This article not only aimed to give insight into current evolutions in digital gaming. It also tried to raise understanding of where these evolutions originate from, by theoretically grounding them in social identity and feminist theory. We believe that being aware of theoretical foundations of backlash against women is crucial for achieving informed decision-making processes of game designers, game journalists, and



policymakers. For example, during the writing of this article, the *United Nations Broadband Commission* released a report on cyberviolence against women and girls, stating the need for a “world-wide wake-up call”.<sup>14</sup> Soon after, however, the report was formally retracted due to criticism on the U.N.’s deterministic vision of the relation between games and violence, the sloppy writing style, bad referencing, and failure to consult people from tech (Jeong, 2015). Whereas such initiatives are crucial for building a successful policy against harassment of female players, this attempt clearly lacked credibility, in part because of the missed opportunity to provide a nuanced understanding of the complicated problems that women are facing online, as well as how to address them.

The present article could, in this vein, serve as a starting point in formulating how backlash against female players manifests itself today: not (only) as simple and outright harassment, but often in subtle and ambiguous ways. The latter makes it difficult to recognize backlash and therefore challenges the design of concrete action plans against backlash in gaming. There is a need for sophisticated and well-considered policy programs with an eye for different forms of online sexism. These forms go beyond the harassment of female players, but apply to everyone who is negatively “classed”, “raced”, and/or “gendered” in digital game culture. Future research could focus, for example, on how subordinated forms of masculinity such as homosexual men or avid male casual genre players are negotiated in a hegemonic game culture. It would be interesting to see how backlash against these alternative identities manifests itself (or not) and how they interact with femininity in gaming. Additionally, further research may adopt a longitudinal lens following how game culture progresses towards inclusivity and how counteractions respond to these evolutions.

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[http://www.unwomen.org/~media/headquarters/attachments/sections/library/publications/2015/cyber\\_violence\\_gender%20report.pdf?v=1&d=20150924T154259](http://www.unwomen.org/~media/headquarters/attachments/sections/library/publications/2015/cyber_violence_gender%20report.pdf?v=1&d=20150924T154259)



# CHAPTER SIX

## “I PLAY SO I AM?” A GENDER STUDY INTO STEREOTYPE PERCEPTION AND GENRE CHOICE OF DIGITAL GAME PLAYERS

### **Contextualization Study II**

**T**his chapter is the result of a large-scale quantitative audience inquiry into the game habits of both male and female game players. Game habits herein refer to general play frequencies, genre preferences, and play motivations. Moreover, it is investigated how game habits are related to players’ (gendered) beliefs of stereotypes about playing games. This work is the only study within this dissertation that delves into the game play of both women and men. The rationale for this decision is not so much based on reconfirming traditional “gender differences”, but our purpose is to demonstrate how gender attitudes and genre preferences can be nuanced once taking into account other pivotal characteristics such as previous game experience and unique player motivations. It is our aim to discard players, and particularly female players, as passive audiences and stress the importance of the interplay between agency and structure. Specifically, the chapter shows that many shared ideas about what women and men like in gaming are actually based on social constructions and thus are always negotiable and susceptible to alterations.

**Abstract Study II**

Stereotypes in game culture are still inhibiting the freedom of female players. This survey study aims to gain insight into these practices by looking at gaming stereotypes on two different, yet interrelated, levels. First, we inquire into perceptions of gamers regarding gender-related and general gamer stereotypes and how these relate to playing frequency. Second, genre choice is investigated in light of player's gender and how this is associated with play motivations. Results suggest that high frequency female players disagree the most with gender-related stereotypical beliefs and that these women are more strongly drawn towards specific gaming genres than men.

**Keywords Study II**

Digital games; Game genres; Game motivations; Gender; Stereotyping

**Reference Study II**

Vermeulen, L., & Van Looy, J. (n.d.). "I Play So I Am?" A Gender Study into Stereotype Perception and Genre Choice of Digital Game Players. Accepted for publication in the *Journal of Broadcasting & Electronic Media*.

## 6.1. Introduction

As digital games become more widespread in the lives of many people, game culture persists to hold and distribute several stereotypical beliefs about who counts as a gamer and who does not (Shaw, 2012a). Many of these stereotypical practices, in which differences are articulated and thus re-produced, are based on the player's gender (Hayes, 2005). This is rather odd given that gaming as a pastime is now more or less equally distributed across gender. The annual report of the Entertainment Software Association (ESA, 2013), for example, demonstrates that the American gamer population consists of 47% female and 53% male players. The Interactive Software Federation Europe (2012) further notes that 43% of all women aged 16 to 64 are playing digital games. What these growing numbers do not explicate, however, is how cultural and social contours of game culture are defining the game experience of female players. Throughout this paper, we discuss how stereotypes limit women in playing digital games, and look at so-called gender differences in playing styles and preferences from a social constructionist stance. Moreover, we look at the interplay between gender and motivations for playing games. The aim of this study is thus twofold: first, we explore player's gender and playing frequency in relation to perception of gender stereotypes in game culture. Concretely, we argue that stereotypical beliefs about gaming not only depend on player's gender but interact with playing frequency. Second, stereotypical gender preferences are investigated in light of playing motivations and game genre frequencies. We specifically aim to grasp how men and women's playing motivations are related to genre frequencies. This further allows us to investigate whether women who often play "masculine" game genres have higher motivational scores because of their atypical gender play. Studying stereotypical gender beliefs based on investment and motivation is interesting from an academic point of view for at least four reasons. First, it adds to insights regarding gender and game research by means of an exclusive focus on gender effects for studying stereotypical beliefs and genre play. Second, it contributes to the body of research on gamer stereotypes through focusing on the gaming community in general instead of limiting ourselves to a particular player group such as MMO-

players (e.g., Griffiths, Davies, & Chappell, 2003). Third, the present study includes the endorsement of gamer stereotypes instead of just evaluating the accuracy of these stereotypes as is often based on demographic inquiries (e.g., Williams, Yee, & Caplan, 2008). And fourth, it contributes to our understanding of the intersection between stereotypical gamer beliefs, playing frequency, and playing motivations with a clear focus on players' gender.

### 6.1.1. *Gender Stereotyping in Digital Games*

Stereotyping is a signifying practice that reduces people to some essential characteristics and abilities (Hall, 2003). Although stereotypes commonly generate negative connotations, it is also an ordering process in which people make sense of the world (Dyer, 1977; Jacobson, 2005). This process of meaning making is better understood in terms of *typing*, which is necessary in order to assign people to wider categories such as group membership based on gender or class (Dyer, 1977; Van Damme, 2013). According to Hall (2003), stereotyping is different from typing in that it naturalizes differences and deploys a strategy of "splitting". Put differently, it serves the maintenance of symbolic boundaries between those who belong and those who are excluded. This point makes clear that stereotyping is related to symbolic power "since only those with such power can exercise and enforce the practice of stereotyping" (Van Damme, 2013, p. 12). When looking at gender, most societies generate inequality whereby men exert power over women (Siann, 2013). Gender stereotyping, then, functions as a mechanism to exercise symbolic power by making assumptions based on someone's gender (Jacobson, 2005). These assumptions, albeit socially constructed, can have detrimental consequences for women being "threatened" by negative stereotypical beliefs. Literature on stereotype threat, for example, showed that the risk of confirming a negative stereotype about one's group is enough to impair task performance (Inzlicht & Kang, 2010), lower performance expectations (Cadinu, Maass, Frigerio, Impagliazzo, & Latinotti, 2003), and entail negative emotional responses (Shapiro & Williams, 2012). It is argued that such practices could eventually lead to disidentification with a particular domain or field (Inzlicht & Kang, 2010).

Gender stereotyping is a common practice in and around digital game culture. Carr (2005) talks about "the alignment of gaming technology with one gender" (p. 468) as a result of historical practices and economic decisions contributing to the association between masculinity and digital games. Although recent studies report higher numbers of female players (e.g., ESA, 2013), the discourse of game culture is still stereotypically male, young, heterosexual, and white (Nakamura, 2012; Schut, 2006). This creates a symbolic division between people who legitimately claim gamer identity and those who have no right to do so. This is not to say that the disciplinary power of discourse cannot be resisted or subverted however (van Zoonen, 2000). Countermoves such as Grrl Gamers, Riot Grrls, and Frag Dolls have proven successful all-female game communities, resisting a male hegemony of play (Jenson, de Castell, & Fisher, 2007). Nonetheless, woman gamers are frequently reminded of their unconventional position within a digital game culture. One argument is that much game content draws on masculine (heterosexual) fantasy by portraying stereotypical and sexualized images of women (Schut, 2006). In addition, the vast majority of female game characters are unplayable or supplemental, often depicted in helpless and innocent roles (Miller & Summers, 2007). Another argument is that women engaging in game play frequently suffer from comments on their identified presence; whether they are in a virtual environment, a domestic space, or a public setting (Bryce & Rutter, 2003). These issues give rise to the stereotypical belief by both men *and* women of digital gaming being a particularly masculine pastime (Selwyn, 2007). Related stereotypical gender ideas are concerned with perceptions of men being better at playing games and women having to spend their time on other, more productive activities such as household chores (Selwyn, 2007; Williams, Consalvo, Caplan, & Yee, 2009). Moreover, it is argued that women experience a "double stereotyping" while engaging in game culture. Not only do they encounter discrimination based on their gender, they also suffer from the low pop culture status of digital gaming (Gyongran, 2008). Being an active gamer is socially disvalued because there are a lot of negative connotations about gamers such as "geeky" or "socially inept" (Kowert, Festl, & Quandt, 2014; Shaw, 2013). These stereotypes position game culture as peripheral to mainstream media culture and frame it as a

relatively unimportant leisure activity (Kowert, Griffiths, & Oldmeadow, 2012; Shaw, 2012a). However, in the study of Royse, Lee, Undrahbuyan, Hopson, and Consalvo (2007), it was asserted that high frequency female players do not epitomize the stereotypical beliefs attributed to gamer identity. For these players, digital games were not a problematic technology as previously mentioned. On the other hand, the female non-gamers in Royse et al.'s study held the most critical and negative perceptions of gaming, giving priority to other, "real-world" activities. While the female players looked at game culture as fairly androgynous, the non-gamers refuted it as a completely masculine domain. These findings suggest that attitudes towards digital gaming are being negotiated among women with different playing experiences.

The first goal of our investigation is therefore to examine the role of playing frequency and player's gender in relation to reporting stereotypical perceptions of digital gaming. Although various studies have investigated game players' stereotypical attributes (e.g., Griffiths, Davies, & Chappell, 2003; Kowert et al., 2014), few studies have looked at the attitudes of players themselves towards gaming stereotypes. Moreover, given that these studies mostly deploy a qualitative approach (e.g., Hayes, 2005; Royse et al., 2007), we are interested to provide a quantitative empirical account of internalized general and gender-specific gaming stereotypes by players. Our first research question is:

*RQ1:* How do player's gender and playing frequency relate to perception of gamer stereotypes?

### *6.1.2. A Social Constructionist Perspective on Gaming and Gender*

To gain insight in gender differences and associated stereotypes, we need a solid understanding of what "gender" is. The pioneering work of social constructionists West and Zimmerman (1987) is particularly interesting in this respect. From their perspective, gender is "the activity of managing situated conduct in light of normative conceptions of attitudes and activities appropriate for one's sex category" (p. 127). In other words, they suggest that gender is rather something people



*do* than the property of individuals; we *are* not male or female, but we are doing maleness or femaleness. It is also a social doing; gender is recurrently performed in interactions and assessed by others based on normative conceptions of femininity or masculinity (West & Fenstermaker, 1995; West & Zimmerman, 1987). Accordingly, Butler (1990) talks about the concept of "gender performativity" stating that there is no natural substance to being a man or a woman. Gender only seems natural because of the "stylized repetition of acts through time" (p. 141), which "enables, produces, and regulates the discursive notion of woman" (Duits, 2008, p. 39). This constructs a compulsory binary gender system in which there are ostensibly essential differences between men and women. This binary then produces and sustains stereotypical opposites of what is perceived as typically feminine and masculine while doing gender (Brickell, 2006; Van Damme, 2013).

### 6.1.3. *Gendered Game Preferences*

In this socially constructed reality, there are several gender stereotypes with regard to playing styles of male and female gamers. Many studies indicate a pattern in which women are discouraged by violent and competitive gaming environments while men seem to embrace such game-play mechanics (e.g., Kafai, Heeter, Denner, & Sun, 2008). Attractive games for women seem to be focused on social interaction, non-purposeful exploration, and collaborative instead of competitive gaming elements (Hartmann & Klimmt, 2006). These stereotypical ideas about female game preferences have led to the development of typical "girl games", following female themes such as appearance, fashion, and relationships (Kafai et al., 2008). Although these games likely presented an introduction to the medium for many female players, some authors have criticized them for creating a disparity between games for girls and games for "real", male players (De Castell & Jenson, 2003). According to Shaw (2012), targeted marketing of groups based on stereotypical notions of gender further promotes the marginalization of women as gamers. She argues that "marking 'girl gamers' as a market, whether women feel adequately appealed to by those attempts or not (often not), makes gender a salient category when talking about games" (Shaw, 2012, p. 39). In other words, although the game industry aims to be more inclusive, its efforts seem

to reproduce stereotypical ideas about womanhood enhancing boundaries between those who have the right to claim gamer identity and those who do not.

Several authors have argued that the constructed gender binary in game culture has taken on a new form with the rise of the "casual game genre" (Vanderhoef, 2013). This genre, characterized by its positive fiction, short play time, and low complexity, seems to be especially popular with a non-traditional gamer audience such as female and older players (De Schutter, 2011). Casual game players have often been described against a group of "hardcore players", referring to players who prefer stereotypical masculine themes, enjoy difficult games, play large numbers of games, and invest much time and resources in their hobby (Juul, 2012). As this definition already shows, there is something distinct about membership of either groups. Whereas the discourse of casual play is mostly associated with femininity and trivial, easy-fun, hardcore play stands for masculinity and is "celebrated as the authentic and superior game design and experience" (Vanderhoef, 2013, para. 1). Consequently, a redefined binary in which one side is privileged (i.e., "masculine hardcore gamers") over the other (i.e., "feminine casual gamers") gets installed and reproduces seemingly obsolete gender inequalities in game culture (Vanderhoef, 2013). Casual games are then "deemed outside gamer subcultural capital", and its players, mainly women, are denied or even self-refusing gamer identity (Shaw, 2013, Performing subcultural capital, para. 6).

In other words, many shared ideas (i.e., stereotypes) about what women or men like in digital games are based on social constructions, situated in interaction with others and (re-)producing gendered differences in game genre preferences. Previous studies into these genre preferences have confirmed playing behavior conform with gender norms, showing that women prefer casual, "soft" game genres and men "core", action-based genres (e.g., Pew Internet & American Life Project, 2008). In line with these findings, we expect that gender will be an important predictor of genre preferences. In this study, however, we do not limit ourselves to single game genres. Instead, we look at genre choice conceptualized as genre components, accounting

for the variety of content that is played and the time spent with this content. Our first hypothesis is:

*H1: Player's gender will predict game genre playing frequencies of digital gamers*

#### *6.1.4. Motivations as Moderators for Gendered Preferences*

Simplistic and stereotypical ideas about gamers as addicts or aggressors ignores the fact that people play digital games for a wide range of reasons and motives (Yee, 2006). Game playing motivations have been proven to be important determinants for digital play (e.g., Olson, 2010; Ryan, Rigby, & Przybylski, 2006). Moreover, research has indicated that content is important when considering game playing motivations (Schneider, Lang, Shin, & Bradley, 2004). As people choose to play games with various types of content, gaming motives seem to differ depending on genre preferences (Scharkow, Festl, Vogelgesang, & Quandt, 2012). Tanis and Jansz (2008), for example, found that players of role-playing games (RPGs) and massively multiplayer online role-playing games (MMORPGs) scored lowest on the competition motive, but highest on the challenge motive, while the opposite applied to people playing first-person shooters. These findings show that, besides gender, people are likely to choose a variety of game genres based on their motivational layout. In line with this argument, we argue that play motives are crucial when considering game genre frequencies. Our second hypothesis is:

*H2: Game motivations will predict game genre playing frequencies of digital gamers*

Based on the literature, it can be argued that digital gaming as a technology is gendered and that its production is based on stereotypical beliefs about distinct male and female gaming preferences. We have also argued that game culture, consciously or not, keeps women out by constructing specific ("superior") game genres for men. And yet, women are playing digital games and continue to do so. Taylor (2008) even talks about "one of the most dedicated player demographics around" (p. 54), indirectly stating that women's motivations for playing

transcend the experienced cultural and social thresholds. But is this actually true? Some studies found, for example, that women are less motivated than men to play digital games (e.g., Hartmann & Klimmt, 2006). Lucas & Sherry (2004) showed that women scored lowest on all investigated gaming motivations, including challenge, arousal, diversion, fantasy, competition, and social interaction. However, although they controlled for amount of game play, little attention has been paid to look at how genre frequencies are determined by the interplay between playing motivations and player's gender. This study attempts to fill this gap and investigates how playing motivations of both men and women (differently) define the amount of genre play. It could be, for instance, that traditional differences between male and female preferences are modulated by motivations for playing. Moreover, given the gender bias in genre play, we are interested to know whether women who play more stereotypical "masculine" genres (e.g., action-based games) are more motivated to do so than their male peers. Concretely, the second research question is:

*RQ2: What is the relationship between player's gender and playing motivations in predicting game genre frequency?*

## **6.2. Method**

### *6.2.1 Sampling and Procedure*

We drew upon a sample of 962 Flemish game players, recruited on a broad range of online game forums/websites and through our department's gamer panel. Moreover, the survey link was placed on forums of women's websites (e.g., fashion websites) to address enough females. Flyers with the questionnaire URL were also distributed on University Campus. Given that this study focused on people who have some experience with digital games, we had to omit those respondents who indicated they never played games (2%). Nine percent of the subjects indicated that they rarely played games, 12% played regularly, 31% played often, and 46% played games on a daily basis. Overall, the sample comprised more male (64.20%) than female respondents (35.80%). The mean age of our respondents was 24 years ( $SD = 6.49$ ), ranging from 11 to 65.

### 6.2.2. Measures

Stereotypical beliefs about gamers and attitudes towards gaming were measured by five Likert-scale items ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items were "All gamers are nerds" or "Boys are better at gaming than girls" (for a full overview see Table 1). As there are no validated scales for measuring gamer stereotypes, the content of the items was based on the literature review and input from two explorative focus groups. The survey questionnaire was pretested by laymen and gaming experts.

Gaming frequencies of 16 different kinds of game genres were measured using a five-point ordinal scale ranging from 1 (*never*) to 5 (*every day*). This list of game genres was adapted from a classification as formulated by a Flemish government website (Van Looy & De Vocht, 2009). In order to reduce these game genres to a more reasonable number of categories, we made use of principal component analysis (PCA, varimax rotation), using the raw-data matrix of polychoric correlations for categorical variables as input (Kolenikov & Angeles, 2009). Five components were found for 14 game genres: (1) casual genres (e.g., puzzle games, card games); (2) heavy action genres (e.g., survival horror games, shooting games); (3) growth genres (e.g., MMORPGs, strategy games); (4) linear progression genres (e.g., adventure games, platform games); and (5) sports genres (e.g., sports games, racing games). The total variance explained was 61.26% and all factor loadings were greater than 0.6. Statistical differences in playing frequencies were found between men and women concerning these genres. Concretely, men played more heavy action genres ( $U = 60193, p < .001$ ), growth genres ( $U = 75684, p < .001$ ), and sports genres ( $U = 85421, p < .001$ ). Women, on the other hand, played more casual game genres ( $U = 80479, p < .001$ ). No significant differences were found for playing linear progression genres ( $U = 104521, p = .618$ ).

We also looked into motivations for playing games by using the *Video Game Intrinsic Motivation Questionnaire* (Van Looy, 2010). This 5-point Likert motivation scale is based on the previous work of Van Looy, Schuurman, De Moor, De Marez, and Courtois (2010), who in turn

revised the original gameflow heuristics of Sweetser and Wyeth (2005). By means of PCA (varimax rotation) on 31 items, we distinguished between five intrinsic game motivation components: (1) Immersion ( $\alpha = .86$ ); (2) Challenge ( $\alpha = .78$ ); (3) Competition ( $\alpha = .73$ ); (4) Social contact ( $\alpha = .84$ ); and (5) Freedom/Control ( $\alpha = .71$ ). All components had eigenvalues greater than 1.0 and the total variance explained was 57.74%. Three items were removed because of factor loadings smaller than 0.5, whereas the remaining 28 items had factor loadings greater than 0.5. Two items constituted an unexpected factor with regard to playing games against the computer, but this factor was not taken up due to low internal consistency ( $\alpha = .51$ ).

### 6.2.3. Data Analysis

A 2 (gender: male versus female)  $\times$  2 (playing frequency: low versus high frequency players) factorial ANOVA was used to examine the effects of gender and playing frequency on stereotypical beliefs about digital gaming. For this analysis, low frequency gamers were considered as players who play less than once a week and high frequency gamers as players who play at least once a week. This was similar to the study by Durkin and Barber (2002) and Schmierbach, Boyle, Xu, and McLeod (2011). Adding the variable "age" as a covariate did not yield different effects of players' gender and playing frequency on the dependent variables; therefore we omitted this factor in subsequent analyses. Post-hoc tests were calculated using the Bonferonni correction, which guards against Type I error rate. Statistical significance for these tests was set at  $p < .05$ .

Additionally, binary logistic regression was conducted to predict genre frequency components (i.e., dependent variables) using gender, game motivations, and interactions between gender and game motivations as predictors. Dependent variables were recoded into dichotomous variables to facilitate interpretation as well as to better meet assumptions for subsequent analyses (e.g., to avoid too many empty cells when using ordinal regression). Concretely, based on a median split, cases were divided into low frequency players ( $=n_1$ ) versus high frequency players ( $=n_2$ ) of specific game genre components (e.g., a value of zero refers to a low frequency player of casual genres, while a

value of one points to a high frequency player of casual genres). The medians were 2 for casual genres ( $n_1 = 550$  vs.  $n_2 = 412$ ), 3 for heavy action genres ( $n_1 = 501$  vs.  $n_2 = 461$ ), 3 for growth genres ( $n_1 = 482$  vs.  $n_2 = 480$ ), 2 for linear progression genres ( $n_1 = 535$  vs.  $n_2 = 427$ ), and 2 for sports genres ( $n_1 = 547$  vs.  $n_2 = 415$ ). Statistical significance for these tests were also set at  $p < .05$ .

### **6.3. Results**

#### *6.3.1. Stereotypical Beliefs*

Factorial ANOVA was deployed for measuring players' attitudes towards general gamer stereotypes and gender-related gaming stereotypes. As shown in Table 1, there were only two significant main effects of gender for the items "Gaming is equal to any other form of pastime" ( $M_{\text{men}} = 4.11$  vs.  $M_{\text{women}} = 3.61$ ) and "Games cause violent behavior" ( $M_{\text{men}} = 1.83$  vs.  $M_{\text{women}} = 2.45$ ). Both items also displayed main effects of playing frequency, showing that high frequency players agree more ( $M = 4.17$ ) with gaming being equal to other hobbies than low frequency players ( $M = 3.55$ ), but less ( $M = 1.82$ ) with gaming causing violent behavior compared to low frequency players ( $M = 2.47$ ).

**Table 1****2 (Gender: Male vs. Female) x 2 (Playing Frequency: Low vs. High) Factorial ANOVA**

5-point Likert items	Player's gender		Playing frequency		Two-way interaction	
	<i>F</i> (1, 958)	<i>r</i>	<i>F</i> (1, 958)	<i>r</i>	<i>F</i> (1, 958)	<i>R</i>
<i>Gaming is equal to any other form of pastime</i>	37.44**	.19	57.81**	.24		n.s.
<i>All gamers are nerds</i>	n.s.		49.88**	.22		n.s.
<i>Gaming is a pastime for boys</i>	n.s.		27.53**	.17	10.82**	.11
<i>Boys are better at gaming than girls</i>	n.s.		14.03**	.12	11.06**	.11
<i>Games cause violent behavior</i>	51.30**	.23	55.93**	.23	5.18*	.07

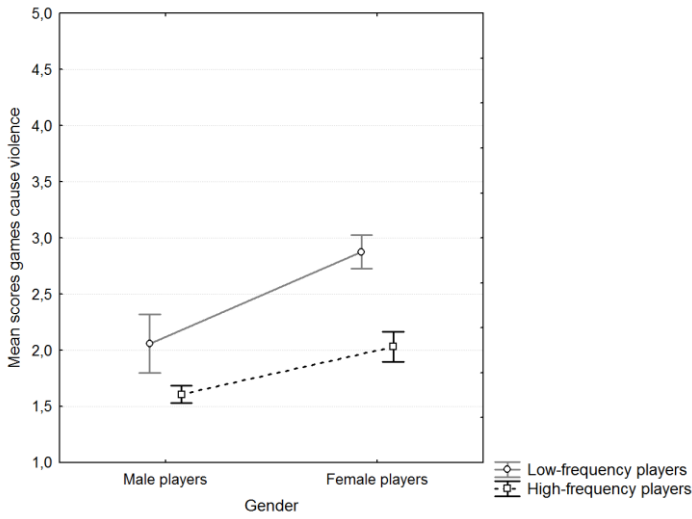
Note. *r* = Pearson's correlation effect size; n.s. = not statistically significant

\**p* < .05. \*\**p* < .001.

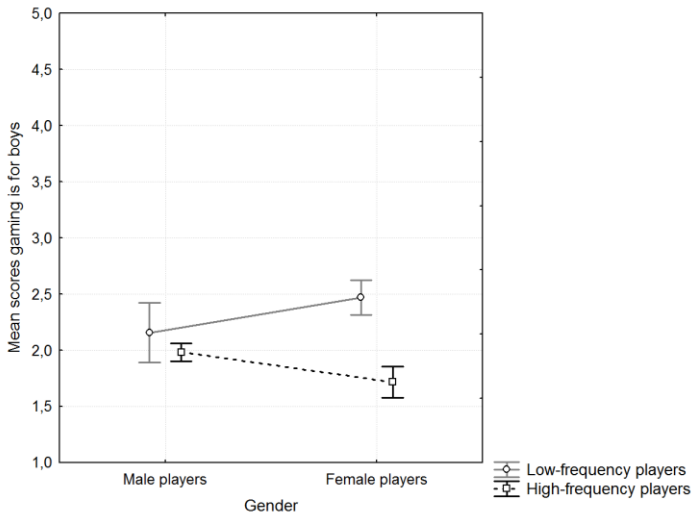


As further displayed in Table 1, playing frequency had a significant main effect on all other items, showing that low frequency players agreed more than high frequency players on gamers being nerds ( $M_{low} = 1.85$  vs.  $M_{high} = 1.39$ ), gaming being a pastime for boys ( $M_{low} = 2.31$  vs.  $M_{high} = 1.85$ ), and boys being better at gaming than girls ( $M_{low} = 2.64$  vs.  $M_{high} = 2.25$ ).

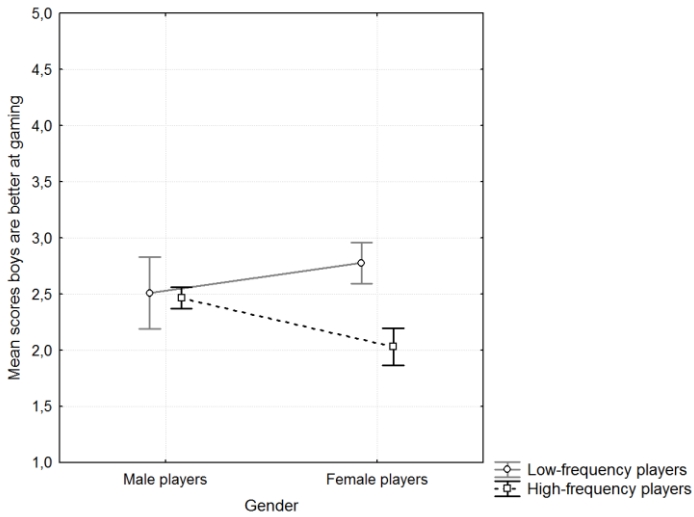
Three significant interaction effects were found between player's gender and playing frequency (see Figures 1-3). First, for the item "Games cause violent behavior", post-hoc tests demonstrated that low frequency female players ( $M = 2.88$ ) agreed significantly more compared to all other groups, while high frequency male players ( $M = 1.61$ ) had significantly lower ratings than other types of players. No significant differences were found between high frequency female players ( $M = 2.03$ ) and low frequency male players ( $M = 2.06$ ). Second, an interaction was found for the item "Gaming is a pastime for boys". Significant post-hoc tests exposed that high frequency women ( $M = 1.72$ ) disagreed the strongest with the statement compared to all other player groups. While Figure 2 illustrates a reversed pattern for low frequency female players ( $M = 2.47$ ), they only significantly differed from high frequency male ( $M = 1.98$ ) and female players and not from low frequency male players ( $M = 2.16$ ). A third statistically significant interaction was found for the gender stereotype that boys are better at gaming than girls. Again, Figure 3 displays an opposed pattern, showing that high frequency female players ( $M = 2.03$ ) have the lowest ratings while low frequency female players ( $M = 2.78$ ) have the highest scores compared with every other group. Pairwise comparisons revealed that high frequency female players significantly differed from other players, yet only marginally significant from low frequency male players ( $M = 2.51$ ,  $p = .05$ ). Whereas the scores of low frequency female players were significantly higher compared to high frequency male ( $M = 2.47$ ) and female players, they did not differ from low frequency male players.



**Figure 1. Interaction between gender and playing frequency on "Games cause violent behavior".**



**Figure 2. Interaction between gender and playing frequency on "Gaming is a pastime for boys".**



**Figure 3. Interaction between gender and playing frequency on “Boys are better at gaming than girls”.**

### 6.3.2. Gender, Game Motivations, and Game Genre Choice

Table 2 summarizes the results of a logistic regression on gender, game motivations, and their interactions for predicting game genre frequency (low vs. high). In what follows, we describe the main effects of gender and game motivations separately from the interaction effects even though both were included in the executed regression models.

**Table 2****Results Logistic Regression for Expected Game Frequency (Low vs. High) of Genres on Gender and Game Motivations**

Variable	Casual Genre			Heavy Action Genres			Growth Genres			Linear Progression Genres			Sports Genres		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
<i>Gender (base = male)</i>	.77	1.18	2.17	-3.02	1.55	.05	-3.36*	1.51	.04	-2.65*	1.25	.07	-1.66	1.21	.19
<i>Competition</i>	-.11	.14	.90	.48***	.15	1.62	-.54***	.15	.59	-.38**	.14	.68	.59***	.14	1.81
<i>Control</i>	.37**	.15	1.44	-.05	.15	.96	.43**	.15	1.54	.14	.15	1.15	.23	.15	1.26
<i>Challenge</i>	.06	.16	1.06	.37*	.17	1.45	.51**	.16	1.67	.41**	.16	1.51	-.21	.16	.81
<i>Social Contact</i>	-.04	.12	.96	.48***	.12	1.61	.35**	.12	1.41	-.19	.11	.83	.07	.11	1.07
<i>Immersion</i>	-.14	.13	.87	.17	.13	1.19	.47***	.13	1.60	.28*	.12	1.32	-.36**	.12	.70
<i>Gender*Competition</i>	-.22	.24	.81	-.30	.28	.74	-.51	.29	.60	-.11	.25	.90	-.32	.24	.73

Variable	Casual Genre			Heavy Action Genres			Growth Genres			Linear Progression Genres			Sports Genres		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
<i>Gender*Control</i>	-.63**	.25	.53	-.24	.31	.79	-.39	.30	.67	-.34	.26	.71	-.67**	.26	.51
<i>Gender*Challenge</i>	.16	.26	1.17	.44	.34	1.55	.41	.33	1.50	.02	.28	1.02	.51	.28	1.67
<i>Gender*Social Contact</i>	.19	.18	1.21	.20	.22	1.22	.70**	.22	2.02	.48**	.19	1.62	.27	.19	1.30
<i>Gender*Immersion</i>	.63**	.21	1.88	.35	.26	1.42	.64**	.26	1.89	.84***	.24	2.30	.48*	.22	1.62
<b>Nagelkerke pseudo R<sup>2</sup></b>	11%			36%			32%			14%			11%		
<b>Chi-square</b>	$\chi^2 = 80.60, df= 11, p < .001$			$\chi^2 = 297.82, df= 11, p < .001$			$\chi^2 = 264.90, df= 11, p < .001$			$\chi^2 = 105.01, df= 11, p < .001$			$\chi^2 = 82.85, df= 11, p < .001$		

Note. B = regression coefficient; SE = standard error; OR = odds ratio (Exp[B])

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

*Main effects.*

Regarding main effects of gender, only the regression models of growth genres and linear progression genres revealed significant gender effects, showing that men were more likely to be high frequency players of these genres than women. Concretely, the odds ratios tell us that as gender changes from male (0) to female (1), the change in the odds of being a high frequency player compared to being a low frequency player is 0.04 for growth genres and 0.07 for linear progression genres. Or put differently, the odds of a man being a high frequency player compared to not being a high frequency player are for growth genres ( $1/0.04 =$ ) 25 times and for linear progression genres ( $1/0.07 =$ ) 14 times more likely than for a woman. No other main effects of gender were found.

Furthermore, the analyses revealed significant main effects of several game motivations for each game genre component. For casual game genres, the positive regression coefficient indicated that an increase of one unit in the control motive produces a change in the odds of being a high frequency casual game player is 1.44. Frequencies of heavy action genres were significantly predicted by higher values on competition, challenge, and social contact motives. Also, the odds of being a high frequency growth genre player rise when scores are increasing on the motivations control, challenge, social contact, and immersion. Interestingly, people who scored higher on the competition motivation were less likely to be high frequency growth genre players. A similar result was found for linear progression genres, further showing that an increase in challenge and immersion produced a higher probability of being a high frequency player of this genre. Higher scores on the competition motive significantly predicted higher odds for being a high frequency sports genre player, while people who had higher ratings on the immersion motive were less likely to play this genre frequently.

*Interaction effects.*

Some of the aforementioned effects should be interpreted with caution, however, given that some findings were superseded by the interaction

between gender and game motivations. Besides heavy action genres, interactions were found for the remaining four game genre components. Of all eight statistically significant interactions, six showed that, as a specific motivation score increased, women were more likely to be high frequency players than men. Concretely, for casual game genres, the interaction between gender and immersion indicated that as gender changes from male (0) to female (1) in combination with immersion increasing, the change in the odds of being a high frequency casual player compared to being a low frequency casual player is 1.88. Similar significant interactions were found for the probability of being a high frequency growth genre player, linear progression genre player, and sports genre player. Furthermore, there were significant interactions between gender and the social contact motivation for determining growth genre and linear progression genre play. In both cases, higher ratings on social contact had a larger effect on women compared to men for being high frequency players. The only significant interactions indicating a stronger effect for men were those associated with the control motivation. Specifically, as scores on the control motive increase, men were more likely to be high frequency casual and sports genre players than women.

#### **6.4. Discussion**

This paper contributes to the field of gender and games studies by investigating stereotypical practices in digital game culture based on a quantitative survey study. In a first stage, we looked at how player's gender and general playing frequency determine stereotypical (gender) beliefs about gaming. In a second phase of this study, genre preferences were examined in light of player's gender and intrinsic playing motivations. This allowed us to better understand gendered patterns of playing styles and how these are modulated by playing motivations of particular game genres. Overall, this study provides novel evidence that frequent female players resist gender stereotypes in games and that some of their motivations for playing certain genres surpass those of male players.

The first research question concerned the relationship between player's gender and playing frequency for the perception of general and gender-

related gamer stereotypes. Generally, we found that most investigated stereotypical beliefs depend on the intersection between gender and playing frequency. While high frequency male players disagreed the most with general gamer stereotypes, high frequency female players held the least gender-related stereotypical beliefs. This is in accordance with the study of Royse et al. (2007) who observed that frequent female players construct a gendered self that does not reflect a traditional masculine/feminine binary. On the contrary, as demonstrated in our study, these players seem to resist the dominant gender discourse in and around digital game culture. This is not unsurprising given the fact that high frequency female players invest heavily in their hobby and therefore may try to refute the allegations directed at their group. Findings further suggested that female low frequency players, though not always significantly different from male low frequency players, held the most stereotypical beliefs with regard to gaming. A possible explanation for this could be that these players suffer from "double stereotyping" as explained in our literature review (Gyongran, 2008). While high frequency female players employ a kind of "fight response" towards stereotypical ideas, low frequency female players may choose to distance themselves from a gamer identity and thus from its negative associated beliefs. This response act is similar to a phenomenon described in stereotype threat literature as "opting out", referring to a coping strategy whereby "threatened" individuals eschew the negative qualities of one's group identity (Cohen & Garcia, 2005). Moreover, given the gender bias in gaming, it could be that these women are more concerned with "performing gender" in accordance with normative conceptions of leisure activities instead of putting themselves in a vulnerable position (Butler, 1990).

Furthermore, we expected that gender (H1) and playing motivations (H2) would predict game genre frequencies. These hypotheses were only partly supported. Although not all identified game motivations accounted for genre play, each genre component could be predicted by one or more playing motivations. Whereas this study did find stereotypical gender genre preferences, only two main effects of gender were significant when controlling for motivations and interactions between player's gender and motivations, showing that men were more likely than women to be high frequency players of



growth genre games and linear progression genre games. No gender differences were found for casual genres, sports genres, and heavy action genres. These findings suggest that assumed gender differences in playing styles are often based on socially constructed ideas of male/female preferences and do not necessarily reflect what, where, and how individuals are really playing. For example, previous research has indicated that "gendered preferences" are often based on assumptions that disregard previous playing experience and acquired access to certain game types (Carr, 2005; Hayes, 2005). It must be noted, however, that people enjoying typical genres allied to their gender should not be dismissed as this would re-install a hierarchical distinction between games that belong to gamer subcultural capital and those that do not (Shaw, 2013; van Zoonen, 2000).

Finally, a second research question focused on the relationship between player's gender and playing motivations to predict game genre playing frequencies. Interestingly, we found rather non-stereotypical play habits of both men and women. Our results revealed significant interactions showing that the effect of motivations on genre playing frequency were larger for female players than for male players. This is dissimilar with previous research that asserted that women are a less motivated player group (Greenberg, Sherry, Lachlan, Lucas, & Holmstrom, 2010). Whereas the control motivation did affect men in a stronger sense to play casual and sports genres, women were more strongly drawn towards casual genres, growth genres, linear progression genres, and sports genres on the basis of social contact and/or immersion motives. Or put differently: women who are motivated by immersion or social contact in games are more likely to be high-frequency players of these genres. This could signify that high frequency female players' motivations exceed stereotypical beliefs of gaming being a male pastime. Given the gender bias in game culture, it is possible that frequent female players have to be strongly motivated to pursue their hobby. Our previous findings already indicated that high frequency female players are reluctant towards gender-related stereotypes and this is further reflected in their motivations for playing digital games. As previously stated by Taylor (2008), these results seem to confirm that women are a highly motivated player group despite of social and cultural thresholds in game culture.

Some limitations of this study should be mentioned however. First, we should note that player's gender is just one dimension to take into account when discussing gaming stereotypes. Other demographic variables such as ethnicity and social class, could provide us with a more thorough understanding of stereotypical practices in game culture. Second, this study may not represent the whole gamer population because individuals were recruited based on respondents' self-selection. Third, it should be noted that findings might be limited to game players in the Belgian context. Other (Non-Western) contexts such as fervent Asian game cultures could yield very different results. Fourth, single items were used to measure gamer and gender-related stereotypical attitudes. Future research on gamer stereotypes should further elaborate on underlying constructs and try creating a measurement index. Fifth, using a cross-sectional research design prevented us from making causal inferences. To make up for this flaw, it is suggested to further explore gaming stereotypes by means of qualitative in-depth research. This will not only allow to further elaborate on contextual factors, but also to provide a clear account of which gamer stereotypes are prevalent nowadays. We are aware that this study only provides a glimpse of stereotypical gamer perceptions and that many other common ideas, including positive ones, may be circulating in contemporary society.

Despite of these limitations, the present study is one of the first that elucidated the interplay between stereotypical gamer beliefs, playing frequency, and playing motivations with focus on player's gender. It provides a nuanced account of gender differences in stereotypical gamer behavior and beliefs from a social constructionist stance. In our opinion, this perspective advances an interesting theoretical basis to understand how player's gender and play habits can be linked to stereotyping. We believe that the research findings provide more insight into female game play and how woman gamers themselves negotiate and deal with stereotypical beliefs in game culture. Practically, results could be interesting for game designers aiming to reach a more inclusive audience; for example by implementing more immersive content elements or offering extensive possibilities for social contact in digital games. Focus should not solely be on satisfying the needs of an already motivated female player group, however. It

remains important to tackle stereotyping practices in gaming in order to shift from games as a threatening medium to gaming as an uninhibited pastime for women.



# CHAPTER SEVEN

## CHALLENGING THE OTHER. EXPLORING THE ROLE OF OPPONENT GENDER IN DIGITAL GAME COMPETITION FOR FEMALE PLAYERS

### **Contextualization Study III**

**T**his experimental study contains the impetus for empirically investigating women's threat experiences when playing digital games. Theoretical explanations are particularly sought in the Social Cognitive Theory of Gender Development and Differentiation (Bussey & Bandura, 1999) proclaiming that games are important vessels for managing gendered roles and conduct. Moreover, although this work clearly fits within audience "effects" research, focusing on how audiences are affected by media (Abercrombie & Longhurst, 1998), we are well aware of the problems defining this type of research. We do not believe that women passively absorb media messages nor do we adhere to uniform audience responses. In contrast, women's responses tend to be varied with different individuals responding in diverse ways. It is argued that today's media effects research conceptualizes media influence "in much more open, indirect, complex, and sophisticated ways than the direct-effects model suggested" (Milestone & Meyer, 2012, p. 153). Acknowledging that audiences can be active, however, does not imply that media are *per se* ineffectual (Kitzinger, 2013). This study demonstrates how power discourse operates within game culture through taking under scrutiny the mechanism of stereotype threat. This psychological mechanism is most likely to be experienced in cross-gender competition as it acts upon dominant gender dynamics. It exhibits how women who encounter a sense of threat are possibly dealing with enhanced levels of self-doubt and emotional discomfort.

**Abstract Study III**

The present study investigated the effect of opponent gender on the game experience of female players. Concretely, it looked into skill perception and player emotions of women in same-gender and cross-gender game competition. We set up a 2 (male vs. female opponent) x 2 (low vs. high competitive women) x 2 (lost vs. won game) experimental design in which women were instructed to play against a proclaimed male and female competitor. Unknowingly, participants played against an AI, however, which was configured to produce a winning and a losing condition for each opponent by manipulating difficulty. Results indicated that opponent gender only had an effect on perceived stress, which was higher with male opponents. Moreover, players evaluated their own gaming skills as lower when they thought they were playing against men and the skills of presumed male opponents as higher. Importantly our results also showed that the above described pattern for self-perceived skills and perceived opponent skills was modulated by trait competitiveness with a larger effect size for low competitive women. Overall, this study illustrates that gender dynamics affect the play experience of women in cross-gender gaming competition. Implications and suggestions for future research are discussed.

**Keywords Study III**

Cross-gender competition; Digital games; Experiment; Female players; Skill perception

**Reference Study III**

Vermeulen, L., Núñez Castellar, E., & Van Looy J. (2014). Challenging the other: Exploring the role of opponent gender in digital game competition for female players, *Cyberpsychology, Behavior, and Social Networking*, 17(5), 303-309.

## 7.1. Introduction

In the past decades, digital gaming has become a mainstream pastime, playing an ever more important role in the lives of a growing variety of both men and women (Tobias & Fletcher, 2011). The growth of the female gamer segment has been impeded, however, by the persistent view that games are predominantly “male territory” (Bryce & Rutter, 2003; Terlecki et al., 2011; Willoughby, 2008). Scholarly research has tried to explain this gender bias by raising questions about popular themes (Greenberg et al., 2010; Hartmann & Klimmt, 2006), female avatar representation (Behm-Morawitz & Mastro, 2009; Downs & Smith, 2010), and gaming access for women (Bryce, Rutter, & Sullivan, 2006; Jenson et al., 2007). Related to this, a fourth possible explanation for the limited female presence in the gaming space is reluctance to engage in cross-gender competition due to cultural norms of gender division (Bertozzi, 2008).

The Social Cognitive Theory (SCT) of Gender Development and Differentiation (Bussey & Bandura, 1999) explains gender-linked conduct in terms of a triadic reciprocal causation in which interactions between environmental forces, personal factors, and behavior occur. Much of what is acquired in this dynamic process takes place through social modeling referring to observational learning of gender-linked behavior (Bandura, 1986; Bussey & Bandura, 1999). Next to parents and peers, media hold a central position in providing symbolic models of gendered roles and conduct (Bandura, 2001; Bussey & Bandura, 1999). It is argued that digital games in particular tend to promote traditional gender ideals, for instance, by under-representing women and diffusing sexualized images (Behm-Morawitz & Mastro, 2009; Dickey, 2006; Downs & Smith, 2010). Besides providing role models, gaming itself concerns a gendered leisure activity. Unlike many other media, such as television or radio, playing games is a behavior that is typically associated with males (Hayes, 2005; Sveningsson, 2012). This is not surprising as history shows how men were continuously favored by the game industry and thus steadily grew as its core audience (Carr, 2005; Laurel, 2008). Furthermore, female players, especially those of games perceived as masculine, are reported to encounter harassments

as a result of their mismatch with socially acceptable feminine roles (Lin, 2008; Lucas & Sherry, 2004; Schott & Horrell, 2000; Yee, 2008). This becomes particularly apparent when women are overtly competing against male players as “cross-gender challenges call into question the whole social order” (Bertozzi, 2008, p. 476). This is further corroborated by research into tournament-entry, showing that women are more reluctant than men to enter cross-gender competitive environments (Gneezy, Niederle, & Rustichini, 2003; Niederle & Vesterlund, 2008). In other words, it seems that gender dynamics thwart competition between men and women in game contexts. Whereas previous research showed that females experience more aggressive thoughts when playing against males (Eastin, 2006), no empirical study has looked into the effects of cross-gender competition on the broader game experience of female players. The present article aims to fill this gap and thus further our understanding of the role of gender differences in game play. Concretely, we propose the following research question:

*RQ:* How does opponent gender affect the game experience of female players?

Beliefs about one’s capabilities play a major role in competition. According to SCT, people’s expected outcomes function as a motivating source to execute certain behavior. To successfully reach certain outcomes, behavior should be supported by a sense of self-efficacy, that is, one’s perceived capability and skills to produce an attainment (LaRose, 2009). However, self-efficacy is susceptible to gender stereotyping as it diminishes judgments about personal abilities (Bussey & Bandura, 1999). The theory of Stereotype Threat (Steele & Aronson, 1995) explains the mechanism underlying this process by stating that the psychological threat to confirm a negative stereotype about one’s social category undermines performance expectations (Cadinu et al., 2003; Spencer, Steele, & Quinn, 1999; Stangor, Carr, & Kiang, 1998; Steele & Aronson, 1995). This identity threat is most likely to occur in competitive environments (Günther, Ekinci, Schwierien, & Strobel, 2010; Lee, 2009) such as in mediated contests (Lee & Nass, 2012). Given that female gamers take a marginalized position in a male dominated environment (Hayes, 2005), this may lead to lower self-



confidence when competing against male opponents. Low self-efficacy can function as a barrier to competition, motivating women to play solitarily (Castell & Jenson, 2005), adopt more acceptable gaming roles such as caregiver (Gyongran, 2008), or even avoid playing games altogether (Bertozzi, 2008).

According to Stereotype Threat theory, performing in a domain in which one is stereotyped evokes negative emotional or arousal-based reactions (Ben-Zeev, Fein, & Inzlicht, 2005; Cadinu, Maass, Rosabianca, & Kiesner, 2005; Keller & Dauenheimer, 2003; Vick, Seery, Blascovich, & Weisbuch, 2008). Positive emotions are crucial in the determination of future behavior (Frijda, Kuipers, & Ter Schure, 1989), however, for example for playing games. Poels, van den Hoogen, Ijsselstein, and de Kort (2012), for instance, found that positive emotions such as pleasure and arousal are predictive for future play. Moreover, competition has been found to influence emotional responses to digital games (Eastin, 2006; Ravaja, 2009). Given that social competition involves social-evaluative elements (Ravaja, 2009), it is plausible that "every evaluation (. . .) leads to an *emotional state* (enjoyment, stress, frustration) that differs in accordance to how the 'status quo' is perceived" (Vorderer et al., 2003, p. 4). Thus, if female players experience stereotype threat, cross-gender gaming competition may evoke lower positive emotional responses than same-gender competition. Hence we propose the following hypotheses:

*H1: In cross-gender competition, female players will experience more challenge and estimate their skill as lower than in same-gender competition*

*H2: In cross-gender competition, female players will experience higher arousal and negative affect than in same-gender competition.*

Trait competitiveness can serve as a buffer against the negative effects of threatening situations (Johnson, 2012). It could be, for example, that high-competitive people reappraise the situation as a challenge while low-competitive people are more concerned with the threat (Johnson, 2012; Steele & Aronson, 1995). This is in line with research findings regarding sports performance which demonstrate that athletes

with high competitive anxiety have a disposition to worry more about situational threats (Dunn & Dunn, 2001; Martens, Vealey, & Burton, 1990; Martin & Gill, 1991). Thus it is possible that competition-oriented women are less prone to gender dynamics in cross-gender tournaments. The current study looks into this claim and explores whether competitiveness has a moderating effect on emotions and perceived skill in cross-gender game play.

## **7.2. Method**

### *7.2.1. Participants*

Participants were recruited via e-mail and flyers distributed on the Ghent University campus. Forty-nine female college students participated in the experiment. Given that the subjects had to win and lose against a proclaimed male and female opponent, three participants were excluded due to a failed winning condition and seven were removed because of suspicions regarding the experimental setup. Thirty-nine participants were retained ( $M_{\text{age}} = 24.33$ ,  $SD = 4.92$ , min. = 20, max. = 49). Thirteen percent of the subjects indicated that they never played games, 33% at least once a year, 28% monthly, 13% weekly, and 13% daily.

### *7.2.2. Design*

A 2 (competitiveness: high versus low) x 2 (opponent: male versus female) x 2 (outcome: win versus lose) mixed ANOVA design was used to examine the effect of cross-gender competition in game play. The between-subjects factor was trait competitiveness and the within-subjects factors were opponent gender and game outcome.

### *7.2.3. Measures*

#### *Competitiveness.*

We measured trait competitiveness to investigate its moderating effect on emotions and perceived skill using the Revised Competitiveness Index, a structured personality instrument consisting of fourteen 5-point Likert items (Houston, Harris, McIntire, & Francis, 2002).

### *Subjective measures.*

To test whether emotional responses were modulated by the cross-gender manipulation, participants filled out the 9-point Self-Assessment Manikin of Lang (1980) after each play session. This visual self-report scale directly measures people's affective reaction to a certain stimulus in terms of pleasure, arousal, and dominance (Bradley & Lang, 1994). Additionally, similar to Mastro, Eastin, and Tamborini (2002), subjective levels of stress and frustration were measured by two items ranging from 0 (*not at all*) to 10 (*extremely*). To assess skill and perceived challenge, 4-item Likert scales from Novak, Hoffman, and Yung (2000) were used ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Moreover, participants rated their opponents' skills on a 10-point item from 0 (*very bad*) to 10 (*very good*) after each session.

### *Objective measures.*

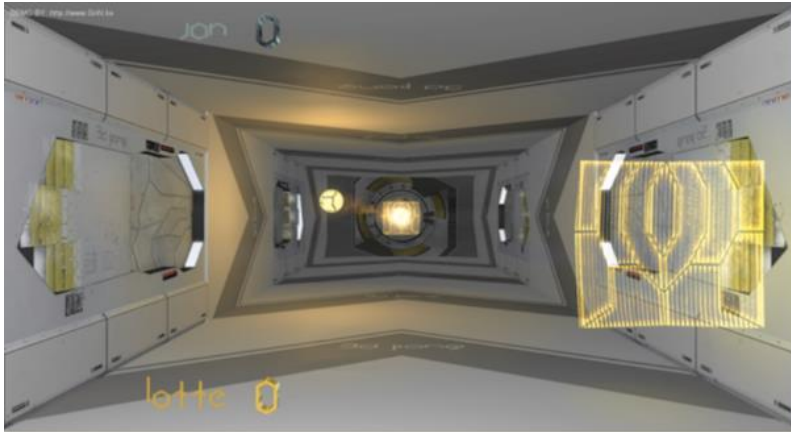
Objective performance, which was recorded using an automatic logging system built into the game, was measured with a total of three parameters of in-game behavior: playing time, player's score in losing condition, and the AI's score in the winning condition.

#### *7.2.4. Procedure*

We adapted a 3D (seemingly) multiplayer version of the game *Pong* (Atari, 1972) (see Figure 1) in collaboration with GriN Multimedia. In contrast to previous studies on cross-gender competition (Eastin, 2006), we opted for a gender-neutral and non-violent game to exclude potential influence from stereotypical male-oriented themes (Brown, Hall, Holtzer, Brown, & Brown, 1997).

Participants were welcomed and introduced to a male and a female opponent before being escorted to a separate room. There they were asked to compete in four rounds of *Pong*, two against each opponent. In reality, the opponents were confederates and the test person played against an AI configured to produce a winning and a losing condition for each opponent by manipulating difficulty. Before each play session a screen was shown with the name of the opponent for 15-30 seconds.

Opponent order was randomized. As a manipulation check, we asked participants to correctly recall the name of their opponent after each play session. These answers were afterwards compared with the game's log files, which indicated that no participant had reported an incorrect name. After each session, participants had to fill out a questionnaire about their emotions while playing, their perceived skill, and game aesthetics (i.e., cover questions).



**Figure 1. Screenshot of the *Pong* game developed by GriN Multimedia.**

### **7.3. Results**

#### *7.3.1. Scale Validity*

The trait competitiveness scale had a high reliability ( $\alpha = .87$ ). The mean score for the total sample was 44.69 ( $SD = 7.82$ ). Categorization of participants into low ( $n = 19$ ) and high ( $n = 20$ ) competitive women was based on a median split ( $Mdn = 47$ ,  $range = 32$ ). No significant differences were found between groups for gaming frequency,  $t(37) = -1.29$ ,  $p = .204$ , and expected chance of winning,  $t(37) = 1.30$ ,  $p = .200$ .

#### *7.3.2. Descriptive Statistics*

Table 1 reports the main descriptive statistics for the opponent gender conditions and the subjective dependent variables used in this study.

Overall, the table illustrates that game outcome was an important determinant for all dependent measures.

**Table 1**

**Descriptive Statistics for Dependent Variables on all Experimental Conditions**

	Gender opponent			
	Cross-gender competition		Same-gender competition	
	Lost trial	Won trial	Lost trial	Won trial
<i>Pleasure</i>				
Mean (SD)	4.72 (1.99)	7.51 (0.91)	4.82 (1.90)	7.21 (1.08)
Min/Max	1/8	5/9	1/8	5/9
<i>Arousal</i>				
Mean (SD)	5.85 (1.65)	5.56 (2.01)	6.05 (1.50)	5.36 (1.97)
Min/Max	2/9	1/9	3/9	1/9
<i>Dominance</i>				
Mean (SD)	3.74 (1.73)	6.23 (1.50)	3.59 (1.70)	6.15 (1.69)
Min/Max	1/8	2/9	1/8	2/9
<i>Frustration</i>				
Mean (SD)	4.85 (2.54)	1.87 (1.84)	4.43 (2.62)	1.90 (1.74)
Min/Max	0/10	0/6	0/9	0/5
<i>Stress</i>				
Mean (SD)	5.15 (2.63)	3.51 (2.73)	4.13 (2.71)	3.31 (2.83)
Min/Max	0/9	0/9	0/9	0/9
<i>Challenge</i>				
Mean (SD)	5.60 (1.63)	4.65 (1.57)	5.35 (1.44)	4.58 (1.60)
Min/Max	2.50/9	1.75/9	3/8.75	1.75/9
<i>Perceived Player Skill</i>				
Mean (SD)	2.97 (1.17)	5.99 (1.23)	3.05 (1.09)	6.13 (1.05)
Min/Max	1/7	2.25/9	1.50/6	3.50/9
<i>Perceived Opponent Skill</i>				
Mean (SD)	8.23 (1.04)	5.85 (1.57)	7.90 (1.19)	5.56 (1.54)
Min/Max	6/10	3/9	6/10	1/9

### 7.3.3. Analysis

#### *SAM-scale.*

Using the SAM-scale (Lang, 1980), we looked into the self-reported player emotions pleasure, arousal, and dominance. As shown in Table 2, there was no effect of opponent gender or trait competitiveness on these emotional responses. Game outcome, however, had an effect on pleasure,  $F(1, 37) = 71.33, p < .001, r = .81$ , and dominance,  $F(1, 37) = 54.08, p < .001, r = .77$ . Concretely, winning invoked more feelings of pleasure ( $M = 7.36$  vs.  $M = 4.78$ ) and dominance ( $M = 6.19$  vs.  $M = 3.67$ ) than losing. Significant differences in arousal were absent for all conditions.

#### *Perceived frustration and stress.*

Table 2 demonstrates a significant main effect of opponent gender on stress,  $F(1, 37) = 6.76, p = .01, r = .15$ , showing that participants perceived more stress when competing against male ( $M = 4.32$ ) than female opponents ( $M = 3.69$ ). There was also a main effect of game outcome,  $F(1, 37) = 22.62, p < .001, r = .62$ , indicating that players felt more stress when losing ( $M = 4.62$ ) than when winning a contest ( $M = 3.39$ ).

Moreover, ANOVA revealed a significant main effect of game outcome on frustration,  $F(1, 37) = 108.12, p < .001, r = .86$ . Players felt more frustrated when losing ( $M = 4.62$ ) than when winning a game round ( $M = 1.88$ ). No other significant differences were found in frustration levels.

#### *Challenge.*

Our results revealed a significant main effect of outcome on perceived challenge,  $F(1, 37) = 13.67, p < .001, r = .52$ , showing that players experienced more challenge in losing ( $M = 5.48$ ) than in winning conditions ( $M = 4.61$ ).

*Skill.*

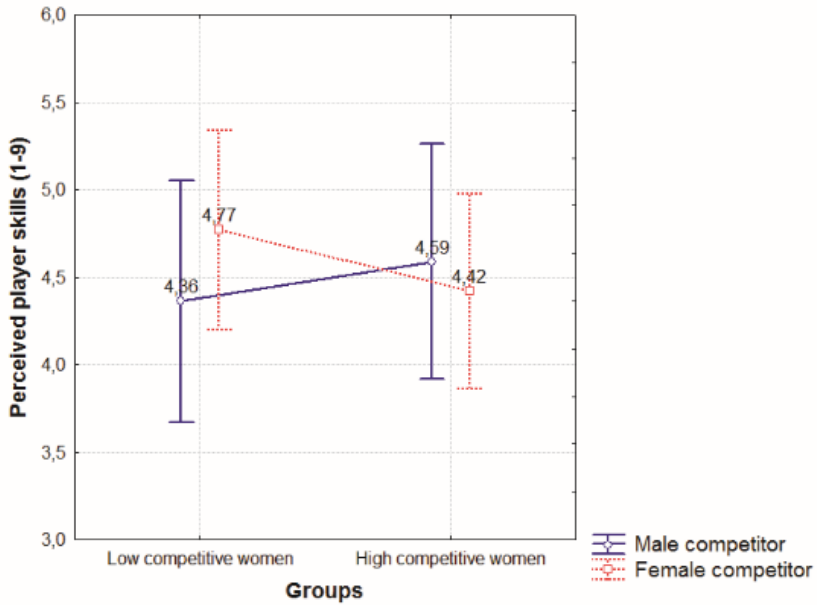
For perceived skill, a significant main effect of game outcome was found,  $F(1, 37) = 398.47, p < .001, r = .96$ , suggesting that participants perceived their own skill as lower when losing ( $M = 3.01$ ) compared to when winning ( $M = 6.06$ ). However, there was a significant interaction between opponent gender and trait competitiveness,  $F(1, 37) = 4.52, p = .04, r = .33$  (see Figure 2). Pairwise comparisons, using Fisher LSD test, revealed that low competitive women evaluated their skills significantly lower in cross-gender conditions than in same-gender conditions ( $p = .04$ ). However, when controlling for alpha inflation, a Tukey HSD follow-up test showed no significant differences between pairs. For perceived opponent skill, a significant main effect of outcome,  $F(1, 37) = 109.32, p < .001, r = .86$ , demonstrated that participants perceived the skills of opponents higher in losing conditions ( $M = 8.06$ ) compared to winning conditions ( $M = 5.70$ ). There was also a main effect of opponent gender,  $F(1, 37) = 5.02, p = .03, r = .35$ , showing that gaming skill of male competitors ( $M = 7.04$ ) are perceived higher than those of female competitors ( $M = 6.72$ ). However, results revealed a significant interaction between opponent gender and competitiveness trait,  $F(1, 37) = 4.26, p = .04, r = .32$  (see Figure 3). Post-hoc comparisons indicated that low-competitive women gave significantly higher ratings to male ( $M = 7$  vs.  $M = 6.39$ ) than to female competitors (LSD-test:  $p < .01$  vs. HSD-test:  $p = .02$ ).

**Table 2**  
**Mixed ANOVA Results (F-values) for Gender Opponent, Group Competitiveness (Low vs. High), and Game Outcome (Losing vs. Winning)**

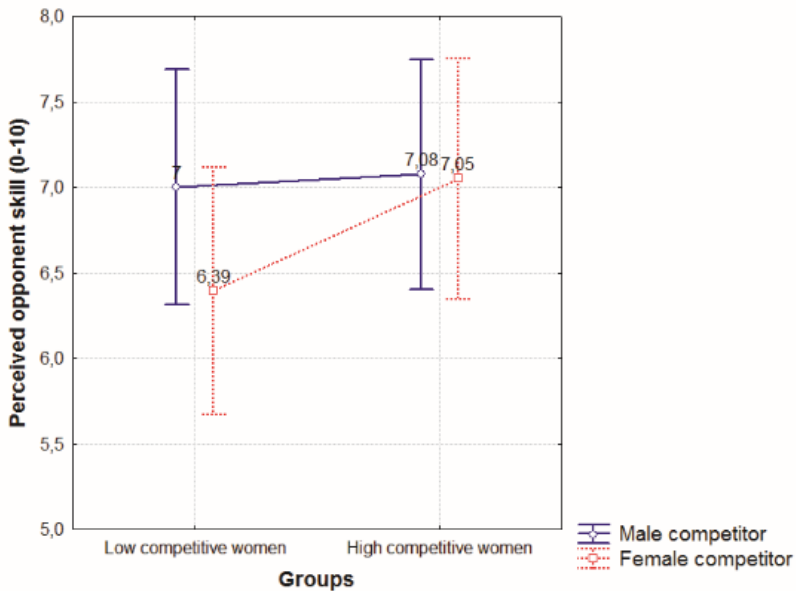
	Dependent variables							
	Pleasure	Arousal	Dominance	Frustration	Stress	Challenge	Perceived skill	Perceived opponent skill
<i>Gender Opponent</i>	.32	.001	.47	.73	6.76*	1.39	.78	5.02*
<i>Game Outcome</i>	71.33**	3.14	54.08**	108.12**	22.62**	13.67**	398.47**	109.32**
<i>Gender Opponent x Competitiveness</i>	.09	1.14	.06	.73	1.55	.05	4.52*	4.26*
<i>Game Outcome x Competitiveness</i>	3.56	.05	.20	2.34	.05	.48	.04	.09
<i>Gender Opponent x Outcome</i>	1.55	1.80	.06	1.69	3.76	.56	.07	.03
<i>Three-way Interaction</i>	1.55	.22	.01	1.01	.01	1.33	.52	2.64

\* p < .05, \*\* p < .001





**Figure 2. Interaction between opponent gender and trait competitiveness on perceived player skill.**

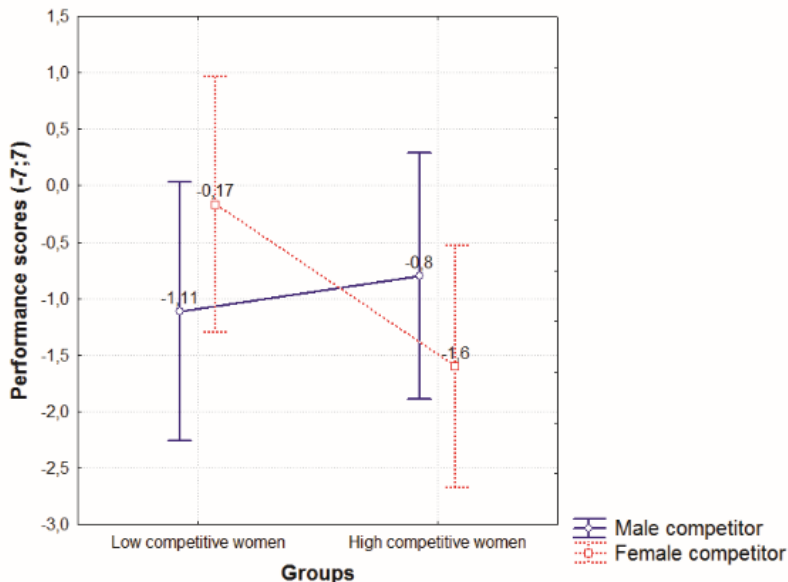


**Figure 3. Interaction between opponent gender and trait competitiveness on perceived opponent skill.**

### Objective measures.

The ANOVA yielded a main effect of outcome on playing time,  $F(1, 36) = 157.17, p < .001, r = .90$ , showing a smaller duration for losing ( $M = 81.61$  seconds) than for winning conditions ( $M = 128.87$  seconds). No other significant effects were found.

Furthermore, we subtracted AI's scores from player's scores, resulting in a total performance score of the cross-gender and same-gender condition. Given that we manipulated winning and losing, the variable outcome was excluded from the analysis. We therefore conducted a 2 (opponent gender: female vs. male)  $\times$  2 (low vs. high competitive women) ANOVA, which revealed no significant effects. However, there was a marginally significant interaction between competitiveness and opponent gender,  $F(1, 36) = 3.07, p = .089, r = .28$ . Figure 4 depicts a reversed pattern in which low competitive women performed better in same-gender conditions compared to high competitive women who scored better in cross-gender conditions.



**Figure 4. Marginally significant interaction between opponent gender and trait competitiveness on performance scores.**

## 7.4. Discussion and Conclusion

This study is one of the first to use an experimental approach to investigate how opponent gender affects the game experience of female players. In doing so, we looked at the effect of cross-gender competition versus same-gender competition on player emotions and skill perceptions, when controlling for the game outcome (winning vs. losing). Although all variable scores (except for arousal) were dependent on game outcome, we were able to distinguish some distinctive opponent gender effects. Specifically, the present study provides novel evidence showing that perceived skill and stress level of (low competitive) female players are influenced by opponent gender in a gaming competition.

Hypothesis 1 stated that women would feel more challenged and perceive their gaming skills as lower in cross-gender competition. Whereas no effect was found for challenge, perceived player's skill was influenced by opponent gender and trait competitiveness. Specifically, we found that low competitive women rated their own skills lower in case of playing against men instead of women. Given that AI difficulty was equal in the cross-gender and same-gender conditions, this finding suggests that low competitive women tend to incorrectly assess their gaming skills when playing against men. This result should be interpreted with caution, however, given that the effect was not significant when using a more conservative post-hoc test, possibly due to the small sample size. Nonetheless, we found a similar pattern for perceived opponent skill. Besides a main effect of opponent gender, our analysis indicated an interaction between trait competitiveness and opponent gender. Low competitive women were found to perceive the skills of male competitors as higher than that of female competitors, which is in line with our previous finding. In other words, even when controlling for outcome, low competitive women seem to take gender as a criterion for gaming ability. These findings are in line with Bussey and Bandura's (1999) claim that gender dynamics diminish judgments about personal abilities within a gaming context. However, opponent's gender did not affect judgments of high competitive women. This is not surprising as more competitive people are less reluctant to enter tournaments (Vorderer et al., 2003) and thus may be less prone to

restrictive gender dynamics. While high competitive women may interpret gaming competition as a motivating challenge, low competitive women might perceive it as a threat affecting their sense of confidence (Steele & Aronson, 1995).

Hypothesis 2 stated that cross-gender competition would elicit more negative feelings in women. This was only partially supported as opponent gender did not affect pleasure, dominance, or frustration. However, we did find that stress levels were influenced by opponent gender indicating that participants felt more stress when playing against male than when playing against female competitors. This finding is not unexpected as literature has shown that stereotype threat can be a source of stress (Inzlicht & Kang, 2010; Schmader, Johns, & Forbes, 2008). When female players in cross-gender competition experience social identity threat, emotional strain can occur.

Additionally, we investigated the effect of opponent gender on objective game performance. Whereas there was a slight indication that low competitive women played better against female opponents than high competitive women, no notable differences were found in player's performance. An explanation could be that the used objective measures were not sensitive enough for detecting differences in performance across the different conditions. Future research should therefore administer a more fine-grained method.

Another concern relates to ecological validity. Using a laboratory-based research method, the present study set up an artificial context in which participants were instructed to play a game against someone they did not know beforehand. Future studies should investigate cross-gender situations in more natural and/or different social gaming contexts. For instance, some online games offer the opportunity of hiding one's offline gender behind an avatar whose gender may or may not correspond with the player's gender. Further research could investigate whether women playing anonymously with male characters feel less threatened by their opponent. Moreover, there exists a whole spectrum of game genres affording different game playing strategies (Kaye & Bryce, 2012). Future studies could further examine female players' experiences in collaborative rather than competitive situations.

Despite these limitations, however, the present study provides novel insights into female game play and how this is affected by cross-gender competition. Not only do games as gender-linked tools hinder women to adopt gaming technology (Behm-Morawitz & Mastro, 2009; Carr, 2005), women also seem to “perform gender” (West & Fenstermaker, 1995; West & Zimmerman, 1987) during game play itself. Regardless of game outcome, they are likely to take their own and other’s gender as a sign of gaming ability. Stereotype Threat theory offers an explanation for this behavior, framing it as an artifact caused by the threat of confirming a negative stereotype as a self-characterization (Steele & Aronson, 1995). In a broader sense, this threat can eventually lead women to disidentify with the playing field (Steele, 1997). Since games are a gateway to computer literacy (Cooper, 2006), women are therefore placed in a disadvantaged position in today’s information society. Providing insight into how gaming culture hinders female participation may therefore serve to better understand gendered patterns of skill perception in other fields like internet and computer studies.

### **7.5. Acknowledgements**

The authors like to thank Evelien D’heer and Jan Decock for posing as confederates during the experiment. Special thanks go to GriN Multimedia for developing the *Pong* game.

### **7.6. Disclosure Statement**

No competing financial interests exist.



# CHAPTER EIGHT

## PART I

### PLAYING UNDER THREAT. EXAMINING STEREOTYPE THREAT IN FEMALE GAME PLAYERS

#### **Contextualization Study IV**

**F**ollowing the previous chapter, this study further elaborates on how the stereotype threat mechanism operates in the context of women playing games. The main differences lie in the experimental manipulation and the study's design. Concerning the manipulation, while the previous study's interest was about the effect of opponent gender, this study assesses women's play experience when stereotypical information is reinforced, absent, or counteracted with affirmative information. Additionally, this work places emphasis on the complex processes of reception and consumption by including other explanatory factors that mediate stereotype threat effects such as previous play experience and gamer identity (which is dissimilar from playing games, cf. *supra*). In doing so, it is acknowledged that the concept of influence is negotiated by individuals and thus is far from a homogeneous process. We are aware that women (un)wittingly use their knowledge, identifications, and personal interests to engage with digital games.

**Abstract Study IV**

The present study assesses the impact of stereotype threat on how women experience digital gaming in an evaluative context. By means of a controlled lab experiment, this study tested the effects of reinforcing stereotypical information suggesting that women are less competent players versus the effects of countering this stereotype. In doing so, game leaderboard scores were manipulated distinguishing between Stereotype Neutral (high scores without gender cues), Stereotype Boost (female-dominated high scores) and Stereotype Threat (male-dominated high scores) conditions. Results indicated that gamer identity, trait competitiveness, and playing habits modulate the experience of social identity threat. Performance and affective responses elicited by the Stereotype Threat Condition were more negatively affected in case of strongly identified gamers, highly competitive women, and/or avid players when compared with the other conditions. However, virtually no differences were observed when comparing the Stereotype Neutral and Stereotype Boost conditions. Overall, the present study demonstrates the existence of the stereotype threat mechanism and how this undermines the game experience of female players within digital game culture.

**Keywords Study IV**

Digital games; Experiment; Female players; Gender; Social Identity; Stereotype Threat

**Reference Study IV**

Vermeulen, L., Núñez Castellar, E., Janssen, D., Calvi, L., & Van Looy, J. (2016). Playing Under Threat. Examining Stereotype Threat in Female Game Players. *Computers in Human Behavior*, 57, 377-387.



## 8.1. Introduction

It is generally believed that everyone maintains multiple social identities (Good et al., 2007). Moreover, these identities can be degraded in particular contexts. In the case of digital games, women's social identity has been threatened by contexts in which they are numerically underrepresented (e.g., "core" gaming) (Williams et al., 2009), portrayed as hypersexual (Downs & Smith, 2010), subtly or overtly assaulted (Fox & Tang, 2014), or seen as unqualified with men being the "gaming experts" (Schott & Horrell, 2000). Together, these conjure up stereotypical ideas about women not belonging and being less competent than men when playing games. Prior research has shown that the mere belief of playing against males is enough to invoke negative gender dynamics resulting in heightened emotional strain and troubled skill perception of female players (Vermeulen, Núñez Castellar, & Van Looy, 2014). The current study builds upon this work by showing how stereotype threat operates in an evaluative gaming environment. The authors will not only look at effects of stereotype-enhancing or -reducing situations, but also inquire into how perceived threat interacts with other explanatory variables of performance and affective outcomes. To our knowledge, no other study has examined stereotype threat as a complicated and nuanced mechanism in the context of women playing digital games. Understanding how processes of stereotype threat operate in contemporary game culture will add to insights pertaining to research on female players.

### 8.1.1. *Stereotype Threat in Digital Gaming*

From the social identity theory perspective (Tajfel & Turner, 1986), individuals employ their group membership as a basis for self-evaluation. People have a wide repertoire of category memberships such as being a woman and a gamer, which are represented as social identities in individual members' minds (Hogg et al., 1995; Moje & Martinez, 2007, Spencer et al., 2015). Achieving or maintaining a positive self-concept through normative group actions and making favorable comparisons between in- and out-groups is essential for individuals (Hogg et al., 1995; Inzlicht & Schmader, 2012). However, when positive group perceptions are challenged, individuals may

experience a sense of social identity threat. Whilst there are several types of social identity threat (Branscombe et al., 1999), stereotype threat is the most well-known and most-studied in social psychology (Ben-Zeev et al., 2005; Cadinu et al., 2003; Good et al., 2007; Inzlicht & Kang, 2010; Keller & Dauenheimer, 2003). It is induced by evaluative situations in which negative stereotyping of a group causes its members to fear the risk of confirming it as a self-characterization (Steele, 1997; Steele & Aronson, 1995). The mere knowledge of the negative stereotype can be sufficient to initiate this mechanism even when one does not endorse the stereotype (Cooper, 2006).

Whilst numerous studies have shown that women suffer from stereotype threat in domains such as math (Ben-Zeev et al., 2005; Christy & Fox, 2014) and leadership (Davies et al., 2005; Gupta et al., 2014), this mechanism has only barely been explored in the context of digital gaming (see for example: Richard & Hoadley, 2013). Given that the social identity of being a woman is devalued vis-à-vis digital games (Consalvo, 2012), it is plausible that stereotype threat impairs the experience of female players in situations where a negative stereotype might be confirmed. The purpose of the present study is to explore whether and how stereotype threat influences the way women experience gaming in an evaluative context. Concretely, the aim is to investigate the effects of reinforcing the stereotypical information suggesting that women are less competent than men at playing versus the effects of countering this stereotype in a controlled experimental set up. A control condition where no gender information is provided has been implemented to serve as comparison. Since past studies revealed that offering positive female role models can alleviate the negative effects of stereotype threat (Drury et al., 2011; Marx & Roman, 2002; McIntyre et al., 2003), it is hypothesized that when countering this stereotype by showing that other females were highly competent in the same evaluative context (i.e., Stereotype Boost), women will report a different gaming experience, likely more enjoyable, than when this stereotype is enhanced (i.e., Stereotype Threat).

### *8.1.2. Performance and Affective Responses to Stereotype Threat*

In order to assess the impact of the experimental manipulation, several dimensions of gaming experience will be considered. First of all, it is crucial to inquire into performance as previous studies have shown that the effects of stereotype threat often manifest themselves in performance deficits (Cadinu et al., 2005). For instance, it has been found that the unpleasant idea that one's behavior could be judged in terms of the stereotype might paradoxically confirm this stereotype by underperforming to someone's potential (Good et al., 2007). Likewise, research has revealed that stereotyped identities anticipate this process by having low performance expectations prior to an evaluative task (Cadinu et al., 2003). Applied to gaming, it is expected that female players exposed to stereotype threat will show decrements in expected and objective performance compared to women unexposed to this threat. A similar pattern is predicted for perceived performance as past research suggests that woman gamers tend to underestimate their performance when playing against men instead of other women (Vermeulen et al., 2014).

Secondly, affective responses are assessed since previous research asserts that stereotype-induced situations may generate negative affective responses in individuals. In fact, one of the main drivers of the stereotype threat mechanism is increased anxiety (Bosson et al., 2004). This feeling derives from the "fear" of confirming a negative stereotype about one's group membership (Steele & Aronson, 1995). Additionally, the literature indicates that stereotyped identities under threat report more negative feelings such as low confidence (Richard, 2015; Smith, 2004) and high stereotype-associated concerns (Lee & Nass, 2012). Since emotions have been shown to be important regulators of behavior, defining further action tendencies or the lack thereof by individuals (Frijda, 1988), it is hypothesized that female players exposed to stereotype threat will experience more negative affective outcomes than women unexposed to this threat.

### *8.1.3. Moderators of Stereotype threat*

Finally, the present study investigates potential moderators of how women perform or experience stereotype threat in an evaluative gaming context. Given the situational nature of the stereotype threat mechanism (Spencer et al., 2015), including moderators could help explain why negative stereotypes in one domain may not affect two threatened identities in a similar manner (Logel et al., 2012; Spencer et al., 1999). Four stereotype threat moderating variables are reported on in this experimental study. First, identification with the domain of activity in which one is negatively stereotyped plays an important part in the stereotype threat process (Steele et al., 2002). As some women care more about digital games than others, it is possible that women who identify more strongly as a gamer are more susceptible to threat effects compared to women who do not attach much importance to this identity (Smith & White, 2001). This is not unsurprising because the self-esteem of high identifiers depends strongly on a positive group representation (Good et al., 2007; Steele, 1997). Gamer identification, however, has been reported as problematic in the case of female players. Although previous research has shown that women are little inclined to label themselves as gamers, this does not necessarily mean that they are not playing (Shaw, 2012a). Hence, because of women's low identity profile as gamers, it remains important to take into account their playing habits as a potential second moderating variable. A third moderator of stereotype threat is the degree of identification with the stereotyped group itself, i.e., women. Whilst some studies claim that individuals who strongly identify with their group are more vulnerable (Davies et al., 2005; Schmader, 2002), others posit that these people are more protected from the negative impact of stereotype threat (Chavous et al., 2008; Oyserman et al., 2001). Consequently, a close affinity with one's female identity can act as a buffer or, vice versa, as a vulnerability to stereotype threat in digital gaming (Good et al., 2007). Finally, this study considers women's trait competitiveness as a final potential moderator. As previously shown (Vermeulen et al., 2014), level of competitiveness affects how women think about their own and others' gaming skills. Whilst low competitive women endorse more stereotypical beliefs, high competitive women are less prone to negative gender dynamics. In this vein, it is predicted that gamer

identification, play habits, woman identification, and trait competitiveness modulate the relative effects of stereotype threat on performance and affective responses.

## **8.2. Methodology**

### *8.2.1. Participants*

Participants were recruited on site of NHTV Breda University of Applied Sciences and received a reward of 10 euros for their participation. Only women were selected considering the study's focus on the gaming experience of female players exclusively. All participants were ingenuous to the research purpose. One hundred women took part in the experiment of whom thirteen were excluded based on the manipulation check (cf. *infra*). The retained eighty-seven cases had a mean age of 22.28 years ( $SD = 3.23$ , min = 18, max = 38) and most were Caucasian (87.4%). On average, participants played digital games 3.60 hours per week ( $SD = 5.65$ , min = 0, max = 35). There were no statistical significant differences between experimental conditions for age or playing hours per week ( $p > .05$ ).

### *8.2.2. Material*

This study used the puzzle-platform game "Super Puzzle Platformer HD", originally designed by Andrew Morrish (2011) and remade by students Digital Entertainment of NHTV Breda University of Applied Sciences. The latter version of the game was further adapted to serve the research goals, for example by including game leaderboard scores. This caused participants to think they were competing against previous participants. However, player names and pictures linked to these leaderboard scores were manipulated beforehand to induce either (1) a Stereotype Neutral Condition (i.e., no gender information on leaderboard); (2) a Stereotype Boost Condition (i.e., majority of female names and avatars on leaderboard); or (3) a Stereotype Threat Condition (i.e., majority of male names and avatars on leaderboard). Figure 1 gives an overview of these three types of leaderboards of which one was randomly presented to each participant in the game. A similar method was successfully applied by Christy and Fox (2014).

Moreover, leaderboard scores were placed high enough as stereotype threat is mostly impelled by difficult, yet attainable, tasks (Steele, 1997).



**Figure 1. Leaderboards based on experimental condition: (1) Stereotype Neutral Condition – no gender information; (2) Stereotype Boost Condition - majority of female names and avatar pictures; (3) Stereotype Threat Condition - majority of male names and avatar pictures.**

### 8.2.3. Measures

#### *Moderators/covariates.*

Trait competitiveness was measured using the Revised Competitiveness Index ( $\alpha = .84$ ) consisting of fourteen 5-point Likert items (Houston et al., 2002). Gamer and woman identity were considered as the degree to which someone includes one of these social categories in the self. To measure this, the single-item measure Inclusion of In-group in the Self was used whereby participants had to choose the pair of circles that best represent their level of identification with the in-group from 1 (*no overlap*) to 7 (*high degree of overlap*) (Tropp & Wright, 2001). Playing habits were operationalized as the number of playing hours per week.

#### *Performance measures.*

Similar to Kellow and Jones (2008), expected performance was measured using the 7-point Likert item "Compared to other players, how well do you expect to be in the game?" anchored at 1 (*much worse*) to 7 (*much better*). To assess self-perceived performance, the 3-item Likert scale ( $\alpha = .87$ ) from Hoyt and Blascovich (2010) was used, ranging from -3 (*strongly disagree*) to 3 (*strongly agree*). An example item consisted of: "I feel that I did a good job playing the game". Objective performance was measured automatically by recording participants' highest score out of all games.

#### *Affective measures.*

The Mental Readiness Form Version 3 (MRF-3), a multidimensional competitive anxiety measuring-instrument, was used to assess cognitive anxiety (i.e., *not worried* - *worried*), somatic anxiety (i.e., *not tense* - *tense*), and self-confidence (i.e., *confident* - *not confident*) with a range of 1-11 (Krane, 1994). The 5-point Likert 10-item International Positive and Negative Affect Scale Short-Form (I-PANAS-SF) was used for specifying mood change in negative ( $\alpha_1 = .62$ ;  $\alpha_2 = .61$ ) and positive affectivity ( $\alpha_1 = .65$ ;  $\alpha_2 = .77$ ) before (i.e., time 1) and after the experiment (i.e., time 2) (Thompson, 2007). Examples of affective responses were "upset", "hostile", "attentive", or "active".



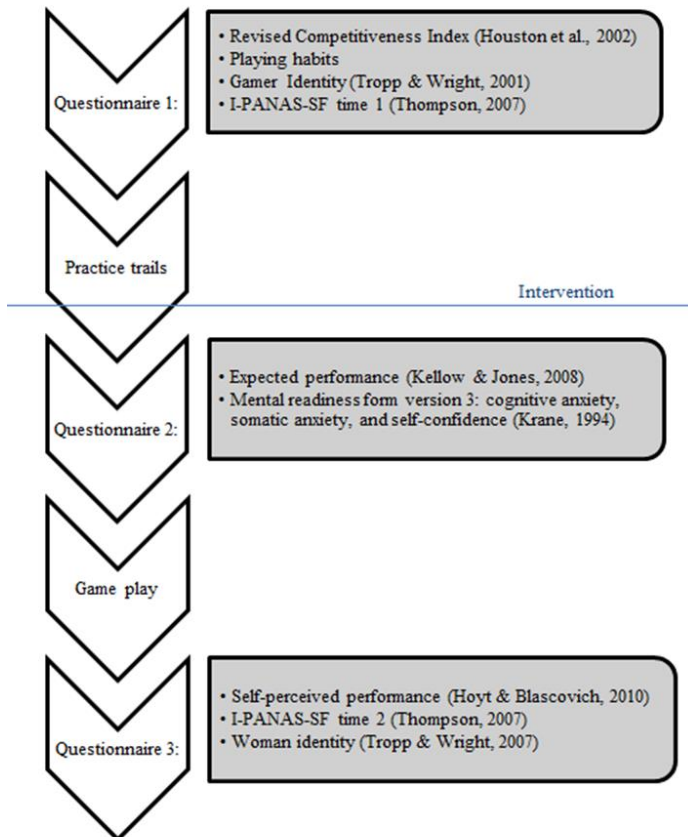
#### 8.2.4. Design

All participants ( $N = 87$ ) were randomly assigned to one of the three experimental conditions: (1) Stereotype Neutral Condition (i.e., no gender information on leaderboard;  $n_1 = 27$ ), (2) Stereotype Boost Condition (i.e., female-dominated leaderboard scores;  $n_2 = 28$ ), or (3) Stereotype Threat Condition (i.e., male-dominated leaderboard scores;  $n_3 = 32$ ). Between-subjects analysis of covariance (ANCOVA) was conducted with experimental condition as categorical predictor variable and trait competitiveness, gamer identity, woman identity, and play habits as additional continuous explanatory variables (i.e., covariates). These covariates were centered to improve interpretation. No main effects of covariates were considered because this went beyond the scope of this study. The main interest lied in the relationship of the experimental condition with the continuous explanatory variables on the outcome. Interpreting how the independent variable (i.e., experimental condition) relates to certain covariates is not unusual because it allows for a more accurate reflection of how the situation under study really is. Additionally, using ANCOVA avoids dichotomizing or making continuous variables categorical, which adds to statistical power (Grace-Martin, 2012, 2014). Statistically significant interactions were therefore further examined between experimental condition and covariates by comparing regression coefficients. This made it possible to observe the direction of a significant interaction term. Note that the Stereotype Threat Condition was taken as a reference group (coded as 0) in comparison with the Stereotype Neutral and Stereotype Boost conditions. Furthermore, no significant differences were found between experimental conditions on the covariates ( $p > .05$ ) avoiding sample selection bias.

#### 8.2.5. Procedure

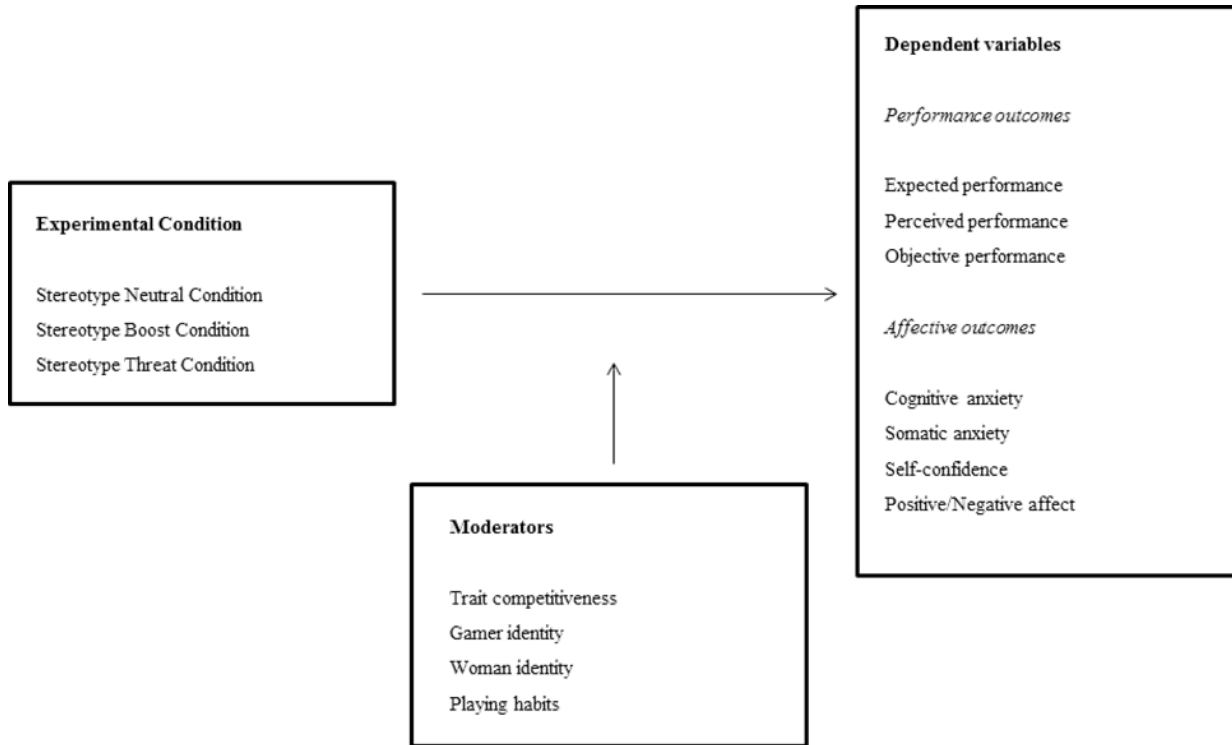
Participants were invited to fill out a first questionnaire asking about their degree of competitiveness, playing habits, gamer identity, and mood before entering the experiment room. Afterwards, they were instructed to play two sessions of the puzzle-platform game "Super Puzzle Platformer HD" in order to become acquainted with the game. It was then explained that the game leaderboards represented high

scores of 10 previous participants and that their goal was to outperform these others to win a prize (i.e., tablet PC). This was followed by a second questionnaire which asked participants about their expected performance and performance anxiety. Subsequently, each participant played the game for 20 minutes with the main goal to position themselves in the top-10 list. After playing, they were instructed to fill out a final questionnaire about their self-perceived performance, mood, and woman identity. Figure 2 illustrates the timeline of the experimental study including the order in which measures were taken before and after the intervention.



**Figure 2. Experiment timeline including used measures for each questionnaire.**

In what follows, results are classified in two sections. Firstly, findings related to performance measures are discussed with expected, objective, and perceived performance as dependent variables. And secondly, results on affective measures are described including cognitive anxiety, somatic anxiety, self-confidence, and mood as dependent variables. Each result section ends with a short summary of the main findings. Figure 3 summarizes the structure of this study's design showing which measures are being used as independent, dependent, and moderator variables.



**Figure 3. Study design.**

### **8.3. Results**

#### *8.3.1. Manipulation Check and Descriptive Statistics*

A manipulation check was essential to ensure the experiment's internal validity. Accordingly, at the end of this experiment, participants were asked whether they observed more male names, female names, or no names at all in the leaderboard score list when playing the game. Given that the manipulation depended on the awareness of leaderboard scores related to a certain gender, those who indicated a wrong answer in comparison to their experimental condition were excluded from further analysis (13% of the participants).

Concerning the descriptive statistics, Table 1 summarizes the mean scores and standard deviations of all moderators and dependent variables for the total sample and per experimental condition.

**Table 1****Descriptive Statistics for Dependent Variables and Covariates per Experimental Condition**

<b>Variable</b>	<b>General Mean (SD)</b>	<b>Experimental Condition</b>		
		<b>Stereotype Neutral Mean (SD)</b>	<b>Stereotype Boost Mean (SD)</b>	<b>Stereotype Threat Mean (SD)</b>
<i>Trait competitiveness (M)</i>	47.46 (7.29)	46.11 (7.12)	48.79 (6.31)	47.44 (8.19)
<i>Gamer identity (M)</i>	2.60 (1.60)	2.52 (1.72)	2.46 (1.53)	2.78 (1.58)
<i>Woman identity (M)</i>	5.91 (1.24)	6.11 (1.25)	6.00 (1.22)	5.66 (1.23)
<i>Playing habits (M)</i>	3.60 (5.65)	3.92 (4.49)	3.04 (5.46)	3.83 (6.73)
<i>Expected performance</i>	2.52 (1.17)	2.48 (1.25)	2.64 (1.45)	2.44 (.80)
<i>Perceived performance</i>	-.42 (1.34)	-.47 (1.34)	-.76 (1.32)	-.08 (1.32)
<i>Objective performance</i>	1899.09 (1333.13)	1914.78 (1414.35)	1920.36 (1485.50)	1867.25 (1152.82)
<i>Cognitive anxiety</i>	5.30 (2.37)	5.00 (2.56)	5.04 (2.58)	5.78 (2.00)
<i>Somatic anxiety</i>	5.57 (2.32)	5.15 (2.33)	5.36 (2.26)	6.13 (2.31)
<i>Self-confidence</i>	6.74 (1.79)	7.64 (1.97)	6.32 (1.83)	6.84 (1.57)
<i>Negative affect – T1</i>	5.63 (1.91)	5.93 (2.80)	5.32 (1.31)	5.66 (1.38)
<i>Negative affect – T2</i>	6.59 (2.42)	6.19 (2.32)	6.82 (2.00)	6.72 (2.84)
<i>Positive affect – T1</i>	15.79 (3.20)	15.78 (3.03)	14.93 (3.10)	16.56 (3.32)
<i>Positive affect – T2</i>	16.49 (3.89)	15.93 (3.58)	15.43 (4.35)	17.91 (3.38)

Note. T1 = time 1; T2 = time 2; M = moderator

### *8.3.2. Performance Measures*

Table 2 presents a series of ANCOVAs for expected performance, objective performance, and perceived performance. Figure 4 illustrates the statistically significant interactions in these ANCOVAs between experimental condition and moderating variables (Figures 4.1. to 4.2.). Below, each ANCOVA model is discussed in more detail including the direction of statistically significant effects.

**Table 2**  
**Analysis of Covariance for Expected, Objective, and Perceived Performance**

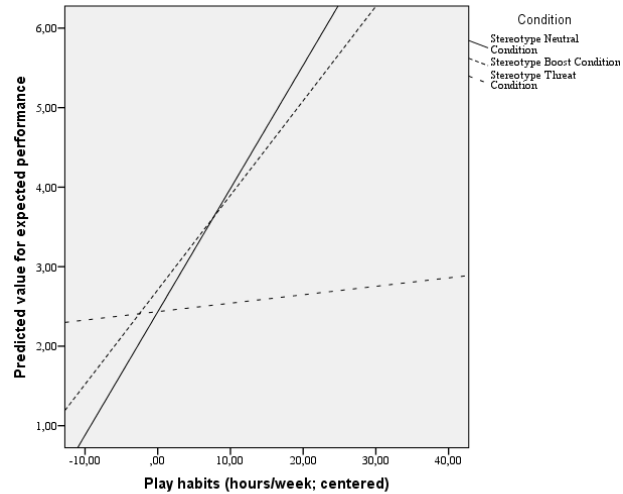
IV and Covariates	Performance Measures					
	Expected Performance		Objective Performance		Perceived Performance	
	F Values	Partial $\eta^2$	F Values	Partial $\eta^2$	F Values	Partial $\eta^2$
<i>Group</i>	.82	.02	1.71	.04	1.38	.03
<i>Competitiveness</i>	.08	<.01	1.73	.02	<b>4.77*</b>	<b>.06</b>
<i>Gamer Identity</i>	<b>4.41*</b>	<b>0.05</b>	<b>9.61**</b>	<b>.11</b>	2.98	.04
<i>Woman Identity</i>	.32	.004	1.20	.02	.49	.01
<i>Play Habits</i>	<b>4.75*</b>	<b>0.06</b>	<b>4.35*</b>	<b>.05</b>	.37	.01
<i>Group x Competitiveness</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>Group x Gamer Identity</i>	n/a	n/a	<b>3.33*</b>	<b>.08</b>	n/a	n/a
<i>Group x Woman Identity</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>Group x Playing Habits</i>	<b>3.78*</b>	<b>.09</b>	n/a	n/a	n/a	n/a

*Note.* Non-significant interaction terms were left out the model and thus were non-applicable (n/a); Bold numbers refer to statistical significant findings.

\* $p < .05$ ; \*\* $p < .01$



4.1.:



4.2.:

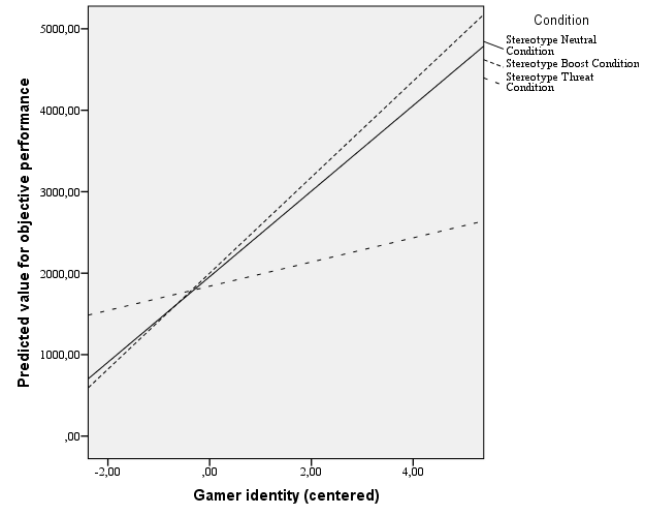


Figure 4. ANCOVAs of experimental condition by moderator (X) on dependent variable (Y): expected and objective performance.

*Expected performance.*

Statistically significant main effects of gamer identity and playing habits were found for expected performance compared with other players. However, there was also a significant interaction indicating that the slopes for the experimental groups depend on participants' playing habits. Figure 4.1. graphically presents this interaction showing the regression lines for each experimental condition. Regression coefficients showed that participants who play more in the Stereotype Neutral Condition ( $\beta = .29$ ,  $t[78] = 2.50$ ,  $p = .01$ ) expected to perform better than frequent players in the Stereotype Threat Condition. A similar, but marginally significant, interaction was found for people in the Stereotype Boost Condition ( $\beta = .23$ ,  $t[78] = 1.86$ ,  $p = .06$ ) compared to people in the Stereotype Threat Condition.

*Objective performance.*

Likewise, there were significant main effects of gamer identity and play habits for objective performance. The effect of gamer identity, however, depended on an interaction with experimental condition. Figure 4.2. depicts this interaction showing that the regression line of the Stereotype Threat Condition is less steep compared to the other experimental conditions. Comparing with the Stereotype Threat Condition, parameter estimates indicated that participants with a stronger gamer identity performed better in the Stereotype Neutral Condition ( $\beta = .30$ ,  $t[78] = 2.29$ ,  $p = .02$ ) and the Stereotype Boost Condition ( $\beta = .26$ ,  $t[78] = 2.09$ ,  $p = .04$ ).

*Perceived performance.*

Considering perceived performance, there was only a significant main effect of trait competitiveness. No statistical significant differences were found among experimental conditions nor were there significant interactions between covariates and experimental condition.

*Results synthesis: performance measures.*

Previous results implied that playing habits and gamer identity act as important moderators in determining participants' performance. Specifically, it was found that the positive effect of playing habits or gamer identity on expected and objective performance was less strong for women in the Stereotype Threat Condition compared to women in the Stereotype Neutral and Stereotype Boost conditions.

*8.3.3. Affective Measures**MRF-3.*

Table 3 reports a series of ANCOVAs for the MRF-3 consisting of cognitive anxiety, somatic anxiety, and self-confidence. Note that high ratings on these measures represent higher levels of anxiety or non-confidence. Figure 5 represents the statistically significant interactions (Figures 5.1. to 5.4.).

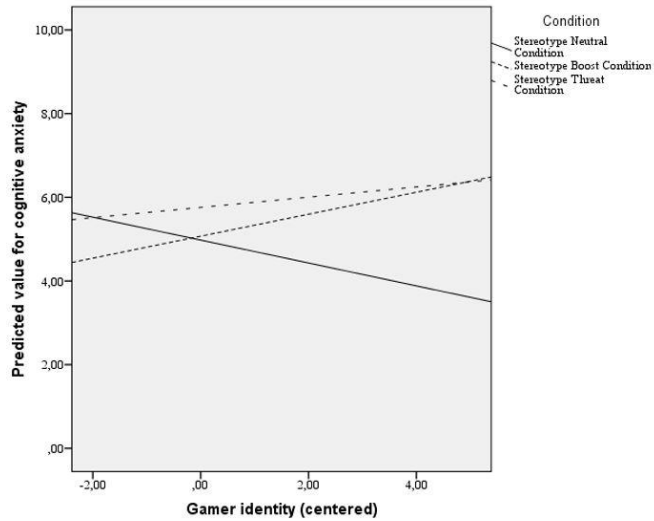
**Table 3****ANCOVA models for the MRF-3 including Cognitive Anxiety, Somatic Anxiety, and Self-Confidence**

<b>IV and Covariates</b>	<b>Affective Measures (Part I)</b>					
	<b>Cognitive Anxiety</b>		<b>Somatic Anxiety</b>		<b>Self-Confidence</b>	
	<b>F Values</b>	<b>Partial <math>\eta^2</math></b>	<b>F Values</b>	<b>Partial <math>\eta^2</math></b>	<b>F Values</b>	<b>Partial <math>\eta^2</math></b>
<i>Group</i>	<b>3.15*</b>	<b>.08</b>	2.62	.06	<b>3.82*</b>	<b>.09</b>
<i>Competitiveness</i>	2.12	.03	.01	<.01	<b>5.01*</b>	<b>.06</b>
<i>Gamer Identity</i>	<b>5.05*</b>	<b>.06</b>	1.26	.02	.41	.01
<i>Woman Identity</i>	1.07	.01	<b>4.62*</b>	<b>.06</b>	.51	.01
<i>Playing Habits</i>	<b>8.38**</b>	<b>.10</b>	.09	<.01	.03	<.01
<i>Group x Competitiveness</i>	n/a	n/a	<b>3.18*</b>	<b>.08</b>	n/a	n/a
<i>Group x Gamer Identity</i>	<b>4.59**</b>	<b>.11</b>	n/a	n/a	<b>4.35**</b>	<b>.10</b>
<i>Group x Woman Identity</i>	n/a	n/a	n/a	n/a	n/a	n/a
<i>Group x Play Habits</i>	<b>5.05**</b>	<b>.12</b>	n/a	n/a	n/a	n/a

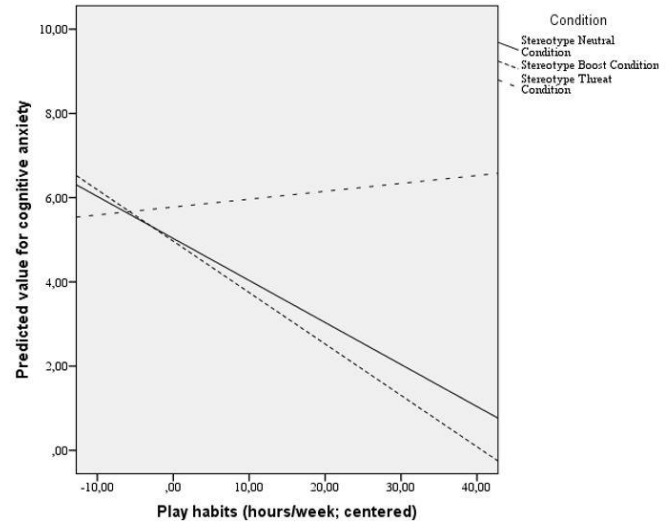
*Note.* Non-significant interaction terms were left out the model and thus were non-applicable (n/a); Bold numbers refer to statistical significant findings.

\* $p < .05$ ; \*\* $p < .01$

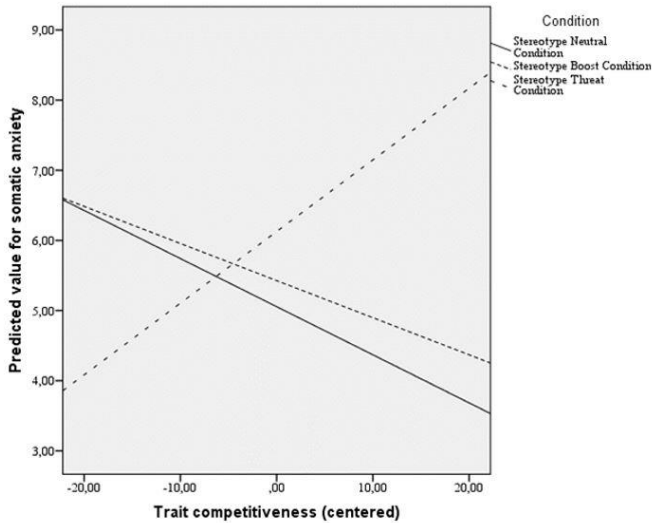
### 5.1.:



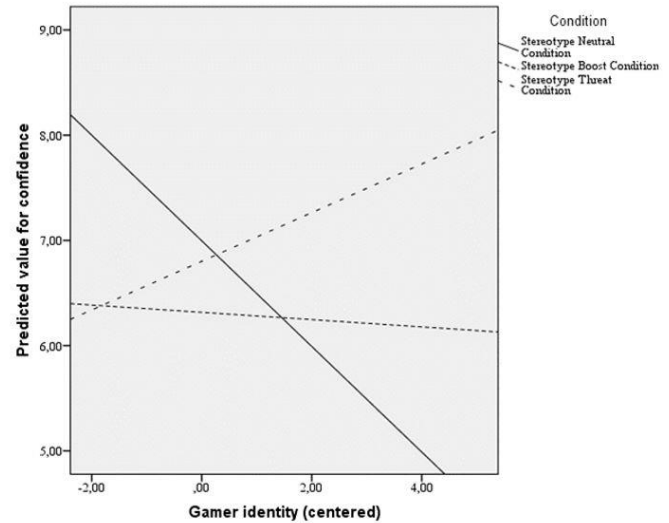
### 5.2.:



5.3.:



5.4.:



**Figure 5. ANCOVAs of experimental condition by moderator (X) on dependent variable (Y): cognitive anxiety, somatic anxiety, and self-confidence.**

*Note.* High rating on the DVs represent higher levels of anxiety or non-confidence

For cognitive anxiety, main effects of experimental condition, gamer identity, and playing habits were statistical significant. However, these effects were modulated by interactions of experimental condition with gamer identity and playing habits. Figures 5.1. and 5.2. display these significant interaction terms. Regression coefficients pointed out that highly identified gamers worry more in the Stereotype Boost Condition ( $\beta = .48$ ,  $t[76] = 2.48$ ,  $p = .02$ ) than in the Stereotype Threat Condition. A reversed pattern was found for the interaction play habits and experimental condition: participants who play more frequently seem to worry less in the Stereotype Boost Condition ( $\beta = -.58$ ,  $t[76] = -3.16$ ,  $p < .01$ ) compared to the Stereotype Threat Condition. Additionally, when taking the Stereotype Neutral Condition as a comparison, similar significant differences were discovered between Stereotype Neutral and Stereotype Boost conditions. Results indicated that highly identified gamers worry more in the Stereotype Boost Condition ( $\beta = .56$ ,  $t[76] = 2.96$ ,  $p < .01$ ) than in the Stereotype Neutral Condition. Reversely, frequent players worry less in the Stereotype Boost Condition ( $\beta = -.49$ ,  $t[76] = -2.29$ ,  $p = .03$ ) compared to the Stereotype Neutral Condition.

A main effect of woman identity was found for somatic anxiety. The interaction between experimental condition and trait competitiveness reached significance, showing that competitive participants felt less tension in Stereotype Neutral Condition ( $\beta = -.27$ ,  $t[78] = -1.98$ ,  $p = .05$ ) and Stereotype Boost Condition ( $\beta = -.28$ ,  $t[78] = -2.15$ ,  $p = .04$ ) compared to the Stereotype Threat Condition. Figure 5.3. depicts this interaction revealing an opposite pattern between experimental conditions. While an increase in trait competitiveness predicts a stronger somatic anxiety for people in the Stereotype Threat Condition, highly competitive people in Stereotype Boost and Neutral conditions show less somatic anxiety.

Regarding self-confidence, there were significant main effects of experimental condition and competitiveness. However, results were modulated by a statistical significant interaction between condition and gamer identity. As seen in Figure 5.4., highly identified gamers in the Stereotype Threat Condition had less confidence in their skills than

highly identified gamers in the Stereotype Neutral Condition and Stereotype Boost Condition. Regression coefficients, however, only confirmed a significant difference between gamers in the Stereotype Threat Condition compared with the Stereotype Neutral Condition ( $\beta = -.43, t[78] = -2.91, p < .01$ ).

#### *I-PANAS-SF.*

Finally, changes in positive or negative mood were analyzed. Given that there were two time stamps for the I-PANAS-SF, time 1 was added as an additional covariate in the ANCOVA models (see Table 4). Accordingly, time 1 had a significant main effect on the ratings of time 2 for both negative affect and positive affect. No other statistical significant results were found for positive affect. For negative affect, there were significant main effects of trait competitiveness and gamer identity. The effect of gamer identity on negative affect was modulated by a significant interaction with experimental condition however. Parameter estimates showed that highly identified gamers experienced a higher increase of negative affect in the Stereotype Threat Condition compared to the Stereotype Neutral Condition ( $\beta = -.38, t[77] = -2.66, p = .01$ ) and Stereotype Boost Condition ( $\beta = -.26, t[77] = -1.96, p = .05$ ). Figure 6 displays this pattern showing that the increase in negative affect is much greater for highly identified gamers in the Stereotype Threat Condition.

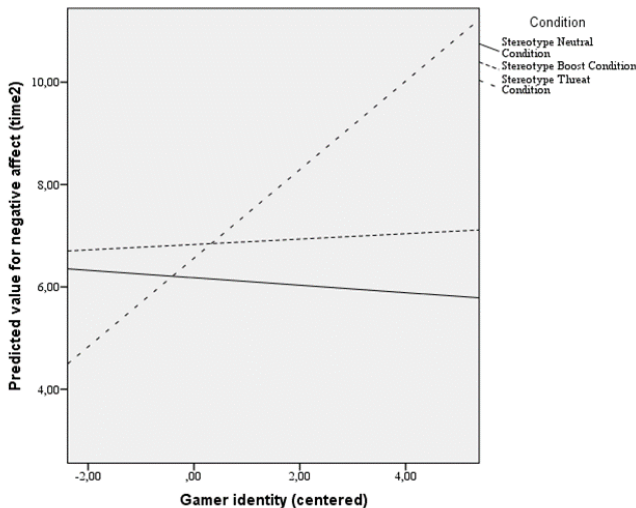


**Table 4**  
**Analysis of Covariance for I-PANAS-SF**

IV and Covariates	Affective Measures (Part II)			
	Negative affect – T2		Positive affect – T2	
	F Values	Partial $\eta^2$	F Values	Partial $\eta^2$
<i>Group</i>	2.49	.06	2.20	.05
<i>Competitiveness</i>	<b>5.35*</b>	<b>.07</b>	<.01	<.01
<i>Gamer Identity</i>	<b>4.08*</b>	<b>.05</b>	.33	<.01
<i>Woman Identity</i>	.04	<.01	1.09	.01
<i>Play Habits</i>	2.46	.03	<.01	<.01
<i>Negative affect – T1</i>	<b>6.85**</b>	<b>.08</b>		n.s.
<i>Positive affect – T1</i>		n.s.	<b>17.54***</b>	<b>.18</b>
<i>Group x Competitiveness</i>	n/a	n/a	n/a	n/a
<i>Group x Gamer Identity</i>	<b>3.91*</b>	<b>.09</b>	n/a	n/a
<i>Group x Woman Identity</i>	n/a	n/a	n/a	n/a
<i>Group x Play Habits</i>	n/a	n/a	n/a	n/a

*Note.* Non-significant interaction terms were left out the model and thus were non-applicable (n/a); Bold numbers refer to statistical significant findings; T1 = time 1; T2 = time 2.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$



**Figure 6. ANCOVA plot of negative affect by experimental condition.**

*Results synthesis: affective measures.*

In accordance with performance measures, previous results on affective outcomes indicated that gamer identity and playing habits were crucial moderators in determining the effect of stereotype threat on female players. Additionally, affective responses were modulated by individuals' trait competitiveness. It was concretely found that higher ratings on gamer identity, playing habits, and trait competitiveness produced more anxiety in the Stereotype Threat Condition, while an increase in these covariates suggested less anxiety for women in the other conditions. When considering mood change after the experiment, it was discovered that highly self-identified gamers in the Stereotype Threat Condition indicated a higher increase in negative affect compared to these gamers in the Stereotype Neutral and Stereotype Boost conditions.

**8.4. Discussion**

This study examined how stereotype threat affects the gaming experience of women in stereotype-enhancing, -reducing, or neutral situations with an emphasis on performance measures and affective outcomes. Concretely, it was hypothesized that woman players exposed to threat will perform worse as well as experience more negative affect than woman players unexposed to threat. Although threat manipulation was carried out subtly through leaderboard scores, clear evidence was found that the mechanism of stereotype threat taps into women's playing experience when considering the moderators gamer identity, play habits, and trait competitiveness. The current study gained more insight in relationships between experimental condition and decisive moderators, allowing us to paint as complete a picture as possible about how stereotype threat operates in the context of digital games.

When considering expected performance, results showed that avid players in the Stereotype Threat Condition expected to perform worse compared to these players in Stereotype Neutral and Stereotype Boost conditions. This indicates that women believe less in their playing skills when being confronted with a stereotype-enhancing situation.

Moreover, when considering the participants' objective performance, results revealed that strongly identified gamers scored lower in the Stereotype Threat Condition compared to Stereotype Neutral and Stereotype Boost conditions. This is consistent with earlier research showing that individuals are more vulnerable to threat in stigmatized domains that are more closely related to their sense of self (Smith & White, 2001; Steele et al., 2002). However, regarding perceived performance, no distinct threat effects were found on women's game experience. A possible explanation for this could be that stereotyped individuals such as female players may not admit worse performance and thus avoid lending credence to the stigma (Burns & Friedman, 2012).

Findings on affective responses revealed that cognitive anxiety (i.e., worrying) differed among women who highly identified as gamer and those who play more frequently. This confirmed the assumption that playing games does not necessarily mean women label themselves as gamers (De Grove et al., 2015; Shaw, 2012). While frequent players in the Stereotype Boost Condition were less worried about the game competition than in the Stereotype Threat Condition, an opposite pattern was found for highly identified gamers. A possible explanation could be that there is more at stake for participants with a strong gamer identity when competing against similar in-group members than when playing against "superior" male gamers as a dominant social construction (Nakamura, 2012). Hence, in case of underperformance, female gamers are more likely to suffer from identity damage when demands were manageable instead of exceeding personal resources (Major & O'Brien, 2005). Future research should explore this claim more thoroughly.

Concerning somatic anxiety (i.e., feeling tense), evidence was found suggesting the existence of a significant interaction between experimental condition and trait competitiveness. Specifically, highly competitive women felt more tense in the Stereotype Threat Condition, while a reversed pattern was shown for highly competitive women in the Stereotype Neutral and Stereotype Boost condition. This is a rather surprising finding as prior research suggested that mainly low competitive women had a troubled skill perception when playing

against men (Vermeulen et al., 2014). However, it should be noticed that no threat intervention was induced in the aforementioned study. Hence, assuming that competitive people have a stronger urge to succeed in particular tasks (Houston et al., 2002), it could be possible that highly competitive women encountered additional tension in case of threat-inducing competition.

Furthermore, the extent to which participants identified themselves as being gamers also affected their levels of self-confidence before game competition. Results revealed that high identifiers felt less confident when they had to compete in the Stereotype Threat Condition compared to the Stereotype Neutral Condition. Although a similar pattern was suggested compared to high identifiers in the Stereotype Boost Condition, statistical significance was not reached. Similarly, when game competition ended, it was found that there was a much greater increase in negative affect for highly identifiers in the Stereotype Threat Condition compared to Stereotype Neutral and Stereotype Boost conditions. This suggests that self-identified gamers are more likely to experience threat in game contexts wherein their gender identity is activated and judged against male playing norms. Prior research already indicated that stereotype threat impairs experiences of stereotyped identities who enclose identification with the domain of activity into their repertoire of category memberships (Keller, 2007). From a social identity perspective, this means that people who are highly committed to their group membership are more likely to respond to threats towards their in-group (Ellemers et al., 2002).

Whereas there were modulating effects of gamer identity, play habits, and trait competitiveness, woman identity was no significant moderator for performance or affective threat outcomes. This is dissimilar from earlier research showing that identification with the stereotyped identity moderated stereotype threat effects by either making subjects more vulnerable to (Schmader, 2002) or less affected by (Chavous et al., 2008) inhibiting outcomes.

Mostly, when taking into account the moderators, performance and affective outcomes differed for women in the Stereotype Threat

Condition compared to both the Stereotype Neutral Condition and the Stereotype Boost Condition. Except for cognitive anxiety, no significant differences were found between Stereotype Neutral and Stereotype Boost conditions. This is an interesting finding as it points out that female role modeling does not guarantee improved performance or affective responses. This contradicts previous threat research in other domains such as academic learning (Taylor & Walton, 2011) or entrepreneurship (Gupta et al., 2008). A possible explanation could be that the game leaderboard scores were generally perceived as high, nullifying a possibly positive effect of positive female role models. Thus stereotype boosting in digital gaming operates in a more intricate fashion as previously expected and requires further research.

A limitation of this study was the exclusive focus on one stereotype whereas social reality produces multiple stigmas within a complex web of gendered, racial, and sexual relationships. Follow-up research could deploy a more holistic perspective of identity threat such as the inclusion of an intersectionality perspective stressing the interconnectedness between gender, race, and class (e.g., Shields, 2008). The research design could also be implemented in other game environments to enhance the impact of this study. Moreover, it must be noted that experimental approaches construct an artificial situation. Other research methods should be considered such as survey studies to advance generalizability or in-depth ethnographical studies to capture a variety of identity threats. The reliabilities of the I-PANAS-SF scales were also quite low ( $\alpha > .61$ ) whereby results should be interpreted with caution.

Despite these limitations, the present study generally indicated that stereotype threat is disrupting thoughts, feelings, and actions of women playing digital games. It showed that the mere manipulation of game leaderboard scores was sufficient to demonstrate detrimental effects of a negative stereotype; that is, women as less literate than men in playing games. Notwithstanding, this work also showed that some women are more susceptible to threat than others. Women who highly self-identified as gamer, for example, were impacted by threat in terms of objective performance and emotional wellbeing (i.e., less confidence, increased negative affect). Ironically, the more women's

self-worth was contingent upon gamer identity, the more vulnerable they became to threat. This could partly explain why there is such a large discrepancy between the degree to which women play games and to which they take up a gamer identity (Shaw, 2012a). Discarding a gamer identity could then serve as a “defense mechanism” against stigma, making female players impervious to attacks against their selves. While some studies claim this may be beneficial in the short term (Major & Schmader, 1998), it remains problematic in the longer term as it could lead to women eventually abandoning the domain of digital games (Woodcock et al., 2012). This would be unfortunate given that mastering gaming skills contributes to positive attitudes towards technology and thus in aspiring a career in high-tech computer based industries (Cooper, 2006). The absence of a female audience then serves the reproduction and maintenance of restrictive ideas such as women not being interested or competent in digital gaming and technology in general. Hence, it remains important to negotiate and re-construct negative stereotyping about women as a social group and their relation to games in the pursuit of gender-based equality.

## PART II

### CAN CARDIAC ACTIVITY BE MODULATED BY THREAT EFFECTS OF FEMALE PLAYERS ON PERFORMANCE AND CHALLENGE PERCEPTION?

#### **Contextualization Study V**

**T**he present study is based on the same sample as study IV and therefore also situated in chapter eight. However, compared with the previous study, 17 participants are removed from analysis with  $n = 70$  instead of  $n = 87$ . This is mostly due to the difficulties encountered with in employing psychophysiological research methods. Foremost, there were some issues with the used equipment as the signal did not always accurately processed heart rate data of participants. Also, when adequately collected, we were sometimes confronted with uncommon data streams and removed the cases with an abundance of artifacts in heart rate signaling. Nevertheless, because of careful attention paid to pre-processing, we believe that this work offers a thoroughly and valid view on the interplay between threat perceptions and physiological responses of women playing games. No research abstract is provided as the write-up of this study was bound to ICA preconference's short paper format.

**Keywords Study V**

Digital games; Experiment; Female players; Gender; Social Identity; Stereotype Threat

**Reference Study V**

Vermeulen, L., Núñez Castellar, E., Janssen, D., Calvi, L., & Van Looy, J. (2016, June). *Can cardiac activity be modulated by threat effects of female players on performance and challenge perception?* Paper accepted for presentation at the International Communication Association 2016 pre-conference: "Just Games? Considering and Celebrating How Digital Games can be More than Entertainment", Fukuoka, Japan.



## 8.5. Introduction

Over the past 20 years, social-psychological research has provided compelling evidence that the mechanism of stereotype threat is present in various domains such as academics (Taylor & Walton, 2011), organizational settings (Walton, Murphy, & Ryan, 2015), and health (Jones et al., 2013). The domain of digital games remains rather unexplored, however. Women playing games can be particularly considered as targets of stereotype threat given their history of marginalization and rejection in game culture (Consalvo, 2012; Jenson & de Castell, 2013). Concretely, stereotype threat occurs in situations in which stigmatized individuals are reminded of the possibility of confirming negative stereotypes about their group resulting in performance deficits (Spencer et al., 1999; Steele & Aronson, 1995; Steele et al., 2002). Our previous research (Vermeulen, Núñez Castellar, Janssen, Calvi, & Van Looy, 2016; Vermeulen et al., 2014) provided some initial evidence of how this mechanism impairs the experience of female players in terms of heightened emotional strain and troubled skill perception based on self-report measurement. Whereas these patterns are critical in understanding how stereotype threat operates in gaming, more research is needed on how physiological responses are modulated by female players' decrements during game play.

A major advantage of performing physiological measurement is that physiological assessment is not susceptible to social desirable answers or other biases originating from subjective data (Tran et al., 2007). Physiological assessment has the ability of giving direct information about the internal state of individuals without interfering the performance or research task as instructed to participants (Croizet et al., 2004). Moreover, while data logging is a solid method for measuring objective performance, it does not provide information on how emotional processes reside within individuals (Ciuk et al., 2015). Mapping these underlying processes is, however, important when measuring stereotype threat as this mechanism is closely tied to anxiety – or, put differently, stress for confirming negative group stereotypes (Ben-Zeev et al., 2005).

Few studies have measured stereotype threat in terms of biological stress responses during performance (e.g., Croizet et al., 2004; Vick et al., 2008). In these studies, it has been shown that cardiovascular assessment is particularly a viable measure for mental load arising in conditions that produce stereotype threat. Croizet et al. (2004) demonstrated that the heart rate variability (HRV) of members of devalued groups decreased due to disruptive mental load. This is self-evident given that HRV has shown to be sensitive to cognitive processing demands (Luft, Takase, & Darby, 2009) resulting from brain activity that regulates increased metabolic demands (Chalabaev, Sarrazin, & Brisswalter, 2013).

Up until now, no study has investigated the underlying cardiovascular responses of female players during threat-induced situations. The present study fills this gap and combines it with self-reporting and log data measurements in a controlled experimental set up. Concretely, we investigated how heart rate changes correlate with the objective performance and self-reported challenge perceptions of women under threat. Stereotype threat was induced by means of reinforcing stereotypical information suggesting that women are less competent than men at playing (i.e., stereotype threat condition) versus the effects of countering this stereotype (i.e., stereotype boost condition). A control condition (i.e., neutral condition) without gender information has also been implemented to serve as comparison.

## **8.6. Method**

### *8.6.1. Participants and Procedure*

Complete physiological data were collected of 70 female college students with a mean age of 22.24 ( $SD = 3.28$ ). These women played on average 3.18 hours per week. Participants were instructed to play a puzzle-platform game "Super Puzzle Platformer HD" for 20 minutes and were told that they had to outperform previous players in order to win a price. Leaderboard scores of fictitious other players were manipulated to induce either (1) a Stereotype Neutral Condition (i.e., no gender information on leaderboard,  $n = 23$ ); (2) a Stereotype Boost Condition (i.e., majority of female names and avatars on leaderboard,  $n = 22$ );

or (3) a Stereotype Threat Condition (i.e., majority of male names and avatars on leaderboard,  $n = 25$ ).

### 8.6.2. Measures

Demand evaluation resource scores (DRES) were calculated to investigate whether participants perceived playing the game as a threat or challenge (Moore, Vine, Wilson, & Freeman, 2012). Based on a Likert scale ranging from *not at all* (1) to *extremely* (6), participants had to fill out a questionnaire asking about how demanding they expected the game competition would be and to what extent they possessed the resources to deal with the task. Similar to a study by Vine et al. (2013), demands were subtracted from resources with scores between -5 to +5. Women who indicated to have sufficient resources to cope with the demands (i.e., high DRES) were more challenge-oriented, while women who specified to not possess the required resources (i.e., low DRES) were more threat-oriented. Objective performance was recorded automatically by logging participants' highest score out of all games.

Heart rate (HR) was measured by means of a finger photoplethysmographic sensor attached to the left hand, which participants did not use during the experiment. The HR data were processed using the R package RHRV (Rodríguez-Liñares et al., 2011) in which artifacts were removed and time domain analysis was conducted. Baseline corrections were performed using the last 2 minutes of HR data of participants watching a movie (*For the Birds* [Pixar, 2000]) prior to game playing. In order to quantify HRV changes we focused on the most important and widely used time domain measures in physiological research: SDNN and r-MSSD (Acharya, Joseph, Kannathal, Lim, & Suri, 2006). The former refers to the standard deviation of intervals between successive heart beats, while r-MSSD concerns the root mean square of successive difference of intervals (Mendez et al., 2013). Compared to SDNN, r-MSSD is a short-term variation of heart rate and has been applied as a measure of respiratory sinus arrhythmia, i.e., the rhythmic oscillation in HR produced by respiration (Berntson, Quigley, & Lozano, 2007).

### 8.6.3. Analysis

Table 1 reports the main descriptive statistics for the dependent variables. Multivariate regression analysis was performed with condition (i.e., dummy-coded variables; threat condition as reference group) and heart rate variability (i.e., SDNN and r-MSSD; centered) as predictors for objective performance and self-reported DRES. An interaction between condition and heart rate was added in order to explore how heart rate changes are related with the effects of condition on outcome variables.

**Table 1**  
**Descriptive statistics for dependent variables: means scores and standard deviations**

Variable	Experimental Condition			
	General Mean (SD)	Stereotype Neutral Mean (SD)	Stereotype Boost Mean (SD)	Stereotype Threat Mean (SD)
<i>Demand evaluation resource scores (DRES)</i>	-.37 (1.66)	-.09 (2.13)	-.73 (1.28)	-.32 (1.46)
<i>Highest score</i>	1852.21 (1285.04)	1977.91 (1480.99)	1747.05 (1201.60)	1829.12 (1203.26)

## 8.7. Results

Regression coefficients are reported in Table 2. Note that we only report on statistically significant regression models ( $p < .05$ ). For DRES, it was shown that SDNN had a statistically significant negative effect on the challenge perception of women in the Stereotype Threat Condition ( $b = -.011$ ). Thus, higher SDNN scores are related to lower DRES, which refers to a higher threat perception instead of challenge. Both interaction terms were also significant, showing that DRES depended on the relation between condition and SDNN scores. Concretely, when

looking at Figure 1, it becomes clear that there is a more positive effect of SDNN scores on DRES for women in the boost condition than women in the threat condition, making it more likely that SDNN is related to a higher challenge orientation for women in the boost condition. A similar pattern was found for women in the neutral condition in which higher SDNN scores were associated with a higher challenge orientation instead of threat orientation.

For objective performance, there was only a statistically significant interaction term between the Stereotype Neutral Condition and r-MSSD. Figure 2 illustrates this effect, showing a reversed pattern for women in the threat condition compared to women in the neutral condition and (although not statistically significant) boost condition. Whereas higher r-MSSD values are associated with higher performance for the latter groups, this relation was not observed for women under stereotype threat.

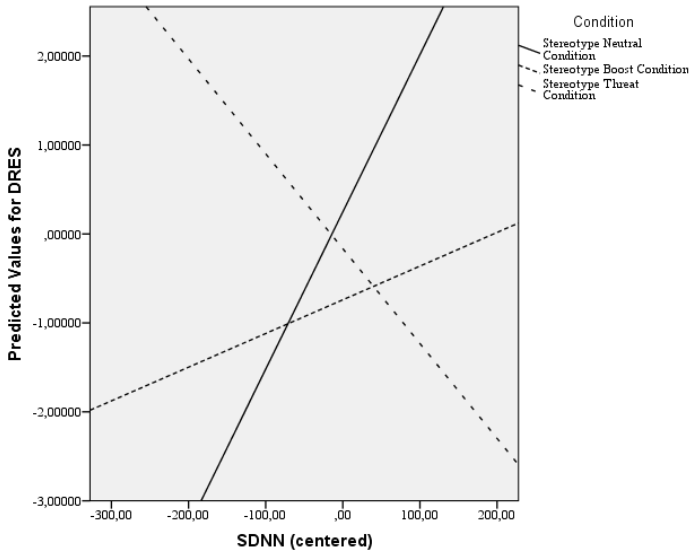
**Table 2****Multivariate regression for demand evaluation resource scores (DRES) and objective performance**

<b>DRES</b>	<b>b</b>	<b>Std. Error</b>	<b>p-value</b>
Intercept	-.165	.325	.612
Stereotype boost	-.575	.468	.224
Stereotype neutral	.414	.483	.395
SDNN	<b>-.011</b>	<b>.005</b>	<b>.05</b>
Boost * SDNN	<b>.014</b>	<b>.007</b>	<b>.037</b>
Neutral * SDNN	<b>.028</b>	<b>.009</b>	<b>.003</b>

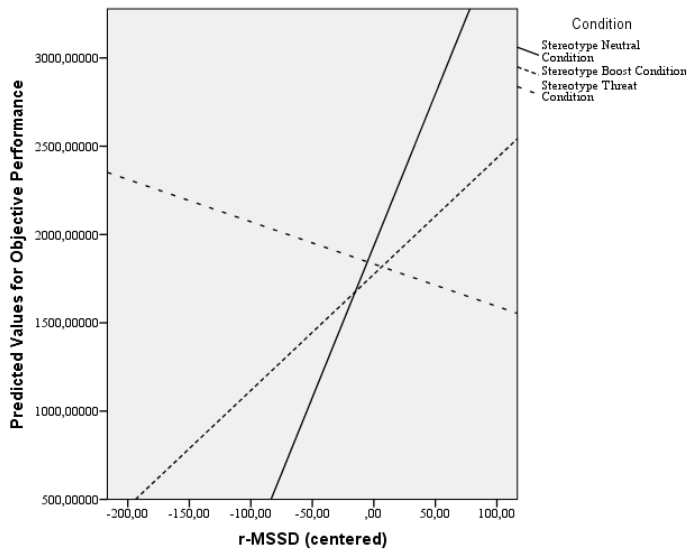
  

<b>Objective performance</b>	<b>b</b>	<b>Std. Error</b>	<b>p-value</b>
Intercept	1832.708	251.981	<.001
Stereotype boost	-57.645	368.681	.879
Stereotype neutral	103.071	364.439	.778
r-MSSD	-2.395	4.845	.623
Boost * r-MSSD	8.974	6.491	.172
Neutral * r-MSSD	<b>19.584</b>	<b>9.162</b>	<b>.036</b>

*Note.* Scores in bold represent statistical significant results; b = unstandardized coefficient



**Figure 1. Demand resource evaluation scores (DRES) by SDNN for the three experimental groups.**



**Figure 2. Objective performance (highest score) by r-MSSD for the three experimental groups.**

## 8.8. Discussion

The current study showed that a higher HRV was generally associated to more positive effects for women in non-stereotyped conditions compared to women under threat. Specifically, a “constructive” challenge perception and higher performance was associated with higher HRV, in line with previous studies, stating that high HRV during mental load denotes a good cardiac adaptability and thus strong situational coping skills (Appelhans & Luecken, 2006).

However, although non-significant for objective performance, we found reversed patterns for women in the threat condition showing that a high HRV was associated with a more “destructive” threat perception and worse performance. A possible explanation for this rather surprising trend could be that there is a relation between arousal and task outcomes as described by the Yerkes-Dodson law (Yerkes & Dodson, 1908). Concretely, this theorem states that higher arousal levels lead to enhanced performance (as shown in the non-stereotyped conditions) until a critical threshold of arousal is exceeded causing impairments (Keller, 2007). In fact, it is this underlying process that defines the core of a stereotype threat mechanism in that individuals under threat feel an additional physiological pressure apart from the task possibly weakening their objective performance and skill perception.

Finally, it should be noted that objective performance was mainly associated with changes in the r-MSSD measures and subjective self-reporting with changes in the SDNN measures. Previous research showed that, after time-frequency transformations, SDNN correlates with low frequency and RMSSD with high frequency power (Wang & Huang, 2012). r-MSSD is thought to represent parasympathetically mediated HRV, while SDNN measures are representative for fluctuations in the sympathetic nervous system reflecting stress-regulation (Appelhans & Luecken, 2006). Further research is needed to examine whether and how changes in these two measures point to different aspects of gaming experience.



## CHAPTER NINE

### TRACING FEMALE GAMER IDENTITY. AN EMPIRICAL STUDY INTO GENDER AND STEREOTYPE THREAT PERCEPTIONS

#### **Contextualization Study VI**

**T**he final empirical study delves into women's gamer identity and how threat experiences (beyond other crucial factors) are related to this self-labelling as gamer. It tries to connect our two fundamental concepts of identity and stereotyping in illuminating women's experiences of gendered practices in digital gaming. Drawing on a large-scale questionnaire for women playing games, inquiries are made into common patterns of identification processes from a social identity approach. Indeed, whilst it is prevalent in audience research to see media as mediators for identity work, playing digital games itself can be the object around which social identities are built (De Grove, 2015). Moreover, though acknowledged as a social construction, we are similarly interested in approaching female identity from a social-psychological standpoint. By examining the self through the lens of social identity theory, we succeed in examining how female players categorize, classify, or name their selves in relation to other social categories.

**Abstract Study VI**

Women often deem to be outside game culture resulting in a low gamer identity profile. A nuanced and detailed examination of how gender identity and threatening experiences tap into their play practices has hitherto been lacking however. The present study fills this gap by examining how female players express a gamer identity and how this relates to perceptions of threat and stigmatization. Based on a large-scale survey directed at female players, a statistical model is specified taking into account how respondents attribute a gamer label to their self-concept. Results suggest that the cognitive, evaluative, and affective dimensions of female identity predict gamer identification in distinct ways. Moreover, rather surprising, perceptions of stereotype threat and stigma consciousness are positively related to women's gamer identification. An opposite relation is however observed for women's awareness of being stigmatized by male players.

**Keywords Study VI**

Digital games; Gamer identity; Gender; Social constructionism; Social identity; Women

**Reference Study VI**

Vermeulen, L., Van Looy, J., & Van Bauwel, S. (2016, June). *"I am not a gamer"*. An empirical study on women as self-identified digital gamers. Accepted for presentation at the International Communication Association conference 2016: Communicating with Power, Fukuoka: Japan.

[Under review in *Computers in Human Behavior*]

## 9.1. Introduction

Digital games have a long history of being constructed as a male medium (Fron et al., 2007). This has led to the cultural belief that gamer identity is intrinsically tied to masculinity, creating a relatively intimidating environment for players who do not meet this criterion (Scharkow et al., 2015). The recent gamergate controversy, a harassment campaign using the Twitter hashtag #GamerGate, is a clear example of a conservative game culture trying to reestablish a male-dominated gamer identity through the exclusion of non-traditional players. The increasing presence of female players and feminist critics is in particular met with resistance pushing femininity outside digital gaming (O'Rourke, 2014). Accordingly, it is likely that such threatening and stigmatizing experiences are causing female players to reject labeling themselves as gamers (e.g., Cote, 2015; Taylor, 2008). This disavowal of a gamer identity can have serious implications as digital games are important tools in attaining computer literacy and thus in pursuing a potential career in high-tech computer based industries (Cooper, 2006).

However, to our knowledge, no study has empirically investigated why women do or do not attribute a gamer identity to their selves and how this relates to their experiences with threat and stigma. The present study aims to fill this gap by focusing on two potential important mechanisms underlying women's gamer identification. Firstly, attention is given to how women's gamer identity is intertwined with their gender identity. In doing so, female players' gender is not approached as a binary construct referring to either being man or woman (i.e., sex), but is defined as a multidimensional construct based on a social identity perspective (Cameron, 2004; Tajfel & Turner, 1986). This multidimensionality consists of cognitive, evaluative, and affective components of womanhood, allowing us to inquire into their distinct effects on gamer identity. Secondly, perception of stereotype threat and stigma consciousness are taken into account as essential determinants of women's gamer identity. Although previous studies have indicated that threatening situations can affect skill perception, well-being (Vermeulen et al., 2014), and performance (Vermeulen et al., 2016) of female players, little is known about how this affects

women's inclination to identify as a gamer. Moreover, most empirical studies approach threat in experimental settings with domain identity (i.e., identification with the studied domain) as a moderating or control variable (Steele et al., 2002). This large-scale survey study, however, explores the relative importance of threat perception and gender identity as determinants for gamer identification<sup>15</sup> with an exclusive focus on female playing audiences.

## **9.2. The Relation Between Female and Gamer Identities**

### *9.2.1. "Being" Female and Gamer*

To better understand women's low identity profile as a gamer, it is important to perceive both gamer and gender identities as social constructs, implying that they are defined and (re)articulated within interpersonal and cultural contexts (Moghaddas et al., 2012). We are constantly "doing" identity since it is formed in continuous interaction and recurrently used to reinforce the "essentialness" or "naturalness" of a particular identity (West & Fenstermaker, 1995). In the case of gamer and gender identities, this means that they become so incorporated through repetition that an individual will feel she "is" a woman and/or gamer instead of acknowledging the underlying social practices (Brickell, 2006). Important is that these social practices draw deeply upon cultural coding and modalities of power suggesting what is appropriate for members (Hall, 1996). In this rationale, it is argued that gamer identity is intrinsically connected to gender in that masculinity, together with whiteness and heterosexuality, is seen as characterizing for being (or, rather: "doing") a gamer (Fox & Tang, 2014). The gaming industry played an important part in this process by creating, marketing, and thus reproducing its products in light of a predominantly male audience (Shaw, 2013). According to Schut (2006), games remain fertile symbolic resources for men to construct

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<sup>15</sup> Although identity, identification, or group membership can denote very different things depending on the epistemological paradigm, the present study uses these terms interchangeably for indicating the degree to which the in-group is included in the self and the significance attached to that membership (Tajfel, 1978; Tropp and Wright, 2001).

gendered identities, indicating that the discourse surrounding digital game culture is stereotypically masculine.

This male supremacy in digital game culture makes it difficult for women who are interested in games to simultaneously integrate their membership as both woman *and* gamer into their self-concept. Although each of us have multiple identities, it seems that the identity structure of female players is little overlapping forcing them to negotiate complex subject positions (Roccas & Brewer, 2002; Yates & Littleton, 2001). Yet, few studies have empirically investigated how exactly women's gender identity is associated with their gamer identity. Additionally, the majority of quantitative studies uses sex solely as a demographical variable in order to denote general differences between male and female players (e.g., De Grove et al., 2015; Neys et al., 2014; D. Williams et al., 2009). This study focuses exclusively on female players deploying a quantitative approach, which is particularly suited for assessing the endorsement of gender norms within and between social groups such as game players (Luyt, 2015). In doing so, female identity is considered a multidimensional construct based on a social identity perspective.

### *9.2.2. A Multidimensional Approach to Female Identity*

To empirically investigate the relationship between gamer and female identity, we draw on a social identity approach. This perspective on group behavior comprises two different, yet related, theoretical developments: social identity theory (e.g., Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (Turner, 1985), which is an extension of the former. Whereas the activation of a social identity is highly context-dependent, both gamer and female identities can be considered as relatively stable categories stemming from predefined cultural beliefs (Tropp & Wright, 2001). This is similar to the idea that gamer and gender identities are social constructs based on the reproduction of dominant principles in situated interaction. Similarly to social constructs, the social identity perspective talks about prototypes referring to the defining attributes or practices of a certain social category (De Grove et al., 2015; Hornsey, 2008). For digital gamers, it has been argued that gaming technology is strongly tied to (but

evidently not limited to) masculinity (Carr, 2005), making gender a prototypical attribute for assuming gamer identity. When someone is seen as “non-prototypical”, such as female players, the positive distinctiveness and homogeneity of “being a gamer” could become threatened. On the other hand, highly prototypical group members will contribute to in-group favoritism (Schmitt & Branscombe, 2001). Prototypicality, thus, helps to see both themselves and others in distinct ways and to form positive feelings about oneself as a result of this social comparison (Abdelal, Herrera, Johnston, & McDermott, 2009; Tajfel & Turner, 1986). This denotes that identification with a social identity does not solely rely on a categorization of oneself in the in- or out-group, but also entails affective components.

In defining social identities, it is imperative to differentiate between their cognitive and affective dimensions. Tajfel’s (1978) original description of a social category seems to pinpoint this division as it states that a social identity is “that part of an individual’s self-concept which derives from his *knowledge* of his membership of a social group (or groups) together with the *value* and *emotional significance* attached to that membership” (p. 63). The definition provides a theoretical basis for the multidimensionality of social identities consisting of a cognitive component (i.e., *knowledge*) and two affective facets which are related to an evaluative (i.e., *value*) and emotional dimension (i.e., *emotional significance*) (Cameron, 2004). Many empirical studies have supported this tripartite structure of social identities; however, variously termed and slightly differing in their interpretation of the three components (Cameron, 2004; Ellemers, Kortekaas, & Ouwerkerk, 1999; Jackson, 2002; Obst & White, 2005). Given our study’s focus on relatively stable gamer and gender identities, we particularly draw on Cameron’s (2004) three-factor model in which chronic accessibility is acknowledged of real life groups including large social categories such as gender.

The cognitive component (i.e., *cognitive centrality*) in Cameron’s model (2004) refers to a structural prominence of a social identity in an individual’s self-concept. It is the ability to categorize oneself into a social group together with the extent to which one is aware that one belongs to that certain group. Typical of cognitive centrality is that it does not necessarily mean that people feel committed to that group or

act in accordance with group prototypicality (Ellemers et al., 1999). As such, when a woman categorizes herself as female, it is possible that she does not feel connected to other women or essentially values her in-group. The latter implies more affective dimensions of identification comprising an emotional or evaluative component. An emotional component of identity (i.e., *in-group ties*) is mainly reflected in the extent to which one feels bonded with other group members. This can also be seen as a perception of similarity and emotional closeness with others of the in-group (Cameron, 2004; Obst & White, 2005). This sense of group cohesiveness tends to be stronger in positively evaluated groups, but both components do not necessarily always co-vary or can be employed interchangeably (Ellemers et al., 2002). In case of digital games, for example, self-identified gamers who show great affinity with their in-group can simultaneously be percipient of the medium's low pop culture status compared to other mainstream media (Gyongran, 2008). The third evaluative component of identification (i.e., *in-group affect*) thus concerns the appraisal of membership in the group.

Although a negative relation has been assumed between gender and gamer identity (Shaw, 2012a), when it comes to differences between the components of female identity, we anticipate that female players identify in distinct ways as gamer. For the cognitive centrality of womanhood, it is expected that this dimension of identification holds no relationship with assuming a gamer identity. This is plausible because being a woman does not necessarily lead to rejecting a gamer label. The purely cognitive function of categorizing oneself as "woman" stands apart from the emotional significance that women attach to their gender identity, emphasizing a difference between *acknowledging* group membership as a woman and *acting* in accordance with group membership (Ellemers et al., 2002). Moreover, given women's relative inability to leave their gender group (Obst & White, 2005), it seems unlikely that the cognitive centrality of being a woman is responsible for women's low identity profile as a gamer. Hence, our first prediction is:

*H1: Female players' gamer identity is unrelated to the cognitive centrality of being a woman.*

Conversely, it can be expected for in-group affect and in-group ties that female players who attach great emotional significance to their gender identity and feel close with other in-group members are most likely to reject a gamer label. This is probably the case because affective dimensions of identification are closely connected to in-group favoritism motivating group members to perform "prototypical" group behavior (Abdelal et al., 2009). As such, when female players attach importance to their female identity and feel strong bonds with other women it is more likely that they comply with gender norms and thus discard a masculine gamer label. The following hypotheses are:

*H2: Female players' gamer identity is negatively associated with in-group ties with other women.*

*H3: Female players' gamer identity is negatively associated with in-group affect of being a woman.*

However, it has been suggested that in-group affect and in-group ties differ in terms of strength. Past studies on the three-dimensional strength of identification have shown that mainly in-group ties with other group members play a crucial role in "sticking with the group" regardless of their evaluation (Cameron, Duck, Terry, & Lalonde, 2005) and thus in performing prototypical group behavior (Ellemers et al., 1999; Jackson, 2002). In this vein, women who feel strongly connected with other in-group associates tend to act more in conformity with stereotypical gender norms. It is therefore reasonable to assume that these women are the least likely to identify as a gamer. This allows us to formulate a fourth hypothesis:

*H4: Female players' gamer identity is most negatively related to in-group ties with other women compared to in-group affect and cognitive centrality of being a woman.*

### **9.3. The Relation Between Stereotype Threat/Stigma Consciousness and Gamer Identity**

Whereas gamer identity can be considered a self-selected label, it is not necessarily a "consequence-free" label for women (Shaw, 2013, p.



1). Many studies have indicated that women crossing gendered playing lines are frequently receiving discrimination in terms of misogyny or marginalization (Bertozi, 2008; Consalvo, 2012; Jenson & de Castell, 2013; Kuznekoff & Rose, 2013). From a social identity perspective, this kind of out-group derogation serves to maintain culturally defined boundaries of gamer identity as prototypically masculine (Scheepers & Ellemers, 2005). Consequently, it is likely that female players experience threat in game contexts in which their gender identity is activated and judged against male norms. The present study is interested in how recurrent experiences of threat are affecting women players' tendency to attribute a gamer label to their self-concept. However, given that perceptions of threat can differ in meaning, we restrict our investigation to two well-known types of threat in social psychology conceptualized as (1) stereotype threat (Steele & Aronson, 1995), and (2) stigma consciousness (Pinel, 1999). Whereas both concepts can be situationally induced, we argue that women's recurrent experiences of threat could be reflective of a systematic feeling of discrimination and devaluation by a dominant game culture (Schmitt, Branscombe, Kobrynowicz, & Owen, 2002).

First, the mechanism of stereotype threat refers to a concern or anxiety that one's performance will be judged and treated in accordance with a stereotypically negative stereotype about the in-group (Shapiro & Williams, 2012; Steele, 1997). There is abundant evidence that this kind of fear ironically undermines the performance of stigmatized individuals such as women in math (Cadinu et al., 2005) or women giving leadership (Davies et al., 2005). In case of female players, recent research (Vermeulen et al., 2016) pointed out that stereotype threat impairs women's game play and play experience in terms of heightened emotional strain and troubled skill perception. To reduce such effects of stereotype threat, subjects who enact counter-stereotypical behavior (e.g., "atypical" female players) are likely to adopt several coping strategies for preserving a positive self-concept. One short-term coping strategy consists of "disengagement" in which people temporally disconnect themselves from a domain wherein stereotype threat is felt (Major & Schmader, 1998). Disengagement is very context-specific as it disappears once the threatening situation is averted. Yet, when stereotype threat is experienced on a recurring and

systematic basis, individuals may feel forced to deploy a more long-term based solution. Disengagement can then lead to “disidentification”, referring to the detachment of one’s social identity from a particular domain (Steele et al., 2002). If, over time, female players accumulate a fear for competence-based negative stereotypes, it is likely that they cease to think of themselves as a gamer, protecting the self against a social identity threat. However, to our knowledge, no previous study has demonstrated this relation in which chronically stereotype threat-associated concerns cause women to avoid self-attributing a gamer label. Hence, the fifth hypothesis is:

*H5: Stereotype threat-associated concerns about female players’ performance will be negatively associated with gamer identity*

Next to stereotype threat, another type of threat that is likely affecting women’s gamer identification is stigma consciousness. This concept generally refers to “the extent to which they [targets of stereotypes] expect to be stereotyped by others” (Pinel, 1999 p. 115). It entails the amount of discrimination that negatively stereotyped individuals encounter and how they are affected by it (Steele et al., 2002). Although this construct is closely related to stereotype threat, it differs because its focus goes beyond concerns about performing in a stereotype-relevant domain, but assesses one’s general sensitivity to negative stereotypes about the in-group. Or put differently, people with high levels of stigma consciousness anticipate heavily on being stereotyped, independently from their actual behavior (Pinel, 1999). Given that female players have a history of being stereotyped and discriminated (Summers & Miller, 2014), it is plausible that they suffer from a strong sense of stigma consciousness. This in turn is likely to affect their inclination to identify as a gamer. Women highly sensitive to stigma consciousness are more vigilant for stigma-related threats in digital gaming and thus are more prone to protect their self-concept as a woman in terms of a lowered gamer profile (Major & O’Brien, 2005). The sixth hypothesis therefore states:

*H6: Stigma consciousness of female players will be negatively related to gamer identity*

## 9.4. Method

### 9.4.1. Sample and Participant Selection

The present study drew on a sample of game players using an online self-report questionnaire. Respondents were recruited through our department's gamer panel<sup>16</sup>, a gaming website, and online social network sites. Male respondents ( $n = 151$ ) were removed from the sample since this study exclusively focused on female playing audiences. Women ( $n = 2$ ) who indicated to have never played digital games (i.e., "any type of game that can be played on all kinds of digital platforms") were also deleted. After data cleaning, a total of 464 female players were maintained with a mean age of 28.85 years old ( $SD = 9.52$ ) broadly ranging from 17 to 73 years. Sixty-four percent of the subjects indicated to play on a daily basis, 22% at least once a week, 11% at least once a month, and 3% at least once a year. This allowed us to take into account a whole spectrum of game players. Most women indicated that they are employees (35.30%), have a university diploma (32.90%), are married/living together without children (26.80%), and have a Belgian nationality (91.6%).

### 9.4.2. Measures

#### *Gamer identity and female identity.*

It was assumed that social identity is a multidimensional construct consisting of three distinct, yet related, dimensions (Obst & White, 2005; Tajfel, 1978). In this rationale, gamer identity and female identity can be similarly distinguished into a cognitive (i.e., *centrality* – the enduring psychological salience of one's group membership), an evaluative (i.e., *in-group affect* – a value connotation attached to one's group membership), and an affective (i.e., *in-group ties* – the

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<sup>16</sup> Our gamer panel consists of game players who have participated in previous studies of our research group and indicated that they would like to be informed about future gaming studies. An opt-out option was foreseen for each invitation sent out to potential participants or respondents.

subjective bond with other group members) component of identification (Cameron, 2004; Ellemers et al., 1999). Both social identities were measured repeatedly using the 12-item Three-Factor Model as proposed by Cameron (2004) with Likert-scale items ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Examples of items were: "I often think about being a woman [gamer]" (i.e., centrality), "In general I am glad to be a woman [gamer]" (i.e., in-group affect), or "I feel strong ties to other women [gamers]" (i.e., female in-group ties). Previous studies have confirmed the scale's effectiveness for measuring social identities (e.g., Obst & White, 2005).

#### *Stereotype threat and stigma consciousness.*

Stereotype threat-associated concerns were measured using a 7-point Likert scale (*strongly disagree* to *strongly agree*) adopted from Lee and Nass (2012). Although this scale was originally used for measuring direct evaluation after performance in an experimental setting, items were subtly reworded in order to assess a more enduring state of stereotype threat-associated concern about one's performance. An example item was "If I don't do well in a game, it might be viewed as stereotypic of my gender". The stigma consciousness questionnaire (SCQ) of Pinel (1999) was utilized for detecting how chronically self-conscious female players are of their stigmatized status. This 7-point Likert scale (*strongly disagree* to *strongly agree*) consists of ten items such as "I worry about being judged as a female gamer" or "Most male players do not judge female players on the basis of their gender" (reversed).

#### *Control variables.*

To complement our statistical model, it was crucial to consider previously defined prototypical characteristics of gamer identity. This study included three main determinants for which we controlled the effects in our empirical model. Firstly, it was self-evident to account for women's play frequency as highly invested players are more devoted to their pastime (De Grove et al., 2015). Play frequency was accordingly measured using a 5-point scale ranging from (*Almost*) *Never* to (*Almost*) *Daily*. The second control variable referred to players'

age because gamers are often stereotypically seen as younger individuals (Fisher, 2014). Respondents were therefore asked to indicate their age in years. A final, and third, control variable that we took into account was genre play. Past studies (e.g., Neys et al., 2014; Shaw, 2013) denoted that particularly "hardcore" players express a gamer identity as part of their selves. As digital game genres are typically gendered with masculinity closely tied to hardcore genres and femininity to casual genres (Vanderhoef, 2013), it was genuinely important to investigate how genre play is articulated in the self-concept of woman players. Hence, respondents were asked to what extent they played thirteen game genres based on 5-point scale items ranging from 1 ([*Almost*] *Never*) to 5 ([*Almost*] *Daily*).

## **9.5. Results**

### *9.5.1. Preliminary Results*

#### *Construct validity.*

It is important to evaluate instruments' content and construct validity among the tested population (Luyt, 2015). The factor structure of gamer identity, female identity, stereotype threat-associated concerns, and stigma consciousness was assessed through exploratory factor analysis (EFA) and subsequently confirmatory factor analysis (CFA). EFA was carried out using principal axis factoring with promax rotation for all constructs (see Table 1). For female identity, Cameron's (2004) three-dimensional structure of identification was confirmed with a total variance explained of 65.60%. All items loaded highly ( $> .58$ ) and distinctively on their factor. Similarly, a three-factor structure of identification was revealed for gamer identity with a total variance explained of 69.31%. However, it was decided to remove one item from the analysis due to a low factor loading ( $< .50$ ). All other items had factor loadings higher than .53. Another EFA was run for the construct stereotype threat-associated concerns showing a total variance explained of 69.54% and factor loadings all exceeding .70. A final EFA was executed for stigma consciousness resulting in a total variance explained of 63.51%. Although the SCQ originally represents a single factor of stigma consciousness, EFA indicated the existence of two

distinct components of which one stressing the awareness of being negatively judged as a female gamer (i.e., "stigma consciousness as deviant") and another one the awareness of being stigmatized by male players in particular (i.e., "male stigma consciousness"). Four items, however, were removed due to low factor loadings ( $<.50$ ). This resulted in three items for each self-defined subscale of stigma consciousness. CFA was further performed using AMOS version 22 (Arbuckle, 2006). Based on the modification indices, it was decided to remove one item of the subscale "gamer in-group affect". Moreover, there was empirical evidence for assuming an overall second-order construct of "gamer identity" with significant high correlations ( $r > .60$ ,  $p < .05$ ) between gamer centrality, gamer in-group affect, and gamer in-group ties. The latter components regressed significantly ( $p < .05$ ) on "gamer identity" with beta weights exceeding .76. The final specified measurement model yielded an acceptable fit ( $\chi^2(410) = 853.24$ , TLI = .91, CFI = .92, RMSEA = .048).

**Table 1**  
**Factor loadings Exploratory Factor Analysis (Promax Rotation).**

Item	Factor								
	Female centrality	Female affect	Female ties	Gamer centrality	Gamer affect	Gamer ties	Stereotype threat	Stigma deviant	Stigma male
FC1	-.619								
FC2	.618								
FC3	-.593								
FC4	.578								
FA1		.836							
FA2		-.816							
FA3		.774							
FA4		-.713							
FT1			.860						
FT2			-.772						
FT3			.742						
FT4			-.726						
GC1				.790					
GC2				.786					
GC3				-.529					





*Latent class clustering.*

A latent class analysis (Vermunt & Magidson, 2005) was executed to extract two groups of game genre players: non-core genre players vs. core genre players. Table 2 reports the probabilities of both groups to play each genre. The main difference between both groups is that the first group (= coded 0) is less likely to play core genre while the second group (= coded 1) is the most avid player's group of core genres such as action-adventure games, fighting games, or shooters. A similar division was proposed and operationalized by De Grove et al. (2015).

**Table 2**  
**Latent class analysis: player groups with genre probabilities, Wald statistics and R<sup>2</sup>-values.**

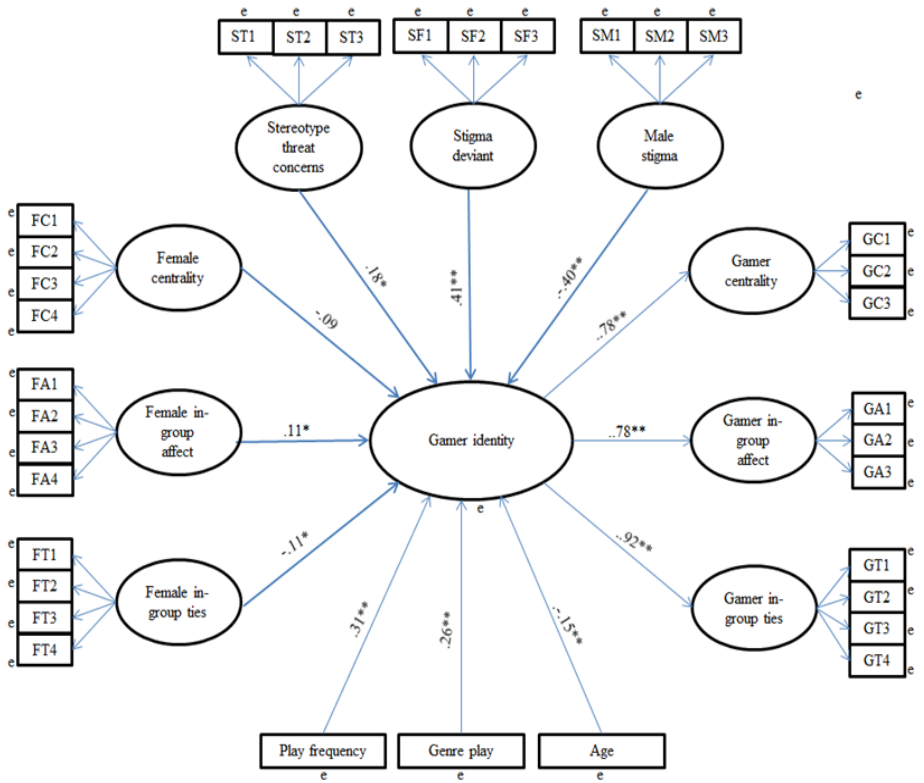
Genre	Non-core genre players ( <i>n</i> = 385)	Core genre players ( <i>n</i> = 79)	Wald	R <sup>2</sup>
<i>Action-adventure</i>	.07	.57	61.45	<b>.27</b>
<i>Strategy – MOBA</i>	.10	.35	21.29	<b>.07</b>
<i>MMORPGs</i>	.16	.38	15.11	<b>.05</b>
<i>RPGs</i>	.11	.62	60.16	<b>.24</b>
<i>Casual – social network games</i>	.54	.52	.13	<.01
<i>Music – movement games</i>	.04	.11	4.63	<b>.01</b>
<i>Sport games</i>	<.01	.11	11.55	<b>.08</b>
<i>Fighting games</i>	<.01	.18	1.14	.15
<i>Platform games</i>	.03	.60	69.53	<b>.41</b>
<i>Race games</i>	.01	.36	37.73	<b>.26</b>
<i>Shooters</i>	.04	.41	47.43	<b>.22</b>
<i>Simulators</i>	.02	.09	8.37	<b>.03</b>
<i>Building – resource games</i>	.14	.37	18.23	<b>.06</b>

*Note.* Numbers in bold denote R<sup>2</sup>-values that are statistical significant at the .05 level.

### 9.5.2. *Main Results*

A structural equation model was constructed for answering our hypotheses using Amos version 22 (Arbuckle, 2006). Figure 1 represents this statistical model with standardized regression coefficients and Table 3 summarizes the correlations between all exogenous variables of the model, including means and standard deviations.

Fit indices revealed a good fit for our statistical model ( $\chi^2$  (482) = 962.27, TLI = .91, CFI = .92, RMSEA = .046). Inspecting the coefficients, it indeed seemed that female centrality does not account for women's gamer identification (**H1 - supported**). Whereas support was found that the dimension of female in-group ties is negatively related to gamer identity (**H2 - supported**), this negative effect was not found for female in-group affect on gamer identity (**H3 - rejected**). On the contrary, the model suggested that female in-group affect is positively related to assigning a gamer label to the self. The above results thus indicate that female in-group ties is most negatively related to gamer identity compared to female in-group affect and female centrality (**H4 - supported**). Furthermore, although stereotype threat-associated concerns are statistically associated with gamer identity, the model indicated a positive relation between both variables (**H5 - rejected**). A similar positive pattern was found for the association between women's awareness of being stigmatized as a female gamer and their inclination to identify as gamer. Women's awareness of being stigmatized by male gamers, however, showed a negative relationship with gamer identity (**H6 - partly supported**).



**Figure 1. Specified structural equation model with standardized regression coefficients.**

\* $p < .05$ ; \*\* $p < .01$

**Table 3**  
**Correlation coefficients with means and standard deviations.**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<i>1. Female centrality</i>	1	.11	<b>.30</b>	.07	<b>.22</b>	<b>.13</b>	<b>.15</b>	.02	<b>-.19</b>
<i>2. Female in-group affect</i>		1	<b>.33</b>	<b>-.14</b>	<b>-.17</b>	<b>-.13</b>	.08	-.06	.04
<i>3. Female in-group ties</i>			1	<b>-.19</b>	<b>-.18</b>	-.07	<b>.19</b>	<b>-.15</b>	.08
<i>4. Stereotype threat concerns</i>				1	<b>.67</b>	<b>.62</b>	-.03	.08	<b>-.36</b>
<i>5. Stigma consciousness female gamer</i>					1	<b>.53</b>	-.01	<b>.17</b>	<b>-.30</b>
<i>6. Stigma consciousness by male gamers</i>						1	.02	.02	<b>-.11</b>
<i>7. Play frequency</i>							1	<b>-.21</b>	-.05
<i>8. Genre play</i>								1	<b>-.15</b>
<i>9. Age</i>									1
<i>Mean</i>	4.30	5.27	4.50	4.12	2.81	4.20	4.48	.17	28.85
<i>SD</i>	1.17	.85	1.30	1.56	1.26	1.12	.79	.38	9.52

*Note.* Numbers in bold denote correlations that are statistical significant at the .05 level.

## 9.6. Discussion

The current study set out to explore how female players assign a gamer label to their selves based on two important mechanisms underlying this process of social identification. A first mechanism that was taken into account considered the relationship between women's female identity and their disposition to identify (or not) as a gamer. Specifically, it was expected that female identity comprises a three-dimensional structure of which each dimension contributes in a unique fashion to women's gamer identification. This relatively comprehensive vision on female identity is different from previous empirical studies assuming a more unidimensional perspective on gender in relation to gamer identification (e.g., De Grove et al., 2015). Indeed, even when controlling for age, genre play, and play frequency, results confirmed differential responses of female players identifying as gamer depending on their degree of female centrality, in-group affect, and in-group ties. It was revealed that the mere cognitive process of categorizing as a woman (i.e., female centrality) is unrelated to the social identification process of being a gamer (**H1**). Note, however, that rejecting the null hypothesis does not necessarily mean that we have supported the null hypothesis. Notwithstanding, while past studies presumed a negative relation between gender and gamer identities (Shaw, 2012a; Taylor, 2008), this study pointed out that women's plain awareness of group membership is insufficient for endorsing cultural beliefs about gaming being a masculine pastime. As previously stated, to act or behave "prototypically" as a female in-group member requires a motivational aspect in which women *want* to differentiate between themselves and out-group members (McDermott, 2009). Motivation is thus mainly managed through the emotional significance attached to that group membership. Indeed, this study showed that female players who feel more strongly connected to other women (i.e., in-group ties) are less inclined to self-identify as gamer (**H2**). This is unsurprising given that emotional closeness with other in-group members summons a stronger conformity to dominant group norms (Cameron, 2004). It entails a greater propensity for adopting uniform group action or behavior among women. Moreover, given that female identity is constructed through social interaction (West & Fenstermaker, 1995), strong social

bonds with other women are a particularly important ground for embodying group stereotypes. Group cohesiveness of women was thus most predictive for rejecting a gamer identity (**H4**), which is in line with past studies that emphasized in-group ties as the key aspect of social identity (Ellemers et al., 1999; Obst & White, 2005). However, no evidence was found that female in-group affect was similarly negatively related to gamer identification (**H3**). On the contrary, it was found that the more value was ascribed to group membership as a woman, the more likely one was to assign a gamer identity to the self-concept. This finding points out that highly self-identified female gamers feel heartily satisfied for being a woman thereby refuting claims that femininity does not go together with being a gamer (e.g., Shaw, 2012a). A possible explanation could be that gender is just one part of a multisided conception of the self just as gaming is likely to be in the lives of women enjoying this pastime. Refusing one of these constructs due to their opposing "nature" would then mean denying an integral part of their selves. Moreover, given that gender boundaries are often seen as impermeable (Obst & White, 2005), self-identified gamers are obliged to negotiate the position of both social categories in their identity structure. A strategy for dealing with this paradox may translate itself in a sort of "emphasized femininity" (Connell, 2014) reflected in female players' high appraisal of womanhood. This allows female players to protect their status as a woman while simultaneously performing a gamer identity. A similar example of this "emphasized femininity" is the effort that female athletes often make to dress up "girly" as a clear symbol for their femaleness (Krane, Choi, Baird, Aimar, & Kauer, 2004). Whereas some might perceive this as a downgrading movement, we argue that this coping action is a signal of resistance and subversion of disciplinary power discourses in a game culture that is still favoring masculinity. It allows these women to traverse exiting power relations without renouncing the social identities that define their inner selves.

A second mechanism that was taken into account as important determinant of women's gamer identity was threat perception. Accordingly, it was inspected to what extent female players are generally concerned about their game performance being negatively evaluated (i.e., stereotype threat concerns) as well as the degree to

which they expect to be stigmatized by others (i.e., stigma consciousness). Notably, this study designated two distinct concepts of stigma consciousness: a chronic awareness of being an anomaly as female gamer (i.e., stigma consciousness as deviant) and a notion of being stigmatized by male players (i.e., male stigma consciousness). The current study did not find a negative effect of women's stereotype threat concerns on gamer identification (**H5**) hereby contradicting previous studies that stated stereotype threat can lead to disidentification with the domain under scrutiny (e.g., Steele et al., 2002). It should be noted, however, that disidentification is a long-term process which makes it reasonable to assume that our respondents did not (yet) reach this desertion phase and thus that disidentifiers were not recorded in our sample (Thoman, Smith, Brown, Chase, & Lee, 2013). Notwithstanding, a positive relationship was found between the extent to which female players defined stereotype threat-associated concerns and their gamer identification. This rather surprising result could be understood through the process linked to the "discounting perspective". The perspective denotes that perceiving discrimination can be beneficial because it discharges the causal role of the self in producing negative outcomes (Crocker & Major, 1989; Schmitt et al., 2002). In case of female players, this self-protective mechanism makes it likely that highly self-identified female gamers attribute negative outcomes to external prejudice and stereotypes thereby preserving their self-esteem as a gamer. A similar reasoning could be applied to the strong positive relationship found between stigma consciousness of female players as deviant and their inclination to identify as a gamer (**H6**). An alternative explanation could be that women who are highly committed to gaming and aware of their unconventional position within this pastime attempt to emphasize their inclusion, for example, through a more positive appraisal of gamer membership. Ellemers et al. (2002) asserted that this is a typical defensive response of individuals valuing a certain domain albeit being threatened with exclusion or acceptance from the dominant group. However, it should be noted that this claim did not apply to women's awareness of being stigmatized by male players. It was found that a high sensitivity of discrimination by men will cause women to reject a gamer identity profile. This is similar to previous studies indicating that group withdrawal is a means to protect

one's self-esteem (Major & O'Brien, 2005). The opposing effect of both types of stigma consciousness on gamer identification is remarkable, however. While female players may be motivated to disprove their atypical position in gaming, sexism in game culture appears an oppressive force preventing women to self-identify as gamer. It shows that, regardless of age, genre play, and play frequency, female players avoid gamer identification due to their perception of male discrimination. This could then (partly) explain why women tend to conceal their gamer identity (Taylor, 2008), restrain their identification (De Grove et al., 2015), or reject this label altogether (Shaw, 2012a). Future studies should shed more light on this issue including constructive suggestions for developers, marketers, journalists, and players themselves.

Some limitations of the present study should be mentioned, however. The main limitation concerns the cross-sectional design of this study, making it impossible to discern causal relationships. Further studies could try to set up a longitudinal design to explore whether our results remain consistent over a longer time period. It could be interesting, for example, to see which players remain attached to a gamer identity and who abandoned this label. Moreover, some research traditions in social sciences have criticized the measurement of gender and other identities as being artificial and uninformative about the signification of individuals (Deacon, 2008). However, focusing on social constructionism and social identity theory, quantitative analysis allows us to understand identities as a social or group level phenomenon. When our respondents were completing the survey items, they were indeed "doing" identity as informed by a normative environment. They drew on their specific sociocultural context in which group membership is perceived, contributing to our knowledge about dominant gender representations and variations therein (Luyt, 2015). More micro-level research such as the usage of qualitative techniques is advisable, however. Methods such as in-depth interviews or focus groups could complement our large-scale data focusing on the particularities of female players in today's game culture.

Regardless of these limitations, the present study enabled an enhanced understanding of how female players ascribe (or not) a gamer identity



to their selves. A common thread throughout this study was the dominance of social relationships. In this vein, female players complied with gender norms in terms of rejecting a gamer label when they held close relations with other women (whether or not players) or had experienced repercussions of male players due to their unconventional position in digital gaming. These findings stress the importance of social control mechanisms in order to maintain gender boundaries and thus restrictions in a male-dominated game culture. Notwithstanding, there was also evidence that women are currently negotiating their relation with gaming in complex and contradictory ways, which goes beyond a straightforward notion of male ownership. Furthermore, it is imperative to situate this discussion on digital games within the larger conversation about gender identity and technology in general. While there is the widely held conviction that technology is aligned with masculinity leading to male technological dominance, it should be noted that this alignment remains a social construction and thus prone to change and reformation (Van Zoonen, 2002). Indeed, supporting this claim, there is evidence of a progressive shift in game culture undermining the dominant principles on which gamer identity is built (Fox & Tang, 2014). Further academic research should pay more attention to such evolutions and especially to how these developments redefine the social structure surrounding gamer identification processes of women.



LEVEL 03

Epilogue





## CHAPTER TEN

### MAIN CONCLUSION

**I**n this final chapter, time has come to bundle together previous studies into one coherent account. Our purpose herein is to provide a clear and thorough answer on our central research question of how gendered practices in digital gaming affect the game experience of female players. Subsequently, we reflect upon the contributions made to gender game research and to the academic field, take on a personal reflexive position, order this work's limitations, and conclude with some closing remarks.

### **10.1. Answering the Research Question**

The present thesis has concentrated on the question how gendered practices in digital gaming affect the game experience of female players. This question was addressed by six empirical studies each of them adding to insights on stereotyping and/or gamer identity as our concepts of interests. Throughout our investigation, it became clear that both concepts are related as gamer identity is associated with power discourse propelled by a process of stereotyping (i.e., installing a false binary between supposedly legitimate gamers vs. non-legitimates). Labelling oneself as a gamer is a social construction and history showed us that this construction does not primarily signify women (and other “alternative” identities, for that matter) who enjoy playing games. However, given that constructions are inherently unstable (Shaw, 2013), there is reason to believe that gamer identity is currently under siege because of changing player bases. We have argued that this has led to a sense of gamer status threat justifying relatively new types of backlash by traditional players to maintain and protect a stereotypical male, heterosexual, and white discourse in game culture. Concretely, these attempts have been translated in what we called a redefined gender binary grounded in genre preferences, increased hostile sexism, and more subtle, though destructive, post-feminist particularities. We believe that being aware of the foundations of these types of backlash is crucial for furthering our understanding of the contexts in which women play. It helps us to pinpoint how power is interwoven with game culture and how gender inequality is legitimately produced and recreated in social interaction. Besides creating this knowledge, our empirical chapters zoomed in on how women are currently dealing and engaging with digital games in the described context. We revealed several patterns of bias, but also signs of strengths derived from the standpoint of women. Below we provide an overview of the most peculiar findings.

First, this thesis questioned and challenged alleged gender differences in terms of game preferences and stereotype endorsement. Remarkably, it was found that women’s motivations for playing exceed stereotypical beliefs of gaming being a male pastime. This finding provides empirical support for Taylor’s (2008) claim that women are a

highly motivated player group despite of cultural and social thresholds in game culture. This thought is further reinforced by the observation that highly invested female players resist dominant gender beliefs embedded in game culture. What we also noticed, however, was that female players are a heterogeneous group and that play experiences are diversified among women. Whereas their gender can predict gaming practices, other factors such as previous play experience and gamer identity are equally important for determining one's play experiences.

Second, we revealed that gendered practices in digital gaming are being (re)installed through the psychological mechanism of stereotype threat (Steele & Aronson, 1995). Our work indicated patterns which were similar to previous research on stereotype threat, for example, with regard to gender-related math attitudes (e.g., Cadinu et al., 2003). Drawing on three experimental studies, we found out that women worry about their gaming performance due to an assigned lower social status, which subsequently seems to negatively impact their play experiences in terms of weakened perceived achievement, lowered self-efficacy, and deteriorated emotional wellbeing (i.e., stress, anxiety, negative affect). However, these results should not be taken at face value. Similar to previous research on stereotype threat (e.g., Schmader, 2002), the degree to which a stereotype is actually threatening is contingent on people's individual characteristics. In this vein, we discovered some traits that seem to shield women against threat and, conversely, traits that enhance their chances of being impacted by threatening conditions. Trait competitiveness, for example, generally serves as a protection mechanism given that highly competitive women construct a better notion (i.e., a positive and true-to-reality assessment) about their own and others' playing skills. Moreover, whilst gamer identity and playing frequency usually affirm play outcomes such as expected and objective performance, their positive impact noticeably flattens out once threat is induced. Especially the degree to which women identify as gamer plays a crucial role in their playing practices when under threat. This is in line with previous research stating that highly-invested individuals will most keenly experience the negative effects of stigma (e.g., Keller, 2007). Female players who assign their selves to a gamer label have to negotiate

between this identity and their gender identity given that stereotype threatening situations remind them of the incongruity between both. This negotiation engenders a troubled sense of self-esteem of a highly motivated player group eagerly trying to preserve both significant identities into their selves, hereby paradoxically confirming socially constructed ideas of women as less competent or rightful players. Hence, as similarly stated by Bertozzi (2008); whether or not one agrees with these dominant ideas, power structures tap into female players' behavior and self-evaluations when confronted with culturally gendered play lines.

Third, we inquired into women's inclination to label themselves as gamer in relation to their gender identity and previous experiences of threat and stigmatization. It was found, unlike normative expectations, that self-identified female gamers embrace their gender identity. They tend to emphasize the duality of being a gamer and a woman as two parts of the same coin. Thus, albeit we identified structural relations that are currently at work, this does not discard women from having agentic abilities. On the contrary, experiences of threat and stigmatization seem to paradoxically urge these women in adopting a gamer identity. We considered this an act of resistance whereby female players are able to author their own play and critique the structural constraints that shape and subject them. We should note, however, that women encounter a variety of threats that cannot be lumped together. It was found, for instance, that threat experiences entwined with hypermasculinity do restrain female players from labelling themselves as gamers. This foregrounds the complex process of stereotyping and the boundaries in which one is able to perform agency. In a Foucauldian sense, the extent to which female players exert agency is subjected to discourse in that no one is outside power relations (Hall, 2001). Indeed, whilst women are actively challenging a hegemony of play, their agency comes under fire when repressed by dominant male voices.

To recapitulate, it can be concluded that play practices of female players are gendered in various ways. Our studies helped gain insight into different aspects of gendered practices as translated into game preferences, stereotype threat responses, and gamer identification



processes. Overall, this thesis places emphasis on how game culture privileges an androcentric account and how female players, impacted by this account, can subversively destabilize symbolic norms to express their presence as evident.

## **10.2. Contributions to the Field**

Drawing on a post-positivist perspective inspired by feminist theory, this work can be considered a feminist empiricist account. This is a relatively novel position in the field of communication studies and, though probably prone to critique from various traditions in academia, we believe that this thesis' strength is exactly its transgressive disposition and cross-cutting between social psychology and cultural studies. It allowed us to develop a nuanced account using quantitative measurement informed by social constructionism while simultaneously forwarding critical feminist scholarship. We believe that a dialogue among diverse traditions and methods in communication sciences enables a productive argumentation which is crucial in studying media audiences (Craig, 1999). Moreover, by combining both traditions, we were able to overcome an often-mentioned critique when embracing a post-positivist perspective, namely that it neglects the ideological formation of social structures such as the patriarchal nature of society (Miller, 2005). We have emphasized several ways in which power discourse is articulated in game culture and how it (often subtly) endorses inequality between men and women. Attention was paid, however, to avoid conceptualizing female players as a passive audience submissively subjected to structural constraints. Our results brought some nuance by stressing other factors (e.g., personality traits) and women's agency. On the other hand, a post-positivist framework was particularly useful in revealing regularities as constructed in the minds of female players. It allowed us to pinpoint several patterns of social consequences for women playing games based on the scientific method (i.e., "objective" research tools). A social identity point of view seemed particularly fruitful in explaining threat practices in the everyday play practices of women. We hope that this knowledge together with its empirical findings can subsequently serve progressive purposes.

Regarding methodology, this dissertation tried to disprove the ideological assumption that quantification is at odds with feminist research as it goes against feminist epistemological beliefs. We hope to have succeeded in this ambition by using a range of “objective” methods underpinning feminist research goals. Whilst we are aware that qualitative methods are preferable in many circumstances, we believe that we have succeeded in showing that a broad array of quantitative designs and measures can provide added value in the form of “hard data” able to buttress certain claims made within the field. It allowed us to assess gender norm endorsement, question the naturalness of these norms, and identify existing variations therein. Drawing on quantitative analyses, evidence was found that the social construction of gender in gaming is systematically real in its consequences by creating persistent imbalances. We found evidence, for instance, for the fact that female players who are reminded of their unconventional position in gaming are likely to (unwillingly) direct their actions in terms of underperformance and/or lower confidence. As such, our quantitative work provides convincing arguments about the existence of inequality and patterns of discrimination. We believe that identifying such socially constructed generalities is a first (although not the sole) crucial step towards gender inclusivity in gaming.

Furthermore, the main contribution concerns the addition of new insights into gender and digital games. This thesis considered stereotyping within gaming in a rather unique fashion by emphasizing its function to exercise symbolic power (Jacobson, 2005). Stereotyping was studied as an ongoing process of “othering” in which men are systematically constructed as “typical” gamers and women as “deviants”, seen as different from collective social norms (de Beauvoir, 1949). This is dissimilar from other game research narrowly defining stereotyping in terms of representation such as those identifying common stereotypes of female game characters (e.g., Behm-Morawitz & Mastro, 2009; Burgess, Stermer, & Burgess, 2007) or socio-demographic characteristics of (stereo-)typical gamers (e.g., Kowert, Festl, & Quandt, 2014). Also, this dissertation brought to light practical implications of stereotyping entrenched in female players’ experiences defined as stereotype threat. Although this psychological mechanism has been widely investigated in other male-oriented domains such as

math (Schmader, 2002) or politics (McGlone, Aronson, & Kobrynowicz, 2006), digital gaming remained a relatively unexplored field until this point. Our research offers a novel explanation for biases in women's play experiences. Moreover, based on a social identity perspective, the present thesis addressed gamer identity on a macro level. Little research has been done on gamer identity (e.g., De Grove, 2015) and even less on how the construction of gamer identity privileges certain groups of people and excludes others. One exception is the work of Adrienne Shaw (2012a), who inquired into how gamer identity intersects with other identities such as gender and race from a critical theoretical perspective. Our work, as a post-positivist account favoring feminist viewpoints, can be designated as complementary offering more general insights about social processes and social structure. By building a statistical model, we were able to distinguish several key variables in women's gamer identification processes without dismissing their marginalized position in digital game culture. Insights gained through this model and our other studies on gamer identity are particularly useful in the context of recent events aiming to "reclaim gamer identity" (Theralph, 2015), while simultaneously "silencing women" (Spencer, 2016). Whilst some now declare that #Gamergate has failed in its intent (e.g., STSAdmin, 2016), others believe that Zoë Quinn's recent drop of charges against her ex-partner stands as proof of the movement's victory (e.g., Theralph, 2016). Either way, it is clear that the bigotry against the increasing presence of women is still very much alive. We are inquisitive about the development of the quest for gamer identity and wonder how women will self-actualize this label in the future.

Finally, the current doctoral dissertation fits within and contributes to the wider debate about technology and its relation with gender. The role of gender has been extensively discussed in academia and in particular the "masculinization" of technology (e.g., Beede et al., 2011). This conclusion is often based on the counting of heads, i.e., how many women are present in which function or activity (Trojer, 2014). However, the discussion should not end with numbers of gender equality, but research should also pay attention to the importance of perspectives from *within* (Björkman & Trojer, 2006). The present thesis attempted to fill this gap in two different, yet associated, ways. First of

all, at an empirical level, our research question draws on the experiences of female players and investigates their participation in and practices of playing games. We looked at how they manage to self-develop a gamer identity and at the hurdles they encounter in game culture. It became apparent throughout our research that a similar number of female and male players in gaming (e.g., ESA, 2015) does not guarantee an unthreatening or uncomplicated space for these women. Second, at a meta-level, and in the words of Sandra Harding (1986), instead of questioning what science and technology can do for women, one should wonder what feminists can do for these domains. Concretely, we aspired to this notion by combining established forms of post-positivist inquiry in game research enriched with the social pragmatics of feminist goals. Not only does this lead to game research with a critical eye for constraining gender issues, but embracing a feminist axiology also makes reflexivity possible about the role and the position of the researcher herself. The next section will elaborate on this urge for self-scrutiny as it requires some additional elaboration.

### **10.3. “Whose Knowledge?” A Reflexive Note**

The generation of knowledge is never truly objective (Harding, 1991). The present thesis mainly reflected this notion in its social constructionist ontological stance explaining that so-called objectivities are developed and created by people themselves. However, although advocating a post-positivist epistemology, we acknowledge that all observations are influenced by the value orientations of the researcher herself. Anne Fausto-Sterling (1985) argues that our sense of being male or female touches one very personally when conducting research. In her vein, it is inherently impossible for individuals who study gender to do unbiased research. Indeed, I represented the experiences of female players from the perspective of a young woman employed as an academic researcher in a Flemish context. This is a far from neutral position. For example, my own experiences as a woman and concerns about how women are treated in digital gaming shaped my particular interest in exposing and highlighting the experiences of female players. I wondered how games, which I greatly enjoyed when growing up, became such a heavily debated “gendered” medium. It was my aspiration to not only understand this development, but to

simultaneously get a glimpse of the complexities and countermoves of female players. However, I do feel that, because of my privileged position, this work did not shed enough light on powerful issues such as race and class. How women's gender intersects with these identities could have received more attention. Moreover, the way I organized and conducted my research stems from common practices within the research department, and, even more, from my research group for Media and ICT (MICT). Belonging to this group which strongly adheres to research objectivity, while working together with the Centre for Cinema and Media Studies (CIMS) defined by a critical perspective, made the present doctoral dissertation particularly challenging. In articulating both viewpoints, I felt the need to combine my background as a quantitative and feminist researcher into a tentatively complementary approach. As mentioned before, this cross-cutting between perspectives has its pros and cons.

Acknowledging the existence of researcher biases allows readers in making alternative interpretations of the results and gives them the opportunity to deduce the logic of the argument and research question (Fausto-Sterling, 1985). It is by adopting a reflexive position recognizing the limitations of my personal agency that I hope to have added to the credibility and integrity of this dissertation.

#### **10.4. Limitations and Closing Remarks**

The current thesis is no finished product, but the result of a journey wherein there is room for improvement. Even though each empirical chapter touched upon respective limitations and suggestions for future research, some general remarks should be made with regard to conceptual and empirical constraints and how follow-up research can possibly tackle these issues.

First, one may question our main research purpose of examining how women's game experiences are affected by gendered practices in digital gaming. This dissertation did not account for the interrelated experiences of negatively "raced" and/or "classed" people (cf. *supra*) nor have we paid much attention to the gendered experiences of male players (except for a brief discussion in chapter six). Whilst the

representations of white, heterosexual men are considered dominant in digital game culture (Nakamura, 2012), little is known about how men not complying to these standards are treated in the gaming realm (with the exception of Shaw's [2012b] work on "gaymers"). Future research could focus on the experiences of subordinated masculinities such as men of color and/or gay men involved in this leisure activity. Gaining insight in these complexities adds to our understanding of an established gender hierarchy in gaming and the way a hegemonic masculinity gets played out. Moreover, equally important is to investigate gender relations in local settings and how they differ somewhat from each other. Whereas our work focused on the experiences of women in a Western (mainly Belgian and Dutch) context, some national or regional cultures may be more or even less inclusive towards minorities. In this respect, it would be interesting to set up a comparative analysis of sex-differentiated game practices or women's play experiences among countries and cultures.

Second, women's game experiences were approached through the related concepts stereotyping and gamer identity. We should note, however, that our interpretation of these concepts was limited and that experiences are affected or induced by manifold determining factors. Whilst we mainly operationalized stereotyping in terms of stereotype threat, we are aware that there are multiple processes that account for the behavioral and affective effects of stereotypes. The ideomotor principle (Dijksterhuis & Bargh, 2001), for example, presents an alternative cognitive process, pointing to the fact that the behavior of stereotyped targets automatically follows from the activation of stereotypes' negative mental contents. Furthermore, we devoted much attention to the acquisition of gamer identity as a tactic for excluding women from a male-dominated game culture. It could be, however, that we have overestimated the impact of gamer identity and therefore obscured other variables accountable for gaming as a gendered leisure activity. Whilst we did consider individual characteristics and gaming practices, more attention could have been paid to female players' social networks. This is especially relevant considering our findings about the importance of social control mechanisms in guarding women's compliance with gender norms (cf. Chapter 9). Follow-up research could look into social contacts and inquire into who plays an important

part in women's play experiences and for what reason. For instance, it is not unreasonable to assume that women with a greater network of female players are more likely to adopt gaming in their daily leisure activities. It incites a sense of "normalization" (Shaw, 2012a) in which emphasis is on the "everydayness" of playing games and not on *who* plays them.

Third, although we have repeatedly mentioned our lack of qualitative in-depth research, we should also report on other limitations with regard to the used methodology. Comments, for example, could be made on our cross-sectional designs; the survey studies have solely provided a "snapshot" of outcomes at a specific point in time. Future research could implement a longitudinal approach in which it is examined whether or not women's game experiences remain constant over time. This would be especially interesting given that the concept of gamer identity is likely to fluctuate due to its embeddedness in cultural, historical, and social contexts. Furthermore, it is impossible to infer causality between independent and dependent variables by means of cross-sectional survey studies (Oomens, Scheepers, & Vergeer, 2006). It was attempted to counterbalance this limitation by executing experimental studies on the topic. Notwithstanding, one could discredit our experiments as if they assume homogenous game "effects" hereby obscuring active audience reception. We believe, however, that acknowledging that audiences can be active, does not imply that gaming contexts are ineffectual. Our experimental studies showed that gaming practices can be influential under certain circumstances without discarding women's individual traits or play habits. In contrast, instead of ignoring individual-difference variables or solely including them as controls, they were regarded as moderators of the effects of game play on women's experiences. Moreover, we strongly believe that it is possible to be concerned with "media impact" and at the same time be attentive to the ways in which people engage with, criticize, and resist media messages and their culture (e.g., Kitzinger, 2013). Yet, it is self-evident that experimental research (just as any other research method) has intrinsic limitations such as its somehow artificial set-up, confined ecological validity, and issues of generalization (Beentjes, Hendriks Vettehen, & Scheepers, 2006). For example, in the experimental studies, we used relatively simple and neutral games without much

elaboration on specific narratives (or lack thereof). Hence, it is possible that the results could have been different in terms of strength when other games were played with either strong narratives, collaborative vs. competitive options, and/or difficult controls. This notion paves the way for various research prospects investigating women's play experiences of diverse game genres with varying degrees of difficulty. Furthermore, a final note about methodology concerns the executed psychophysiological experimental study. Whereas psychophysiological research offers many opportunities for measuring emotions and motivation in the field of communication (e.g., Laaksonen et al., 2013), this dissertation only provided a glimpse of its possibilities. Besides heart rate variability, there exists a range of other psychophysiological techniques such as skin conductance, electroencephalography (EEG), elektromyografie (EMG) etc. Future research could further explore these techniques and develop a useful research frame in which psychophysiology can be implemented in dealing with specific communication problems or questions.

Despite the aforementioned limitations, we believe that this doctoral dissertation succeeded in providing a response to our central research question. It demonstrated how women are playing games, the way they challenge the naturalness of gender differences, which mechanisms are systematically perpetuating discrimination, and how women articulate identification processes both as woman and gamer. Female players are definitely a diverse and motivated player group. Their enthusiasm is reflected in the emergence of numerous supportive gaming communities (e.g., Girl Gamer community on *Steam*<sup>17</sup>) or initiatives such as the Women in Games Special Interest Group (WIG SIG), building awareness for gender inclusivity in today's game culture. As such, being a gamer should not belong to some privileged group, nor does it need a predefined label or identity. It is our hope that this dissertation helped viewing games as more than just banal entertainment, but as processes which are entangled with wider sociocultural practices and biases. At the very least, we hope to have

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<sup>17</sup> <https://steamcommunity.com/groups/GirlGamers>



shown that examining women's game play experiences deserves sustained academic attention.



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