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When and why is perceived congruity important for in-game advertising in fantasy games?

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Abstract: The present study investigates how the perceived congruity (the perceived level of fit between the execution of the in-game ad and the game environment) of in-game advertising (IGA) in fantasy games affects both players' attitude towards the IGA and their play intention of the fantasy game in which it is embedded, and how these effects are moderated by perceived IGA interactivity. An experimental study with actual fantasy game players (N = 619) following a 2 (Congruent IGA - Incongruent IGA) x 2 (Interactive IGA - Non-interactive IGA) between-subjects design was conducted. The results indicate that the perceived congruity of IGA reduces the perceived intrusiveness of the IGA and positively contributes to the perceived realism of the fantasy game. Intrusiveness and realism, in turn, influence players' attitude towards the IGA and their play intention of the fantasy game. Whilst the positive effect of perceived congruity through intrusiveness is reinforced by the perceived interactivity of the IGA, the effect of perceived congruity through realism is attenuated by perceived interactivity.

Dear Editor,

Attached to this submission you can find the paper written by Karolien Poels, Nathalie Dens, Laura Herrewijn, Patrick De Pelsmacker, and myself. This paper investigates how the perceived congruity of in-game advertising in fantasy games affects both players' attitude towards the in-game ad and their play intention of the fantasy game in which it is embedded, and how these effects are moderated by perceived interactivity of the in-game ad. We look forward to your feedback.

Yours sincerely,

Shana Verberckmoes

Highlights:

- Moderated mediation model is tested with perceived in-game ad (IGA) congruity.
- Perceived IGA congruity reduces perceived IGA intrusiveness.
- Perceived IGA congruity positively contributes to perceived game realism.
- Intrusiveness and realism influence attitudes towards the IGA and play intentions.
- The mediation effects are moderated oppositely by perceived IGA interactivity.

**When and Why is Perceived Congruity Important
for In-Game Advertising in Fantasy Games?**

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When and Why is Perceived Congruity Important for In-Game Advertising in Fantasy Games?

Abstract

The present study investigates how the perceived congruity (the perceived level of fit between the execution of the in-game ad and the game environment) of in-game advertising (IGA) in fantasy games affects both players' attitude towards the IGA and their play intention of the fantasy game in which it is embedded, and how these effects are moderated by perceived IGA interactivity. An experimental study with actual fantasy game players (N = 619) following a 2 (Congruent IGA - Incongruent IGA) x 2 (Interactive IGA - Non-interactive IGA) between-subjects design was conducted. The results indicate that the perceived congruity of IGA reduces the perceived intrusiveness of the IGA and positively contributes to the perceived realism of the fantasy game. Intrusiveness and realism, in turn, influence players' attitude towards the IGA and their play intention of the fantasy game. Whilst the positive effect of perceived congruity through intrusiveness is reinforced by the perceived interactivity of the IGA, the effect of perceived congruity through realism is attenuated by perceived interactivity.

Keywords: in-game advertising; congruity effects; interactivity; fantasy games; MMO.

1. Introduction

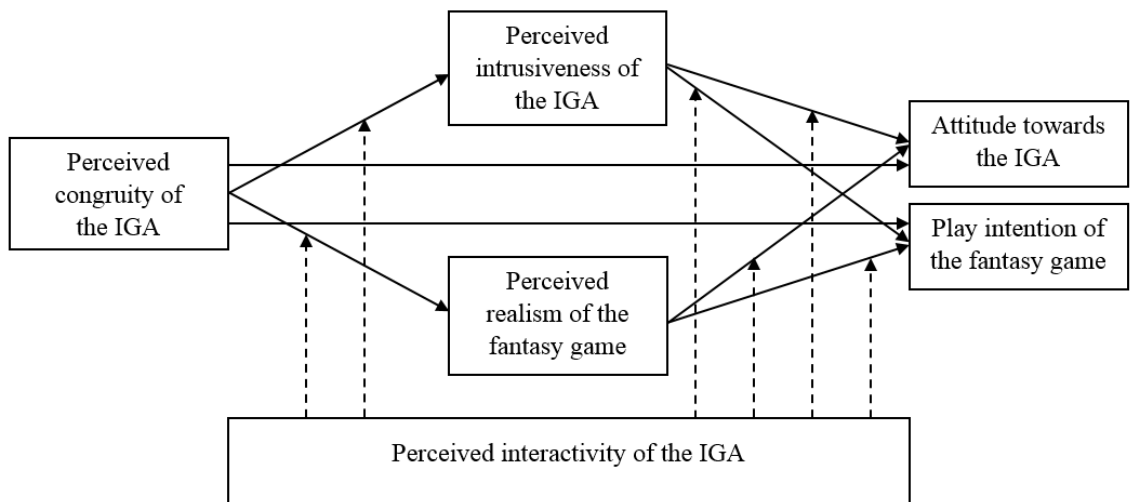
Digital games have invaded every part of the population as millions of people from all socio-demographic segments play them (Herrewijn & Poels, 2014). The digital game industry has become one of the largest entertainment industries globally and will continue to do so as the global market for digital games is expected to grow from \$68 billion in 2013 to \$96 billion in 2018 (DFC Intelligence, 2014; Herrewijn & Poels, 2014). Advertisers have correspondingly taken more notice of advertising in digital games and have increasingly invested in it. The industry is estimated at \$7.2 billion dollars in 2016 (DFC Intelligence, 2011). This figure includes *advergames* (games specifically designed and created to promote a brand, product, service or idea (Gross, 2010; Van Reijmersdal, Rozendaal, & Buijzen, 2012)), *around-game advertising* (traditional display or digital video units shown around the game window (Herrewijn & Poels, 2014)), and *in-game advertising* (IGA, the incorporation of advertisements within the worlds of digital games not specifically developed for advertising purposes (Herrewijn & Poels, 2015)). The present paper focuses on the latter. In the U.S., IGA is predicted to account for \$655 million by 2017 (eMarketer, 2013).

Previous research on IGA has investigated the effect of the congruity of the IGA with the game, defined as the level of fit between the execution of the IGA and the game environment (Chang, Yan, Zhang, & Luo, 2010; Huang & Yang, 2012; M. Lee & Faber, 2007; Lewis & Porter, 2010; Nelson, Keum, & Yaros, 2004). The results of these studies suggests that IGA that is congruent with the game content exerts positive effects on players' perceived sense of realism of the game, perceived intrusiveness of the IGA and attitudes and behavior towards the advertisements and the advertised brands and products. However, to our knowledge, no studies have examined the mediating processes through which congruity effects for IGA occur. The

present study therefore contributes to the debate by investigating two potential processes through which the effects of congruity for IGA occur.

More importantly, we study the moderating role of IGA interactivity on these processes to identify circumstances under which the effects of congruity can be enhanced or reduced. This interaction is also new to the literature on advertising in games. Specifically, we test a moderated mediation model in which the perceived intrusiveness of the IGA (the degree to which the IGA is perceived as intrusive by a player) and the perceived realism of the game (the degree to which the IGA contributes to a more realistic game environment) mediate the effect of the perceived congruity between an IGA and the game on players' attitude towards the IGA and game play intention, and the perceived IGA interactivity (the degree to which a player perceives that he or she can interact with the IGA) moderates these processes. This model is presented in Figure 1. Summing up, the first contribution of the present study is that it investigates the interplay of IGA congruity and interactivity, and the mediating role of perceived intrusiveness and realism in one comprehensive model. This contributes to our understanding of why and when congruity benefits consumer responses to IGA.

Figure 1: Conceptual Framework



We report the results of an experiment in which we manipulated the congruity and interactivity of an IGA in a massive multiplayer online role playing game (MMORPG). MMORPGs (e.g., World of Warcraft, Guild Wars) are detailed graphical games that are played online by multiple players at the same time (Caplan, Williams, & Yee, 2009). MMORPGs, together with individual role playing games (e.g., Dragon Age Inquisition, Final Fantasy), are often labeled as “fantasy games”, because they are set in a fantasy setting (Poels, Janssens, & Herrewijn, 2013). This in contrast to, for example, sports games (FIFA) or racing games (Gran Turismo), which are usually designed to mimic real life as closely as possible.

Currently, fantasy games have received little attention in research about IGA (e.g. Lewis & Porter, 2010; Nicovich, 2010). Nonetheless, fantasy games, and specifically MMORPGs, provide interesting opportunities for advertisers. Not only do MMORPGs contain a large number and variety of internationally dispersed players (Poels et al., 2013; Rezaei & Ghodsi, 2014), they are also part of the best-selling game genres (Entertainment Software Association, 2015) and are played longer than other types of digital games (Smyth, 2007). Additionally, players of MMORPGs generally watch less television than the general population and are thus less reachable through traditional advertising (Williams, Yee, & Caplan, 2008). An example of an in-game ad in a fantasy game is for instance the Pizza Hut campaign (2005) in the MMORPG ‘Everquest II’ where the players were able to place orders with Pizza Hut by typing a simple in-game command into the chat bar (“/pizza”). Further, several inventive in-game promotional ads were used by the American company ‘Razer’ that produces game devices and software. For instance, in 2011, players of League of Legends could register on the Razer site in return for a code that would get them limited edition in-game items that displayed the Razer logo (magical runes that gave beneficial effects to the player such as more speed or precision). Also, in 2014,

players of the MMORPG ‘Rift’ could equip a special cape that donned the Razer logo and weapons that bore the green signature color of the brand, in return for purchasing a product. A second contribution of the present study is therefore that it is set in the context of the under-researched genre of fantasy games. The results of the study can help advertisers to understand how they can tap into the potential of fantasy games as an advertising medium.

2. Theoretical Framework

2.1. The Importance of IGA Congruity

In general, congruity theory states that people like information that meets their expectations. Incongruent stimuli cannot easily be reconciled with existing cognitive structures and therefore often lead to negative evaluative reactions (Mandler, 1982). The effects of brand-context congruity on the attitude towards brands has been tested in the context of product placements (d'Astous & Seguin, 1999; Russell, 2002) and on websites (Moore, Stammerjohan, & Coulter, 2005). In these studies, consumers report more positive attitudes towards placements or advertisements that are (at least moderately) congruent with the context (e.g. d'Astous & Seguin, 1999; Moore et al., 2005; Russell, 2002).

In the context of IGA, congruity has mainly been conceptualized as the level of fit between a brand or product and the game theme (Huang & Yang, 2012; M. Lee & Faber, 2007; Lewis & Porter, 2010; Vermeir, Kazakova, Tessitore, Cauberghe, & Slabbinck, 2014). For example, M. Lee and Faber (2007) test differences between a brand of gasoline (congruent) versus a brand of pet food (incongruent) in a racing game, while Vermeir et al. (2014) consider the sports brand Adidas as congruent and the credit card brand Visa as incongruent in a soccer game. This conceptualization of fit is not straightforward in a fantasy game, as ‘real’ brands normally do not appear in these fantasy worlds as they would on the racing track or soccer field.

Therefore, we conceptualize congruity in the present study as the level of fit between the execution of the IGA and the fantasy game. For example, for a fantasy game set in a medieval theme (e.g. “World of Warcraft”), a modern billboard advertising a metallic soda can is considered as incongruent, whereas a wooden board advertising a flask is more congruent (see Method and Appendix for more details). This is because the wooden board and flask are made out of materials that would be present in medieval times whilst a modern billboard and metallic soda are made out of materials that are present in a contemporary environment, and thus would be seem out of place in medieval times.

Congruity is an important factor for consumer responses in a gaming environment as well. Studies show that IGA congruity exerts positive effects on players’ attitude and behavior towards the advertisements and the advertised brands and products, whilst incongruent IGA results in negative effects and may even lead to the avoidance of games that include IGA (Chang et al., 2010; Huang & Yang, 2012; M. Lee & Faber, 2007; Nelson et al., 2004). Moreover, these results were also found for advergimes. Peters and Leshner (2013) and Wise et al (2008) found that when there was a thematic connection between the advertised brand and the advergime (e.g. travel themed advergimes for online travel companies), participants had a more positive attitude towards the brands and higher levels of game enjoyment. Specifically for fantasy games, the results of Lewis and Porter (2010) suggest that a greater congruity between an IGA and the fantasy game results in more positive attitudes towards the IGA (i.e. acceptance of the ad). Players thus seem more prone to accept IGA in fantasy games when this matches the game context.

In the next sections, we develop hypotheses on why congruity leads to positive ad responses. In these hypotheses, we make use of the level of perceived congruity (the degree to

which a player perceives an ad to be congruent) instead of actual congruity (as manipulated by the researchers). This is because research has shown that perceived variables are a more relevant factor in predicting consumer responses (e.g., toward personalized ads (De Keyzer, Dens, & De Pelsmacker, 2015; Kramer, Spolter-Weisfeld, & Thakkar, 2007), or on interactive ads on websites (McMillan, Hwang, & Lee, 2003)).

2.2. IGA Congruity and Intrusiveness

Edwards, Li et al. (2005) state that advertisements are perceived as intrusive when they interrupt a person's goals. For example, when a person is searching online for particular information and a pop-up advertisement appears, the ad interrupts the search and can therefore be perceived as intrusive. Ads that are perceived as intrusive, in turn, trigger more negative attitudes towards the ad (Edwards et al., 2005; Ying, Korneliussen, & Grønhaug, 2009). Consumers that are exposed to intrusive ads will want to avoid them (Edwards et al., 2005) and thus may also have less intention to play a game containing intrusive ads.

Ads that are congruent with the media content may be perceived as less of an interruption, and thus less intrusive, than ads that are incongruent (Ying et al., 2009). Indeed, findings of Edwards, Li et al. (2005) show that pop-up ads that are congruent with the website content are perceived as less intrusive than pop-up ads that are incongruent. In games, it is especially important that IGA is perceived as congruent with the game context so that it does not interrupt the playing experience and break the immersion of the player (Nelson, 2002; Nelson et al., 2004). Immersion refers to the psychological experience of being drawn into an alternative reality, being involved with all possible senses in the game, and blocking out sensory input from the outside world (Jennett et al., 2008). It is a crucial factor for game enjoyment (Poels, Ijsselstein, & de Kort, 2014). Incongruent IGA might disturb the game play experience and

break the immersion of the players, as a result of which players perceive incongruent IGA as more intrusive (Chang et al., 2010; Lewis & Porter, 2010; Poels et al., 2013). Lewis and Porter (2010) also show that incongruent IGA (for an actual brand) leads to a significantly more negative attitude (i.e. annoyance with the IGA) toward the IGA than congruent IGA (for a brand existing only in the fantasy world). We propose that a reduction in intrusiveness can (partly) account for this effect. This study builds on the research of Lewis and Porter (2010) by investigating whether congruity effects for IGA could occur through perceived intrusiveness. Previous research (Chang et al., 2010; Edwards et al., 2005; Ying et al., 2009) suggests that ads that are perceived as less intrusive should trigger more positive attitudes towards the ad and a higher intention to play the game. We hypothesize:

H1: Perceived congruity exerts a positive effect on players' (a) *attitude towards the IGA* and (b) *play intention of the fantasy game*, mediated by a decrease in perceived intrusiveness of the IGA.

2.3. IGA Congruity and Realism

Not only is it important that the IGA is perceived as not being intrusive, it is also vital that the sense of realism of the game world remains unbroken. According to the narrative literature (Busselle & Bilandzic, 2008), there are two types of realism in fictional contents. First, there is external realism which is the extent to which the fictional content is similar to the actual world and, second, there is narrative realism which is the extent to which the fictional content is plausible and coherent within the fictional narrative. In a gaming context, Ribbens and Malliet (2010) draw a parallel distinction between 'absolute perceived realism' (the perceived statistical likelihood that a depicted event in a game could happen in the real world) and 'relative perceived realism' (the hypothetical sense of reality that is plausible in the game). Only the latter notion of

realism is applicable in this study as fantasy games take place in a fantasy world that is distinct from the actual world and highly unlikely true (Schultze & Rennecker, 2007).

To create a coherent fantasy world, game designers frequently draw on myths and legends for characters (elves, trolls, fairies, wizards, dwarfs, ...), settings (castles, dungeons, ...), plot themes (quests, ...), social structures (guilds, ...), and artifacts (rings, gems, swords, ...) (Schultze & Rennecker, 2007). Players hold fantasy genre schemata in memory containing information about the typical patterns of the fantasy world logic, such as the particular spatial and temporal setting, the typical plots and characters, and the rules specific to the fantasy world. Incongruent IGA deviates from these schemata. Players may view incongruent IGA as narratively or relatively unrealistic because it is incoherent and implausible within the fantasy world. For example: Within the world of J. R. R. Tolkien's "The Lord of the Rings", Gandalf's use of a handgun would be perceived as highly unrealistic, whereas his use of a staff (a magical weapon that does not exist in real life) would be perceived as realistic because it is consistent within the fantasy setting.

Congruent IGA can positively contribute to the perceived narrative or relative realism of the game play experience. Lewis and Porter (2010) and Nelson et al. (2002; 2004) indeed found that incongruent IGA reduced the games' perceived sense of realism whereas congruent IGA contributed to the games' perceived sense of realism. This study further builds on the research of Lewis and Porter (2010) by investigating whether perceived realism plays a mediating role through which congruity effects for IGA occur. Busselle and Bilandzic (2008) suggest that violations of narrative realism may lead to negative evaluations of the narrative and lessen a narrative's persuasive power. Conversely, perceived narrative realism leads to more enjoyment of a movie (Bilandzic & Busselle, 2011). We therefore propose that, when an IGA is perceived

as more realistic, this will lead to more positive evaluations of the IGA and a higher intention to play the game. Thus, the following hypothesis is formed:

H2: Perceived congruity exerts a positive effect on players' (a) *attitude towards the IGA* and (b) *play intention of the fantasy game*, mediated by an increase in perceived realism of the fantasy game.

2.4. *The Moderating Role of IGA Interactivity*

An important characteristic that distinguishes digital games from traditional media is interactivity, which allows the player to modify, control and change the course of events in the game (Herrewijn & Poels, 2014; Kim et al., 2015; Nicovich, 2010). IGA interactivity offers the possibility that players, through their game characters, can actively interact with the brand and use the advertised product in the game (Besharat, Kumar, Lax, & Rydzik, 2013). Examples of such interactive IGA are driving a branded car in a racing game, customizing and wearing branded sports clothes in a soccer game, or eating and drinking products that have a certain effect on the player character (e.g. regaining health or energy after drinking a branded drink) (Herrewijn, 2015). In contrast, non-interactive IGA are passive billboards, banners and posters that the player cannot interact with (e.g., around the soccer stadium or a racing track). Lee, Park et al. (2014) argue that passive brand placements create a meaningfully different brand-related experience compared to direct interactions with a brand. Through interactive IGA, players can become active participants in advertising and have the opportunity to feel, control and/or interact with a brand in a more vivid and immersive environment (Herrewijn, 2015; Nelson et al., 2004).

Research on the effects of interactivity mostly concerns websites. These studies consistently found a positive relationship between interactivity and outcomes such as the attitude toward the website and the brand (Cho & Leckenby, 1999; Jee & Lee, 2002; McMillan &

Hwang, 2002; Wu, 1999). However, research on interactivity in an IGA context is limited and only a few of these studies have focused on brand evaluation and behavioral intentions.

For instance, the results of Lee, Park et al. (2014) indicate that consumers have more positive attitudes toward a brand and stronger purchase intentions when playing advergaming with brand interactivity (i.e., brand logos had to be moved around to score when playing the games) rather than without brand interactivity (i.e., brand logos only in the background of the games). Although advergaming is distinct from IGA, the results could be extended. Research on interactivity of IGA is scarce. In one study, in line with the result on advergaming, Herrewijn (2015) shows that interactive IGA (i.e. branded soda and candy brands that could be picked up and consumed to restore players' health) resulted in significantly higher brand attitudes and purchase intentions than IGA that was integrated in a passive way (i.e. poster ads of soda and candy brands that were encountered). Thus, when the player is able to interact with an IGA and can actively use the branded product, this can lead to more positive attitudes towards the advertised products and brands. This could be because players can form meaningful relations with interactive brand placements in games (Joonghwa Lee et al., 2014; M. Lee & Faber, 2007).

As interactive IGA offer players an entertaining experience and a meaningful relation with a brand (Herrewijn, 2015), we expect that interactivity can reinforce the positive effect of congruent IGA (M. Lee & Faber, 2007; Lewis & Porter, 2010). An IGA that is both congruent and can be interacted with in the game may be perceived as even less intrusive and more realistic to the game environment than a (congruent) IGA that is non-interactive. This in turn may lead to players evaluating the congruent IGA that is also interactive as most positive and having a higher intent to play the game that contains this IGA.

As with congruity, we will make use of the perceived measure of interactivity in our analyses. Cauberghe, Geuens, and De Pelsmacker (2011) and McMillan, Hwang, and Lee (2003) found that perceived interactivity proved to be a more relevant factor in predicting responses to the context (e.g. attitude toward the website) and the embedded ad (e.g. attitude towards the ad) than actual interactivity (e.g. interactive website features). We propose the following hypotheses:

H3: The indirect effect of the perceived congruity of the IGA on players' *(a) attitude towards the IGA* and *(b) play intention of the fantasy game* through the perceived intrusiveness of the IGA is *more positive with increasing levels of perceived IGA interactivity*.

H4: The indirect effect of the perceived congruity of the IGA on players' *(a) attitude towards the IGA* and *(b) play intention of the fantasy game* through the perceived realism of the fantasy game is *more positive with increasing levels of perceived IGA interactivity*.

3. Method

3.1. Research Design and Stimuli

In order to test the hypotheses, we set up a 2 (congruent IGA – incongruent IGA) x 2 (interactive IGA – non-interactive IGA) between-subjects online experiment based on vignettes. A vignette is a short, carefully constructed description of a person, object or situation that is shown to respondents in order to elicit judgments about these scenarios (Atzmüller & Steiner, 2010). Vignettes were chosen because of the complexity to create an actual fantasy game in which IGA was manipulated. The reactions to the hypothetical situations can however provide insights about the behavior and decisions of consumers in real-life situations since vignettes simulate real-life experiences (Schoenberg & Ravdal, 2000). A vignette study is therefore a fitting choice for initiating research on how IGA can best be applied in fantasy games.

A screenshot of the MMORPG ‘Lineage 2’ (NCSOFT, 2003) was chosen to represent the fantasy game. For the IGAs, we created a fictitious brand of energy drink named ‘Fast Fizz’ to avoid confounds due to previous brand exposure or experience (Schneider & Cornwell, 2005). The vignettes contained one or more screenshots of a fantasy game in which the focal IGA was incorporated, together with textual information describing the context (see Appendix). The screenshot showed a billboard IGA with a medieval-looking castle in the background. The incongruent IGA displayed a modern billboard with a metallic soda can and the brand name and slogan in a modern font. The congruent IGA displayed a wooden billboard with a potion flask and the brand name and slogan in an embellished font. Both IGAs contained the same slogan: “Your dose of energy now”. In the interactive condition, participants first saw the billboard, after which they saw two additional vignettes describing how the player received the energy drink and their character drank it to restore its energy levels. The non-interactive condition showed the first vignette with the billboard only and explicitly described that players could not use or interact with the drink.

3.2. Participants

Participants were recruited to the online experiment through invitations placed on 27 online gaming forums. The invitations yielded a total useable sample of 619 participants over a two-week period (Male = 87.9%; Age: $M = 24.64$, $SD = 7.19$; Nationality = 44.1% American; Education = 50.4% Higher education). Players were told that the survey was about MMORPGs and that their answers would be processed anonymously and would not be used for commercial purposes. The players did not receive any compensation for completing the survey. The average time to complete the survey was 13 minutes. Participants were experienced MMORPG players; 34.7% of the participants had been playing MMORPGs for six to eight years and 37.8% had

been playing MMORPGs for nine years or more. The majority also played MMORPGs on a weekly (40.4%) or daily (49.4%) basis. Furthermore, 56.9% of the participants spent 1 to 3 hours on one MMORPG session and 38% spent more than three hours.

Participants were randomly exposed to one of the four conditions (Congruent/Non-interactive = 150, Incongruent/Non-interactive = 155, Congruent/Interactive = 161 and Incongruent/Interactive = 153). ANOVA and Chi-square tests showed no significant differences between the four conditions regarding age ($F(3,615), N = 619 = 1.286, p = .278$), education ($\chi^2(6), N = 619 = 4.06, p = .668$), general duration of a MMORPG-session ($\chi^2(12), N = 619 = 4.81, p = .964$), experience with MMORPGs ($\chi^2(12), N = 619 = 4.81, p = .964$), and frequency of playing MMORPGs ($\chi^2(9), N = 619 = 4.81, p = .318$). However, gender was significantly different between conditions ($\chi^2(3), N = 619 = 15.67, p = .001$), the ‘Incongruent/Non-interactive’ condition counted relatively less women (3.9%) than men (96.1%) than the other conditions (between 12.1% and 18.0% women). For this reason, gender will be entered as a covariate in the main analyses.

3.3. Measures

First, participants completed their age, gender, education (1 = ‘none’ / ‘primary school’, 2 = ‘secondary school’, 3 = ‘higher education’) and nationality. They then reported their experience with MMORPGs (1 = ‘less than one year’, 2 = ‘one to two years’, 3 = ‘three to five years’, 4 = ‘six to eight years’, 5 = ‘nine years or more’), frequency of playing MMORPGs (1 = ‘less than a couple of times per year’, 2 = ‘at least monthly’, 3 = ‘at least weekly’, and 4 = ‘daily’) and duration of an average session when playing MMORPGs (as leisure activity) (1 = ‘less than an hour’, 2 = ‘between one and three hours’, 3 = ‘more than three hours’). After that, participants saw the vignettes corresponding to their condition.

Attitude towards the IGA was measured with ten items on seven-point semantic differentials based on MacKenzie, Lutz et al. (1986) ($\alpha = .964$) (e.g. *'Not Attractive-Attractive'* and *'Unfavorable-Favorable'*). Further, play intention of the fantasy game was assessed with one item on a six-point scale based on the semantic differential of Jieun Lee, Lee, and Choi (2012) on which players had to indicate how likely it was that *they would play the MMORPG that contains this type of in-game advertising*'. Next, the perceived intrusiveness of the IGA was measured with eight items based on the seven-point Likert scale of Li, Edwards et al. (2002) ($\alpha = .940$) (e.g. *'The advertisement is intrusive'* and *'The advertisement disturbs the game experience'*). Furthermore, the perceived realism of the fantasy game was measured on a seven-point Likert scale composed of four items based on Poels, Janssens and Herrewijn (2013) ($\alpha = .951$) (e.g. *'The advertisement makes the MMORPG more realistic'* and *'The digital game environment appears more realistic because of the integration of the advertisement'*).

The perceived interactivity of the IGA was measured with four items on a seven-point Likert scale adapted from Lee et al. (2014) ($\alpha = .912$) (e.g. *'I can use the advertised product in the game'*). Lastly, the perceived congruity of the IGA was assessed with three items on a seven-point Likert scale based on Chang, Yan et al. (2010) and Till and Busler (2000) ($\alpha = .862$) (e.g. *'The advertisement matches the game'* and *'the advertisement does not fit together with the game'*). For each scale, the average scores across all items were used to compute the construct scores.

A Confirmatory Factor Analysis (CFA) was performed with Amos Graphics to test the composite reliability, the convergent validity and discriminant validity of the measurement items. The composite reliability (CR) should be above the threshold of .70 (Hair, Black, Babin, Anderson, & Tatham, 2006), which is the case as it ranges from .841 to .952 (see Table 1). To

establish convergent validity, the averaged variance extracted (AVE) for each construct should be greater than .50 to ensure that the construct is well explained by its observed items (Hair et al., 2006). This is also the case, as the AVE ranges from .639 to .833 (see Table 1). Moreover, to confirm discriminant validity, both the maximum shared variance (MSV) and the averaged shared variance (ASV) should be smaller than the AVE (Hair et al., 2006). These conditions are met (see Table 1). Lastly, the square root of the AVE is also greater for each construct than inter-construct correlation (see Table 1), further confirming discriminant validity.

Table 1: Test of composite reliability, convergent validity and discriminant validity

	CR	AVE	MSV	ASV	Correlation matrix*			
					Perceived congruity	Perceived intrusiveness	Perceived realism	Perceived interactivity
Perceived congruity	.841	.639	.458	.316	.800			
Perceived intrusiveness	.941	.669	.452	.279	-.672	.818		
Perceived realism	.952	.833	.458	.280	.677	-.596	.913	
Perceived interactivity	.921	.750	.039	.031	.197	-.171	.160	.866

* Diagonal values are the square root of the AVE of the construct

4. Results

4.1. Manipulation Checks

A manipulation check using t-tests showed that the congruent IGAs ($M = 3.14$, $SD = 1.62$) were perceived as significantly more congruent ($t(454) = 16.134$, $p < .001$) than the incongruent ones ($M = 1.48$, $SD = .80$). Also, the interactive IGAs ($M = 5.55$, $SD = 1.32$) were perceived as significantly more interactive ($t(509) = 28.38$, $p = .001$) than the non-interactive ones ($M = 2.31$, $SD = 1.52$). Therefore, our objective to create sufficient variance in perceived congruity and perceived interactivity was successfully achieved.

4.2. Hypotheses Testing

To test our hypotheses, we estimated two regression models using ‘Model 58’ of Hayes’ (2008) PROCESS macro for SPSS, one with the attitude towards the IGA, and one with play intention of the fantasy game as the dependent variable. As previously mentioned, the perceived measures were used in the analyses instead of the manipulated conditions.

The perceived congruity of the IGA is the independent variable, the perceived intrusiveness of the IGA and the perceived realism of the fantasy game are mediators, and the perceived interactivity of the IGA is a moderator (see Figure 1). Additionally, gender (0 = male, 1= female) was entered as a covariate. The analyses show that gender has no significant impact on players’ attitude towards the IGA ($b = .066, p = .555$), but has a marginally significant effect on players’ intention to play the game ($b = .228, p = .072$).

Hypothesis 1 states that perceived congruity will exert a positive effect on players’ (a) *attitude towards the IGA* and (b) *play intention of the fantasy game* mediated by a decrease in perceived intrusiveness of the IGA. The results show that perceived congruity of the IGA has a significant negative effect on perceived intrusiveness of the IGA ($b = -.568, p < .001$), and that perceived intrusiveness, in turn, has a significant negative effect on the attitude towards the IGA ($b = -.550, p < .001$) and on play intention of the fantasy game ($b = -.431, p < .001$) (see Table 2). Hypotheses 1a and 1b are thus supported.

Table 2
Unstandardized regression coefficients

	Perceived intrusiveness	Perceived realism	Attitude towards the IGA	Play intention
Perceived congruity	-.568***	1.697***	.099**	.134**
Perceived intrusiveness	—	—	-.550***	-.431***
Perceived realism	—	—	.064***	.031*
Perceived interactivity	-.041	.107	.096***	.025
Perceived congruity × Perceived interactivity	-.006	.032	—	—
Perceived intrusiveness ×	—	—	-.056***	-.037*

Perceived interactivity				
Perceived realism × Perceived interactivity	—	—	-.016***	-.017***
Gender	.345*	-.570	.066	.228

*** $p \leq .001$; ** $p \leq .010$; * $p \leq .050$

Hypothesis 2 posits that perceived congruity will exert a positive effect on players' (a) *attitude towards the IGA* and (b) *play intention of the fantasy game* mediated by an increase in perceived realism of the fantasy game. The results indicate that the perceived congruity of the IGA has a significant positive effect on the perceived realism of the fantasy game ($b = 1.697$, $p < .001$), and that perceived realism has a significant positive effect on the attitude towards the IGA ($b = .064$, $p < .001$) and the play intention of the fantasy game ($b = .031$, $p = .020$) (Table 2). Hypotheses 2a and 2b are therefore supported.

Additionally, the perceived congruity of the IGA has a significant positive direct effect on the attitude towards the IGA ($b = .099$, $p = .008$) and on play intention of the fantasy game ($b = .134$, $p = .002$) (see Table 2). As the indirect effects through intrusiveness and realism, and the direct effect are both significant and in the same direction (positive), these results suggest complementary mediation (Zhao, Lynch, & Chen, 2010).

Hypothesis 3 states that the indirect effect of the perceived congruity of the IGA on players' (a) *attitude towards the IGA* and (b) *play intention of the fantasy game* through the perceived intrusiveness of the IGA will be *more positive with increasing levels of perceived IGA interactivity*. To test this moderating effect of interactivity, we inspected the results using conditional effects analyses. The tables in this section illustrate the nature of the moderation by showing the effect of congruity on the dependent at three values of the moderator, i.e. the mean and the mean minus and plus one standard deviation. These values of the moderator are shown in the first column of the tables. The second column gives the sizes of these effects on the

dependent variable; the third column shows the confidence intervals of the effects. Confidence intervals that do not contain zero represent a significant effect.

The conditional effects show that the indirect effect of perceived congruity of the IGA on the attitude towards the IGA through perceived intrusiveness of the IGA becomes stronger with increasing perceived interactivity of the IGA (Table 3). Therefore, hypothesis 3a is supported. Similarly, the indirect effect of the perceived congruity of the IGA through perceived intrusiveness on play intention of the fantasy game is also reinforced by increasing perceived interactivity of the IGA (Table 3), which supports hypothesis 3b.

Table 3: Conditional effects of perceived congruity through perceived intrusiveness at different levels of perceived interactivity

Value of perceived interactivity	<i>On attitude towards the IGA</i>		<i>On play intention of the fantasy game</i>	
	Effect size (b)	95% confidence interval	Effect size (b)	95% confidence interval
Low (-2.157)	.238	[.167 ; .324]	.195	[.123 ; .287]
Moderate (.000)	.312	[.255 ; .377]	.244	[.188 ; .308]
High (2.157)	.389	[.313 ; .470]	.296	[.219 ; .378]

Hypothesis 4 states that the indirect effect of the perceived congruity of the IGA on (a) *the players' attitude towards the IGA* and (b) *the play intention of the fantasy game* through the perceived realism of the game will be *more positive with increasing levels of perceived IGA interactivity*. The conditional effects analyses show that the indirect effect of perceived congruity of the IGA on the attitude towards the IGA through perceived realism of the fantasy game actually becomes weaker and insignificant with higher degrees of perceived IGA interactivity (Table 4). Thus, hypothesis 4a is rejected. We see the same pattern for play intention of the fantasy game. Therefore, hypothesis 4b is also rejected.

Table 4: Conditional effects of perceived congruity through perceived realism at different levels of perceived interactivity

Value of perceived interactivity	<i>On attitude towards the IGA</i>		<i>On play intention of the fantasy game</i>	
	Effect size (b)	95% confidence interval	Effect size (b)	95% confidence interval
Low (-2.157)	.160	[.096 ; .232]	.109	[.046 ; .176]
Moderate (.000)	.109	[.065 ; .157]	.052	[.010 ; .097]
High (2.157)	.054	[-.002 ; .108]	-.009	[-.062 ; .045]

5. Discussion and Conclusion

The results of this study confirm that the perceived congruity of an IGA benefits fantasy game players' attitude toward the IGA as well as their intention to play the specific fantasy game (M. Lee & Faber, 2007; Lewis & Porter, 2010). Importantly, this study is one of the first to document two underlying processes of the effects of IGA congruity. Our results indicate that the perceived IGA congruity decreases the perceived intrusiveness of the IGA and especially increases the perceived realism of the fantasy game. Earlier studies have also documented that incongruent IGA is perceived as more intrusive than congruent IGA (Edwards et al., 2005; Lewis & Porter, 2010) and that congruent IGA contributes to a game's perceived sense of realism (Lewis & Porter, 2010). However, these studies have not explicitly investigated how intrusiveness and realism mediate the influence of (perceived) congruity on the IGA attitude and game play intention. Our results indicate that it is particularly the decrease in perceived intrusiveness that drives players' attitude towards the IGA and game play intention, while the increased perceived realism exerts a significant, but small effect. As a result, the indirect effect of perceived IGA congruity through its perceived intrusiveness is much bigger than that through perceived realism. Perhaps for fantasy games, realism may not be as important as in other game genres (e.g. racing and sport games). Results of Poels et al. (2013) indicate that the

'believability' is negatively related to the general attitude towards IGA with frequent players of role-playing games, a fantasy game genre. Therefore, IGA in fantasy games do not necessarily need to seem realistic in order to be well received, they may be surreal. What is more important, is that they should not intrude on players' game play experience.

Further, we researched whether both indirect effects are moderated by the perceived interactivity of the IGA. The indirect effect through intrusiveness becomes stronger with increasing levels of perceived interactivity. This reinforced effect is in line with our expectations. While congruent IGA in itself reduces the perceived intrusiveness of the IGA, the negative effect of intrusiveness on the attitude towards the IGA and the play intention of the game is less pronounced when players can also actively interact with the IGA and in this case, use the advertised product to benefit their avatar. This type of IGA may especially contribute to an entertaining game play experience (as opposed to a static billboard), which leads to a more positive attitude towards the IGA and a higher intention to play the game. By providing an active, entertaining and unintrusive game play experience, players could form meaningful relations with interactive brand placements in games, especially if the IGA is congruent with the game (Joonghwa Lee et al., 2014).

Contrary to our expectations, the indirect effect of IGA congruity through the perceived realism of the fantasy game becomes smaller and insignificant with increasing levels of perceived interactivity of the IGA. Whilst IGA congruity contributes to perceived realism of the game, the positive effect of realism on the attitude towards the IGA and the play intention of the game is less pronounced with a high IGA interactivity. Perceived interactivity exerts a positive effect in the attitude toward the IGA directly. It does not seem to matter, then, whether that IGA is also perceived as realistic.

6. Managerial Implications

The present study has practical implications for brand managers and game developers. Since fantasy games contain a large number and a variety of international players (Rezaei & Ghodsi, 2014), our results provide advertisers with suggestions to more effectively reach these players. This is not a simple feat as previous research indicates that IGA in fantasy games is considered as more intrusive and unrealistic than IGA in more realistic genres, such as racing and sports games (Nelson, 2002; Poels et al., 2013). This is because IGA can be more easily implemented in modern and contemporary settings where advertising already exists in the real world (e.g. race and sporting events). However, in fantasy games, IGA must be executed more carefully. Therefore, advertisers and game developers who want to make use of IGA in fantasy games should make sure that the IGA is congruent with the fantasy game environment, in order to not intrude on players' game play experience and positively contribute to player's sense of narrative realism. This leads to more positive attitudes towards the IGA and a higher game play intention. The latter is interesting for both advertisers, who can benefit from a greater brand exposures when players play the game more often, and game developers, who may receive more revenues from an increase in game sales and advertising income. That, in turn, may further lead to a better quality of newly developed games, which is beneficial for players and may cause a positive cycle.

Furthermore, making the IGA interactive should also be considered by advertisers and game developers as this reinforces the effect of congruity of the IGA on the attitude towards the IGA and play intention through a decrease in perceived intrusiveness of the IGA. Making advertisements in games interactive might provide players with a more entertaining and meaningful brand-related experience as they can directly interact with these brands. For example,

a protective armor that shows a brand logo that is integrated in a congruent and coherent manner with the fantasy world, and gives a higher defense to the player is an example of an interactive and congruent IGA. It does thereby not seem essential that the IGA is also perceived as realistic. However, as our results point out, with non-interactive IGA it is relatively more important to make the IGA appear more realistic in the game world.

7. Limitations and Future Research

This study also has limitations that provide opportunities for further research. As the present study uses vignettes that contain text and images of IGA, our findings cannot be fully generalized to a situation in which players play an actual fantasy game. Although vignettes are commonly used in research on marketing and consumer behavior, they have certain limitations as experimental stimuli (d'Astous & Seguin, 1999). For instance, they create an artificial environment that is not entirely representative of normal situations. Moreover, vignettes do not allow for an actual interaction with the IGA. Even though our manipulation checks confirm that our 'interactive' conditions are perceived as significantly more interactive than the non-interactive conditions, the results could have been even stronger with an actual game. Future research should therefore use games with manipulated IGA as stimuli to see if the findings in this study can be generalized to realistic situations where players actually play a fantasy game with IGA with which they can interact (or not).

Further, it should be noted that, for the 'congruent' condition, participants' mean ratings of perceived congruity were below the scale midpoint ($M = 3.14$, $SD = 1.62$), suggesting that, on average, respondents did not find the 'congruent' condition very congruent. Future research should test whether this is a given fact for all IGA in fantasy games (i.e. floor effect), or how perceptions of congruity could be further enhanced.

Additionally, brand awareness is also important in testing the effectiveness of IGA. Several researchers (e.g. Huang & Yang, 2012; M. Lee & Faber, 2007) found that incongruent IGA is recalled better since it draws more attention because of its new, distinctive and prominent character (Mandler, 1982). This suggests that, if brand awareness is the primary goal of the advertiser, than it is best to place the brand in an incongruent game setting. However, as the present study points out, it is important to realize that placing brands in incongruent game settings can have a negative direct and indirect effect on attitudes towards IGA and on play intention of the fantasy game. Lewis and Porter (2010) argue that perhaps moderately congruent may offer the best condition for brand awareness and evaluation. Future research should ascertain which level of perceived congruity of the IGA has positive or negative effects on both brand awareness and attitudes towards IGA.

Furthermore, we did not measure brand effects such as the attitude towards the brand or purchase intention of the products. Future studies can also take this into consideration. Moreover, as we made use of fictitious brands, future studies should investigate the effect of existing and well-known brands. In addition, asserting the effectiveness of IGA in using various product categories besides energy drinks and clothes is also a possible avenue in research.

Immersion was not taken into account in this study. Research illustrates that breaking immersion could be a consequence of intrusive advertising in games (Lewis & Porter, 2010; Poels et al., 2013) and that unrealistic media content can negatively affect player experiences such as immersion (Busselle & Bilandzic, 2008). Including immersion as a mediating variable is an interesting direction for future research, in particular when actual games are used as stimulus material.

Next, the effects of different forms of IGA in fantasy games could also be tested in future research. For instance, IGA in loading screens or pause screens might be perceived as less intrusive as these interrupt the game experience less since the player is waiting for the game to load or is taking a break. Interactive IGA could also be examined in different fantasy game scenarios such as in certain storylines or as in-game items. For example, integrating a branded product as part of a quest in a fantasy MMORPG might have positive effects on the evaluation of the brand. Receiving a free, sponsored product in the game store such as certain armor, weapons or potions with beneficial effects is another possibility for research. The use of humor in IGA might also work in some fantasy games that do not take themselves too seriously (e.g. World of Warcraft, Guild Wars 2, Wildstar), but this needs to be further researched. Furthermore, the kind of paying model of the fantasy MMORPG is also important. IGA in free-to-play fantasy MMORPGs could be more commonly accepted than IGA in pay-to-play fantasy MMORPGs or in buy-to-play fantasy MMORPGs. Lastly, the characteristics of the players could also be of import. Players have different motivations for playing MMORPGs that might affect their responses towards IGA in fantasy games.

8. References

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9. Appendix: Stimulus Examples

A :Incongruent, Non-Interactive Condition

Imagine that you are playing a fantasy MMORPG. Whilst taking a stroll around this castle you come across this advertisement. You stop and take a good look at it. On the advertisement you can see that a

brand of energy drinks is being promoted. You can also see a picture of the advertised product, an energy drink, on the advertisement. You cannot use nor interact with this energy drink in the game.



B: Congruent, Interactive Conditions

Imagine that you are playing a fantasy MMORPG. Whilst taking a stroll around this castle you come across this advertisement. You stop and take a good look at it. On the advertisement you can see that a brand of energy drinks is being promoted. You can also see a picture of the advertised product, an energy drink, on the advertisement.



You can click on the advertisement and receive the energy drink as a free gift in the game.



You can then interact with and use the energy drink you have received in the game. When you use the energy drink it heals all of your HP and MP.

