Do Coping Strategies Moderate the Relationship between Escapism and Negative Gaming Outcomes in World of Warcraft (MMORPG) Players?

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Abstract

A link between escapist motivations for playing Massively Multiplayer Online Role-Playing Games (MMORPGs) and negative outcomes associated with play has been previously established. However, not all escapists experience the same level of negative gaming outcomes, and the underlying mechanisms have yet to be explored. The purpose of this study was to determine if individual differences in engaged and disengaged coping styles could explain differences in outcomes. Cross-sectional survey data from adult players of World of Warcraft (WoW) were collected ($N = 217$), using measures of negative gaming outcomes, escapism, and individual coping style. Primary analysis revealed that disengaged coping strategies were positively correlated with both escapist motivations and negative outcomes, and the engaged coping strategies of Problem Solving and Social Support were negatively correlated with negative gaming outcomes. The main analyses revealed that the relationship between escapist motivations for play and negative gaming outcomes was moderated by problem-focused coping strategies. This study offers novel insight into video game research, demonstrating that individual coping styles play a role in moderating the relationship between gaming motivation and the negative outcomes associated with video gaming.

Keywords: MMORPG, Video Games, Escapism, Coping, Internet Gaming Disorder, Negative Gaming Outcomes
1. Introduction

Massively Multiplayer Online Role-Playing Games (MMORPGs) are well established and influential in popular culture (Williams, Yee & Caplan, 2008). This genre of video game accounted for $2.43 billion in estimated revenue in digital sales alone in the United States in 2016 (Statista, 2017). Playing MMORPGs – and video gaming more broadly – has often been associated with behaviours that can lead to negative outcomes such as compulsive preoccupation with the game, often to the exclusion of other psychosocial needs and interests (Hagström & Kaldo, 2014; Kaczmarek & Drążkowski, 2014; Kuss, Louws, & Wiers, 2012). In response to the growing recognition of the potentially serious consequences of online gaming, Internet Gaming Disorder (IGD) was formally introduced into Section III of the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) in 2013. Section III of the DSM-5 highlights and proposes diagnostic criteria for emerging diagnoses that are not yet officially recognised. The aim of this section is to encourage and direct research that promotes further understanding, and inform decisions about potential inclusion of the diagnosis in future editions of the DSM.

1.1. MMORPGs, negative outcomes and motivations for play.

World of Warcraft (WoW) is a popular game within the MMORPG genre, with its most recent expansion selling 3.3 million copies on its release day (Activision Blizzard, 2017). WoW allows for thousands of players to be connected at the same time. Players can cooperate, explore, fight, communicate, complete in-game objectives and gain rewards by joining guilds (permanent groups of players who share in-game resources) or by themselves via solo play or by utilising the in-game grouping tool (Blizzard Entertainment, 2017; Schimmenti et al., 2017; Thorens, Khan, Khazaal, & Zullino, 2012). A main feature of WoW and other MMORPGs is their system of
goals and achievements, which make them seemingly endless, and their social and competitive focus, which promotes and increases devotion to the game (Ng & Weimer-Hastings, 2005). Indeed, playing MMORPGs has previously been associated with addiction-related factors such as tolerance (needing to play for increasing amounts of time to gain the same desired excitement), withdrawal symptoms and intrapersonal and interpersonal conflict (Smahel et al., 2008). MMORPGs have also been associated with higher rates of depression and substance use (Williams et al., 2008), and poorer overall health and sleep quality when compared to arcade, console or solo computer gamers (Smyth, 2007). The intensity to which a player engages in MMORPG play has been attributed to the rate of addiction symptoms in some players. Distinctions have been drawn however, between indicators of addiction, and indicators or high engagement. It is possible for an individual to be a highly engaged MMORPG player, but not exhibit symptoms such as withdrawal and tolerance which are indicative of behavioural addiction (Charlton & Danforth, 2007).

As indicated, not all MMORPG players experience negative outcomes from gaming, and research has sought to identify individual differences that may account for this. One area that has garnered attention in recent years is differences in individual motivations for gaming as a predictor of outcomes. Research suggests that gaming, for some individuals, might be a way of avoiding face-to-face social situations (Peters & Peters, 2008). For others, gaming may be used as an aid to social interaction and support (Kaczmarek & Drążkowski, 2014), or may be driven by fascination with the online virtual world (Hagström & Kaldo, 2014).

Yee developed a 10-factor model of motivation that relates specifically to MMORPG gaming motivations (Yee, 2006). The 10 motivational factors were grouped into three main headings: (1) Achievement, which encompassed ‘advancement’, ‘analysing game mechanics’,
and ‘competition’; (2) Social, related to the factors ‘chatting and casual interactions’, ‘developing supporting relationships’, and ‘teamwork’, and (3) Immersion, which included ‘geographical exploration’, ‘role-playing’, ‘avatar customisation’ and ‘escapism’. This work helped to build a new basis for theory for future investigations of online gaming (Williams et al., 2008). Caplan, Williams, and Yee (2009) further suggested that identifying the gaming motivations of players may help to clarify why certain individuals are more susceptible to problematic gaming outcomes than others.

1.2. Escapism as a motivation for play.

Since this time, one of the main areas of research into negative psychological and social outcomes associated with video gaming has been the ‘escapism’ factor as a motivation for gaming (Billieux et al., 2013; Kaczmarek & Drążkowski, 2014; Kahn et al., 2015; Kardefelt-Winther, 2014b; Kirby, Jones, & Copello, 2014; Kuss, Louws, & Wiers, 2012; Yee, 2006), which can be broadly defined as playing to “relax or escape from real life or avoid real life problems” (Caplan et al., 2009, p. 1315). Previous research seeking to understand the specific psychological characteristics that predict negative gaming outcomes have identified escapism as a strong predictor (see Kardefelt-Winther, 2014a). For example, Kaczmarek and Drążkowski (2014) demonstrated that playing online video games for escapist reasons was associated with a stronger belief that the gaming environment was as realistic as the real world, leading to decreased offline support for real world problems and reduced levels of well-being. Kardefelt-Winther (2014b) also found differences between ‘escapist’ individuals that experienced many negative outcomes associated with gaming, when compared with those who experienced fewer negative outcomes. Escapists that experienced more negative outcomes reported higher levels of stress and lower self-esteem, indicating an interaction effect between psychosocial problems and
escapism when predicting negative gaming outcomes. Escapists who experienced fewer negative outcomes, on the other hand, were found to have low levels of psychosocial problems (e.g. stress, self-esteem). This suggested that playing to escape is not always negative, an idea further supported by Merhi (2016), who found escapism to be a significant antecedent to the enjoyment of video games.

1.3. Model of Compensatory Internet Use and gaming as a coping mechanism.

The Model of Compensatory Internet Use suggests that when individuals experience problematic real life situations they can be motivated to go online to alleviate their dysphoric mood or to fulfil unmet needs (Kardefelt-Winther, 2014c). This behaviour can have positive or negative outcomes, which are dependent on certain psychological characteristics, such as high stress or low self-esteem (Kardefelt-Winther, 2014a). Kardefelt-Winther (2014b) expands on this notion by suggesting that, rather than being framed as a mental disorder, excessive internet gaming may be more accurately described as a coping strategy for other life problems. Coping has been defined as a behavioural response, or process that aims to deal with social, emotional and psychological stress (Lazarus & Folkman, 1987). In line with this idea, it is proposed that the addictive behaviours evident in some MMORPG players may reflect ways for people to cope with real life problems, by increasing positive feelings and reducing negative moods through play (Kardefelt-Winther, 2014a; 2014b; 2014c; Griffiths et al., 2015). From this perspective, when escapism is coupled with a lack of coping resources for everyday psychosocial problems, the risk of negative outcomes may be higher; this may go some way to explain the individual variance in negative outcomes associated with MMORPGs.

1.4. Different types of coping styles and the potential link with gaming outcomes.
In seminal work on the structure of coping, Tobin (1984/2001) demonstrated that people have specific coping styles based on whether they engage or disengage in response to stressful events. Specifically, an ‘engaged’ coping style encompasses strategies that are approach-related, and involve confronting stressors, which is thought to limit long-term physiological and psychological impact (Addison et al., 2007; Speyer et al., 2016). Alternatively, a ‘disengaged’ coping style is one that involves the individual seeking to limit their exposure to noxious stimuli by disengaging from it. Thoughts about the stressor are avoided; behaviours that might change the situation are not initiated, and wishful thinking and fantasies are used as an attempt to draw attention away from the stressor (Tobin, Holroyd, Reynolds, & Wigal, 1989). Within engagement and disengagement coping styles the target of the coping effort can be either problem-focused (managing the stress-producing situation) or emotion-focused (regulating the affective-response), with four sub-categories identified in each (Figure 1).

![Figure 1. Coping style model. Adapted from Tobin (1984/2001).](image)
To date, differences in individual coping style have been investigated in the gaming literature only in relation to domains such as pain tolerance and recuperating from stress and strain. For example, Sil et al. (2014) found demonstrable improvement in children’s pain tolerance when a video game was introduced as a distraction, and this was equally as useful for children with disengaged (e.g. ignoring the stressor, distracting activities) or engaged (e.g. monitoring their experience, seeking information) coping styles. In a German study of 1,614 predominately male participants ranging between the ages of 12 and 56, Reinecke (2009) found that video games were systematically used after exposure to stressful situations. Participants with an emotion-focused coping style were more likely to use games as a recovery tool than participants with a problem-focused coping style. This study also showed that the relationship between stress and gaming was moderated by social support, suggesting that online video games are used as a source of social support in stressful situations.

However, the association between individual coping style, playing video games for escapism, and negative outcomes from gaming has not been previously explored. In line with the research outlined above, an individual’s motivation to play video games as a way of escaping from real life or avoiding real life problems seems to reflect a disengaged coping style, which may render individuals less likely to successfully deal with psychosocial problems in the long-term (Speyer et al., 2016). In line with the Model of Compensatory Internet Use, such individuals may be more likely to experience negative outcomes from their MMORPG play.

1.5. Aim of the current study.

Drawing on the research reviewed above, the broad aim of this study was to investigate the relationship between escapism, differences in coping styles and negative gaming outcomes.
More specifically, the study aimed to investigate whether the strength of the association between escapism and negative gaming outcomes in MMORPG players was influenced by individual coping style. This investigation will help to explain why some individuals who play videogames for escapist reasons experience negative outcomes, while others do not. The following hypotheses will be examined:

H1 Across the whole sample, escapism will be positively correlated with negative gaming outcomes

H2 Disengaged coping strategies will be positively correlated with negative gaming outcomes, and engaged coping strategies will be negatively correlated with negative gaming outcomes

H3 Coping styles will moderate the relationship between escapist motivations and negative gaming outcomes, such that when disengagement increases, the relationship will also increase, and when engagement increases, the relationship will decrease.

2. Method

2.1. Participants.

Participants were recruited from the popular WoW Facebook group “World of Warcraft”, a closed group with 94,871 members (at the time of writing). To increase the representation of female participants, who are usually underrepresented in similar research (Dupuis & Ramsey, 2011; Hagström & Kaldo, 2014; Kaczmarek & Drążkowski, 2014; Kardefelt-Winther, 2014b; Longman, O’Connor, & Obst, 2009), the public female-only Facebook group “I’m a Girl and I play WoW” (with 18,494 members at the time of writing) was also used for recruitment. Both groups have members from across the globe, and are English language groups. An invitation to complete the study was also posted on two online gaming forums (Wowhead and MMO
Champion). This was an anonymous study and no identifiable data was collected from participants. Participants were invited to participate if they were over 18 years of age and were current subscribers and players of World of Warcraft.

A total of 334 participants clicked on the online survey link, and 217 (65%) completed the survey in its entirety. Of these 157 identified as female (72.4%), 58 as male (26.9%), 1 other / prefer not to say (0.5%), and 1 (0.5%) who failed to answer. Further demographic details are presented in the Results section.

2.2. Measures.

2.2.1. Motivation to escape.

Motivation to escape was measured using two items from the Escapism subcomponent of the main component of Immersion in Yee’s Motivation to Play Inventory (Williams, Yee, & Caplan, 2008; Yee, 2006). The two items were selected because they reflected the concept of escapism, rather than Immersion more broadly. Seven items adapted from Hagström and Kaldo’s (2014) negative escapism scale were also included. Examples of items are: “How often do you play to escape from the real world?” and “How often do you start playing WoW when you are in a bad mood?”. All items were five-point Likert scale statements and participants were asked to respond to options ranging from 1 = never, to 5 = almost always. The internal consistency of the total nine item scale was high in the current study ($\alpha = .90$), and similar to the Cronbach’s alpha previously reported in Hagström and Kaldo (2014) ($\alpha = .88$).

2.2.2. Negative gaming outcomes.

Negative gaming outcomes were measured using the five item negative outcomes scale adapted by Kardefelt-Winther (2014b). The negative outcome scale was adapted specifically for
WoW players, with higher scores reflecting more negative outcomes. The scale included statements such as: “I sometimes lose sleep because of the time I spend playing WoW”, and were measured using a 5-point Likert scale with responses ranging from 1 = strongly disagree to 5 = strongly agree. Internal consistency was satisfactory in the current study (α = .77), which is consistent with the Cronbach’s alpha reported by Kardefelt-Winther (2014b) (α = .72).

2.2.3. Individual coping style.

Individual differences in coping style was assessed using the 72-item Coping Strategies Inventory (CSI) (Tobin, 1984/2001). Participants were asked to rate the general frequency by which they utilised each listed coping strategy in response to a stressful event that had occurred in their life. Participants were asked to imagine the stressful situation and were given the opportunity to briefly write the details, although this was not mandatory. The coping style scale consisted of eight primary subscales. Two subscales related to ‘problem-focused engagement’: Problem Solving (e.g. ‘I worked on solving the problems in the situation’) and Cognitive Restructuring (e.g. ‘I reorganised the way I looked at the situation, so things didn’t look so bad’). Two subscales related to ‘emotion-focused engagement’: Express Emotion (e.g. ‘I found ways to blow off steam’) and Social Support (e.g. ‘I accepted sympathy and understanding from someone’). The next two subscales related to ‘problem-focused disengagement’: Problem Avoidance (e.g. ‘I slept more than usual’) and Wishful Thinking (e.g. ‘I hoped the problem would take care of itself’); and the final two subscales related to ‘emotion-focused disengagement’: Self-Criticism (e.g. ‘I told myself that if I wasn’t so careless, things like this wouldn’t happen’) and Social Withdrawal (e.g. ‘I spent more time alone’). All items were measured on a five-point Likert scale, with responses ranging from 1 = never, to 5 = almost always. Each of the eight primary scales reported satisfactory levels of internal consistency in the
current study ($\alpha = .67$ to $\alpha = .95$), which is consistent with previous studies (Held, Owens, & Anderson, 2015; Tobin et al., 1989).

2.3. Procedure.

When clicking on the recruitment link, participants were directed to a cross-sectional survey on the online survey and data collection platform Qualtrics (2017). Information about the study was given, including a number for Lifeline to mitigate risk of discomfort, and a link to access online Lifeline support chat for international participants. Consent was assumed once participants commenced the survey, and there were no incentives for participation. The questionnaire began with demographic information, followed by the measures described above. At the end of the survey participants were given the opportunity to leave feedback, and thanked for their time. The survey took approximately 15 – 20 minutes to complete. Full ethical approval was gained from the relevant University ethics board.

2.4. Data analysis.

Correlation analyses (Pearson’s) were performed to assess the correlations between the main variables. Moderation analyses using the PROCESS macro (Model 1) for SPSS (Hayes, 2013) was used to test the hypothesis that coping style moderated the relationship between escapism motivation and negative gaming outcomes. Prior to the main analyses, descriptive statistics and $t$ tests for independent groups were calculated.

3. Results

3.1. Sample characteristics.
Demographic variables for the sample showed a mean age of 35.91 (SD = 11.52, age range 18-74 years), with most participants born in the United States (61%) and 4% born in Australia. The majority of participants had received higher than secondary school education (college/TAFE/diploma, University or Postgraduate studies) (73%) and were employed (63%). Most participants were members of a couple with children (33%).

Table 1 shows the means and standard deviations for the escapism, coping styles and negative gaming outcome scores. The escapism scale scores are comparable to those found in similar studies (Hagström & Kaldo, 2014 (M = 2.74, SD = 0.95); Kardefelt-Winther, 2014b (M = 3.0, SD = 0.7) (M = 2.81, SD = 0.87)), as are negative gaming outcomes (M = 2.11, SD = 0.89) (Kardefelt-Winther, 2014c (M = 2.6, SD = 0.8)). The CSI as a measure of coping style has not been utilised in similar research, however the means and standard deviations of the eight primary strategies are reflective of the findings of Tobin (1984/2001).

Table 1 – Means and standard deviations of main outcome and predictor variables (N = 217).

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Range</th>
<th>M</th>
<th>SD</th>
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<tbody>
<tr>
<td><strong>Escapism</strong></td>
<td>1.00 - 4.89</td>
<td>2.81</td>
<td>0.87</td>
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<tr>
<td><strong>Coping Styles</strong></td>
<td></td>
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<tr>
<td><strong>Engagement</strong></td>
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<tr>
<td>Problem-Focused Engagement:</td>
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<td></td>
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<tr>
<td>1. Problem Solving</td>
<td>1.00 - 5.00</td>
<td>3.01</td>
<td>0.86</td>
</tr>
<tr>
<td>2. Cognitive Restructuring</td>
<td>1.00 - 5.00</td>
<td>2.82</td>
<td>0.87</td>
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<tr>
<td>Emotion-Focused Engagement:</td>
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<tr>
<td>3. Express Emotion</td>
<td>1.00 - 4.56</td>
<td>2.78</td>
<td>0.84</td>
</tr>
<tr>
<td>4. Social Support</td>
<td>1.00 - 4.89</td>
<td>2.72</td>
<td>1.07</td>
</tr>
<tr>
<td><strong>Disengagement</strong></td>
<td></td>
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<tr>
<td>Problem-Focused Disengagement:</td>
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</tbody>
</table>
1. Problem Avoidance 1.00 - 4.11 2.24 0.71
2. Wishful Thinking 1.00 - 5.00 3.05 1.03

Emotion-Focused Disengagement:
3. Self-Criticism 1.00 - 5.00 2.33 1.31
4. Social Withdrawal 1.00 - 5.00 2.68 1.01

**Negative Gaming Outcomes** 1.00 - 4.60 2.11 0.89

3.2. The relationship between escapism, coping strategy and negative gaming outcomes.

To address Hypotheses 1 and 2, correlations were performed between escapism, negative gaming outcomes and the eight primary coping variables (Table 2).

**Table 2** – Correlations for escapism, negative gaming outcomes and primary coping strategy.

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<tbody>
<tr>
<td>Escapism</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>NGO</td>
<td>.397**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Solving (PFE)</td>
<td>-.107</td>
<td>-.277**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Restructuring (PFE)</td>
<td>-.102</td>
<td>-.124</td>
<td>.550**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Express Emotion (EFE)</td>
<td>.272**</td>
<td>-.002</td>
<td>.186**</td>
<td>.187**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support (EFE)</td>
<td>.016</td>
<td>-.173*</td>
<td>.312**</td>
<td>.315**</td>
<td>.640**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Problem Avoidance (PFD)</td>
<td>.434**</td>
<td>.378**</td>
<td>-.225**</td>
<td>.035</td>
<td>.057</td>
<td>-.128</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wishful Thinking (PFD)</td>
<td>.527**</td>
<td>.374**</td>
<td>-.126</td>
<td>-.178**</td>
<td>.301**</td>
<td>.067</td>
<td>.542**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Criticism (EFD)</td>
<td>.372**</td>
<td>.306**</td>
<td>-.095</td>
<td>-.224**</td>
<td>.069</td>
<td>-.098</td>
<td>.370**</td>
<td>.604**</td>
<td>1</td>
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</table>
As expected, escapism was positively and significantly correlated with negative gaming outcomes (H1). Escapism also demonstrated a significant correlation with all four of the disengaged coping subscales, and, more surprisingly, one engaged coping strategy: Express Emotion, although this strategy was not associated with negative gaming outcomes. In relation to H2, all four disengaged coping strategies were significantly positively correlated with escapism and negative gaming outcomes. Wishful Thinking, a problem-focused disengaged coping strategy, had the strongest correlation with escapism, and also showed a moderate positive correlation with negative gaming outcomes. All four of the engaged coping strategies demonstrated negative correlations with negative gaming outcomes; however, only two of these were significant: Problem Solving (problem-focused) and Social Support (emotion-focused). Albeit weak, these correlations suggest that problem solvers and those who seek social support in times of stress seem to experience fewer negative gaming outcomes, and are not motivated to play WoW to escape.

3.3. Moderation analysis: Do coping strategies moderate the relationship between escapism and negative gaming outcomes?

3.3.1. Interaction effects.

To address H3, eight separate moderation models were fitted to the data utilising the PROCESS macro for SPSS, simple moderation (Hayes, 2013; model 1). Moderation analysis looks at the combined effect of two variables on another and the relationship between a predictor
and an outcome at different levels of the moderator (Field, 2013). In all eight moderation models, escapism was the predictor, and negative gaming outcomes was the outcome. Each model included one of the eight primary coping strategies as the moderator, and the remaining three primary coping strategies for either the disengaged or engaged coping styles were included in the model as covariates, following the recommendation outlined by Hayes (2012) (e.g. when Problem Avoidance was the moderator, the covariates were Self-Criticism, Wishful Thinking, and Social Withdrawal). All interaction effects are shown in Table 3. Escapism significantly predicted negative gaming outcomes in all eight models ($p < .05$). In support of H3, two engaged (Problem Solving, Cognitive Restructuring) and one disengaged (Wishful Thinking) coping strategy were found to moderate this relationship.

Table 3 – Interaction effects of the eight primary coping strategies and escapism [and 95% Confidence Intervals], predicting negative gaming outcomes.

<table>
<thead>
<tr>
<th>2-way Interaction</th>
<th>B</th>
<th>SE B</th>
<th>$t$</th>
<th>$p$</th>
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</thead>
<tbody>
<tr>
<td><strong>Engaged Coping Style</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Escapism x Problem Solving</td>
<td>-0.15</td>
<td>0.06</td>
<td>-2.59</td>
<td>$p = .01$</td>
</tr>
<tr>
<td></td>
<td>[-0.26, -0.03]</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Escapism x Cognitive Restructuring</td>
<td>-0.15</td>
<td>0.06</td>
<td>-2.63</td>
<td>$p = .01$</td>
</tr>
<tr>
<td></td>
<td>[-0.27, -0.04]</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Escapism x Express Emotion</td>
<td>-0.06</td>
<td>0.07</td>
<td>-0.83</td>
<td>$p = .41$</td>
</tr>
<tr>
<td></td>
<td>[-0.20, 0.08]</td>
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<tr>
<td>Escapism x Social Support</td>
<td>-0.06</td>
<td>0.05</td>
<td>-1.25</td>
<td>$p = .21$</td>
</tr>
<tr>
<td></td>
<td>[-0.17, 0.04]</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Disengaged Coping Style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escapism x Problem Avoidance</td>
<td>0.15</td>
<td>0.10</td>
<td>1.66</td>
<td>$p = .10$</td>
</tr>
<tr>
<td></td>
<td>[-0.03, 0.33]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Escapism x Wishful Thinking</td>
<td>0.14</td>
<td>0.06</td>
<td>2.24</td>
<td>$p = .03$</td>
</tr>
</tbody>
</table>
Escapism x Self-Criticism  
0.002 0.003 0.746  \( p = .46 \)  
[-0.07, 0.15]

Escapism x Social Withdrawal  
0.003 0.004 0.876  \( p = .38 \)  
[-0.07, 0.18]

*Note.* Individual interaction effects are taken from eight separate moderation models.

**3.3.2. Engaged strategies.**

In relation to engaged coping strategies, both problem-focused engagement styles of Problem Solving and Cognitive Restructuring moderated the relationship. Problem Solving explained an additional 1.8% of the variance in the model (\( F(1, 209) = 6.70, p = .01 \)). To interpret this moderation effect, conditional effects were examined. Table 4 shows the results of three separate regressions, the effect of escapism on negative gaming outcomes at low (one SD below the mean), average (at the mean) and high levels (one SD above the mean) of Problem Solving strategy use. The simple slopes are illustrated in Figure 2.

**Table 4** – Conditional effects of Problem Solving on the relationship between escapism and negative gaming outcomes.

<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>B</th>
<th>SE B</th>
<th>( p )</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>One SD below mean</td>
<td>0.49</td>
<td>0.07</td>
<td>&lt; .001</td>
<td>0.35, 0.64</td>
</tr>
<tr>
<td>At the mean</td>
<td>0.37</td>
<td>0.07</td>
<td>&lt; .001</td>
<td>0.23, 0.50</td>
</tr>
<tr>
<td>One SD above mean</td>
<td>0.24</td>
<td>0.09</td>
<td>.009</td>
<td>0.06, 0.42</td>
</tr>
</tbody>
</table>

*Note.* CI = Confidence Interval
Figure 2. Moderating effect at levels of Problem Solving on the relationship between escapism and negative gaming outcomes. NGO = Negative Gaming Outcome.

As Problem Solving increases, the effect of escapism on negative gaming outcomes decreases. The Johnson-Neyman technique was then applied, which derives the value of the moderator when the effect of the predictor on the outcome transitions from being statistically significant to not significant, hence demonstrating a ‘region of significance’ (Hayes, 2012). This technique showed that the relationship between escapism and negative gaming outcomes was significant until Problem Solving reached a score of 4.14 ($M = 3.02$, $SD = 0.86$).

Cognitive Restructuring also significantly moderated the relationship between escapism and negative gaming outcomes. This moderation explained a further 2% of the variance in the model ($F(1,209) = 6.91$, $p = .009$). This interaction is illustrated in Figure 3. The interaction was again probed by testing the conditional effects of escapism at three levels of Cognitive
Restructuring, which is shown in Table 5 and Figure 3.

**Table 5** – Conditional effects of Cognitive Restructuring on the relationship between escapism and negative gaming outcomes.

<table>
<thead>
<tr>
<th>Cognitive Restructuring</th>
<th>B</th>
<th>SE B</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>One SD below mean</td>
<td>0.51</td>
<td>0.08</td>
<td>&lt; .001</td>
<td>0.36, 0.67</td>
</tr>
<tr>
<td>At the mean</td>
<td>0.38</td>
<td>0.06</td>
<td>&lt; .001</td>
<td>0.25, 0.51</td>
</tr>
<tr>
<td>One SD above mean</td>
<td>0.24</td>
<td>0.09</td>
<td>.006</td>
<td>0.07, 0.41</td>
</tr>
</tbody>
</table>

*Note. CI = Confidence Interval*

**Figure 3.** Moderating effect at levels of cognitive restructuring on the relationship between escapism and negative gaming outcomes. NGO = Negative Gaming Outcome.

The relationship between escapism and negative gaming outcomes was significant at one standard deviation above and below, and also at the mean of Cognitive Restructuring ($M = 2.82$,
SD = 0.89). The Johnson-Neyman technique showed that the relationship between escapism and negative gaming outcome was significant when cognitive restructuring was 4.00 points, and not significant above this value.

3.3.3. Disengaged strategies.

The only disengaged coping strategy found to be a significant moderator of the relationship between escapism was Wishful Thinking. This interaction explained a further 1.7% of the variance in the model ($F(1,205) = 5.04, p = .03$) and is illustrated in Figure 4. The conditional effects of escapism at three levels of Wishful Thinking were significant at both the mean ($M = 3.07, SD = 1.02$) and at one standard deviation above the mean, but not significant at one standard deviation below the mean. This suggests that escapism is not associated with negative outcomes if an individual engages in low levels of Wishful Thinking coping, but as Wishful Thinking strategies increase, escapism positively predicts the negative outcomes associated with gaming. Conditional effects are shown in Table 6.

Table 6 – Conditional effects of Wishful Thinking on the relationship between escapism and negative gaming outcomes

<table>
<thead>
<tr>
<th>Wishful Thinking</th>
<th>B</th>
<th>SE B</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>One SD below mean</td>
<td>0.15</td>
<td>0.09</td>
<td>.11</td>
<td>-0.03, 0.33</td>
</tr>
<tr>
<td>At the mean</td>
<td>0.29</td>
<td>0.08</td>
<td>&lt; .001</td>
<td>0.14, 0.44</td>
</tr>
<tr>
<td>One SD above mean</td>
<td>0.43</td>
<td>0.10</td>
<td>&lt; .001</td>
<td>0.22, 0.63</td>
</tr>
</tbody>
</table>

Note. CI = Confidence Interval
Figure 4. Moderating effect at levels of Wishful Thinking on the relationship between escapism and negative gaming outcomes. NGO = Negative Gaming Outcome.

The Johnson-Neyman technique further demonstrated that the relationship between escapism and NGO was significant when Wishful Thinking was above 0.87 points below the mean, and not significant below this value.

5. Discussion

The main purpose of this study was to investigate whether individual differences in coping style moderate the relationship between escapism and negative gaming outcomes. The relationship between escapism and negative gaming outcomes is well established (Hagström & Kaldo, 2014; Kaczmarek & Drążkowski, 2014; Kuss, Louws, & Wiers, 2012), but what is less understood is why some players that play to escape do not experience negative outcomes. As expected, and in line with previous research, escapism was associated with negative gaming
outcomes in the current study; however, the findings suggest that escapism alone does not necessarily lead to adverse effects.

As predicted, all four disengaged coping strategies were significantly positively correlated with both escapism and negative gaming outcomes, supporting the notion that problematic gaming may be associated with poorer real-life coping skills. This was not the case for individuals who reported more engaged coping styles, which mainly demonstrated the opposite pattern; particularly Social Support (emotion-focused) and Problem Solving (problem-focused) styles. However, it is interesting to note that the engaged coping style of Express Emotion was also significantly and positively correlated with escapism, but not with negative gaming outcomes. This finding suggests that, for some people, escapism may be beneficial, with strategies such as “blowing off steam” or “letting go of emotions” being positively associated with escapist motivations to play internet video games. Indeed, the concept of escapism has previously been the subject of debate. For example, Hagström and Kaldo (2014) pointed out that escapism has previously been measured by scales which combine negative, neutral, and positive aspects of the construct, and sought to delineate these potentially distinct factors. Demetrovics et al. (2011) and Kahn et al. (2015) indicate that escapism, as a concept should not be defined unitarily as simply avoiding reality. Escapism encompasses a range of other motivations; including the management of unpleasant moods, unwanted impulses and as a coping mechanism for problems such as stress, aggression and anxiety. This study adds to the argument that there is not one simple, standalone definition of escapism and that individual differences in emotional expression may play a further role in helping to define escapism more accurately.

In relation to the main moderation analyses, the engaged coping strategies of Problem Solving and Cognitive Restructuring were found to moderate the relationship between escapism
and negative gaming outcomes. This finding suggests that problem-focused engagement coping styles seem to protect individuals against the negative outcomes associated with gaming for escapism reasons. Without these strategies for coping with stress, however, escapist gamers were more likely to experience negative gaming outcomes. In Kardefelt-Winther’s (2014a) Model of Compensatory Internet Use it was suggested that the risk of negative outcomes was higher in gamers who played to escape if this relationship was preceded by psychosocial problems, i.e. stress and lower self-esteem. This study suggests that if the individual has a problem-focused coping style more generally, this risk of negative outcomes could be potentially reduced.

Engaged emotion-focused coping strategies, on the other hand, did not moderate the relationship between escapism and negative gaming outcomes. A potential explanation of this comes from Reinecke (2009), who suggested that using emotion-focused engagement strategies alone do not offer a solution to problems, but instead serve to facilitate problem solving. For example, when an individual expresses their emotions to cope with stress in their everyday life, but does not go on to develop solutions to the problem, they may be more likely to experience negative outcomes. Future work should aim to investigate this relationship more closely. A worthy avenue of research would be to examine the extent to which those who use only engaged emotion-focused coping experience negative outcomes associated with video gaming, in comparison to individuals who use both emotion and problem-focused coping strategies in everyday life.

Only disengaged coping via Wishful Thinking (e.g. “I wished the situation had never started’) moderated the relationship between negative gaming outcomes and escapism motivations to play. This relationship was only significant for individuals that tended to use this strategy at average and high levels. At lower levels, Wishful Thinking (again, a problem-focused strategy) did not impact on the negative outcomes associated with playing WoW in order to
escape from stress in the real world. This suggests that only those that used Wishful Thinking coping strategies at a medium to high level, and are motivated to play for escapism, experienced an increase in the negative gaming outcomes. Problem Avoidance, the other problem-focused disengaged coping strategy, did not play a moderating role; however, it was significantly negatively correlated with escapism motivation and negative outcomes more broadly. Hagström and Kaldo (2014) suggested that the avoidance of negative experiences in everyday life captured the concept of ‘negative’ escapism. Given the significant correlations between the disengaged coping styles, escapism and negative outcomes, this study suggests that the strategies of Wishful Thinking, Self-Criticism and Social Withdrawal may also potentially contribute to this concept. Further research is needed to explore these ideas.

Up to this point, research in this area has tended to focus more on young male gamers, predominately due to the sampling methods used. WoW online forums have been popular in the recruitment of participants for studies such as this in the past (Kardefelt-Winther, 2014b; 2014c). A strength of the current study was that it included a very good representation of female WoW players, more so than is usually read on the topic. While an analysis of gender differences was beyond the scope of the current study, previous research has pointed out that females report higher rates of escapist motivations than males (Billieux et al., 2013; Yee, 2006). Given that 41% of all gamers now identify as female (Entertainment Software Association, 2016), an examination of gender differences—and the changing demographics of the video game industry more broadly—would be a good area for future research.

The focus of the research was on a specific MMORPG, WoW. However, it should be noted that WoW is not the only MMORPG on the market. An up to date list of all MMORPGs available to play compiled by MMOs.com (2017) suggests that 1,103 MMORPG’s are currently
playable. Revolving around a system of goals and achievements, but also a reliance on social interaction, (Ng & Weimer-Hastings, 2005) the MMORPG as a genre has features that sets it apart from other genres of video game. Although the findings of this study are generalisable to other MMORPGs, a limitation of this study is a question as to its generalisability to other genres of video game or to other forms of internet use more broadly. It is important for future research to better understand if individual coping styles might have different implications for the negative outcomes associated with types of games that are less reliant on social interaction, for example, and whether different types of copers are drawn to certain games over others.

6. Conclusion

In summary, this study demonstrated that having an engaged, problem-focused style of coping with everyday stressors was not only associated with fewer negative outcomes in relation to escapism; it also seems to play a role in protecting individuals against negative gaming outcomes more generally. Previous work by Kardefelt-Winther (2014a) indicated the necessity to investigate the relationship between motivation to play online video games and psychosocial significantly moderate this relationship. The implications of these findings may offer new insight into the way we understand Internet Gaming Disorder, and should be included as a key variable in future research in the outcomes associated with online video gaming. Positive coping skills training, for example, could be used in conjunction with Cognitive Behaviour Therapy, a therapy which has already been applied as an intervention in the treatment Internet Gaming Disorder symptoms. As research into Internet Gaming Disorder increases due to its inclusion into the DSM-5 as a condition for further study (American Psychological Association, 2013), understanding the strategies that can reduce the potential impact of Internet Gaming Disorder, and potential interventions aimed at preventing it are pivotal.
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addictive play behavior in Massively Multiplayer Online Role-Playing Games.


Highlights

- Assessed the effect of coping on the relationship between escapism and outcomes
- Escapism does not necessarily lead to adverse effects
- Disengaged coping is positively correlated with negative outcomes
- Engaged problem-focused coping protects against negative gaming outcomes
- Coping style moderates the relationship between escapism and negative outcomes