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Extending Disposition Theory of Sports Spectatorship to ESports

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Just as theorists predicted, developments in sports spectatorship technology have changed the way we think about and enjoy sports. Each year, eSports amasses a larger following. Though its existence traces back to the early 1980s, competitive gaming has emerged recently as a superpower that is seemingly impossible to ignore. But why do hundreds of thousands of people gather at their computers, or at sold-out arenas to watch players compete at video games? In this study, eSports are analyzed through the lens of the disposition theory of sports spectatorship. The results indicate that the enjoyment of watching eSports competitions operates similarly to that of traditional sports spectatorship. Familiarity with the teams and the sport or game being viewed seems to be an important factor in how eSports are enjoyed, and evidence suggests that watching eSports engenders the same or similar reactions as does watching traditional sports. This study aims to pave the way for future, more robust research on eSports spectatorship and why people enjoy watching other people play video games.

Keywords: eSports, affective disposition theory competitive gaming, sports spectatorship, League of Legends, suspense

Amazon purchased the rights to Twitch.tv in August 2014 for nearly $1 billion under the direction of founder Jeff Bezos. At the time, the purchase was surprising to some (Popper, 2014), but it may have foreshadowed the bright future of televised or streamed eSports (Kim, 2014). Now, the city of Arlington, Texas, and NGAGE have constructed a $10 million, 100,000 square-foot eSports arena within walking distance of the Dallas Cowboys' AT&T Stadium (Dachman, 2019). These types of developments demonstrate the need for studies that investigate the nature of eSports spectatorship, and beg the question: Are eSports and traditional sports similar in terms of how spectators view and react to them? The similarities between eSports and traditional sports at a base level hint that the next logical step is to investigate how known entertainment theories may help explain the phenomenon.

Raney (2003) noted that the developments in sport spectatorship technology and globalization would change the way we use, think about, and enjoy sports. That prediction seems to be coming true, because in just over a decade, a new form of sporting competition, eSports, has gained traction among

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viewers. Worldwide competitive gaming has existed since the early 1980s (Lynch, 2016), with Nintendo's *Donkey Kong* and Atari's *Space Invaders* hitting the mainstream (although some accounts point to a *Spacewar!* competition in 1972 as the first instance of eSports; Li, 2016). Certain arcade games such as *NBA Jam* and *Virtua Racing* were popular in what has been called the arcade era of eSports (Lee & Schoenstedt, 2011). True eSports competition that is similar to what we know today did not arrive until the late 1990s, with the Red Annihilation *Quake* tournament (Edwards, 2013). The establishment of eSports organizations like KeSPA in 2000 and Major League Gaming (MLG) in 2002 (Edwards, 2013) succeeded in professionalizing the craft. Now, eSports has demonstrated its legitimacy, with recent championships selling out arenas like the Staples Center in Los Angeles and The Bird's Nest in Beijing (Brown, Billings, Murphy, & Puesan, 2018; Markazi, 2017). These developments are leading scholars and content creators to think about and treat eSports similarly to traditional sports (Kane & Spradley, 2017).

How eSports Compare With Traditional Sports

ESports are video-game competitions held between two individuals or teams playing head-to-head. Such competitions can be held over a broadband Internet connection at a distance or over LAN in the same arena. Types or genres of games used in eSports competitions range from fighting games like *Street Fighter*, first-person shooters like *Overwatch*, real-time strategy games like *StarCraft*, and multiplayer online battle arena (MOBA) games like *League of Legends* (*LoL*) or *Defense of the Ancients 2* (*DOTA 2*). Opinions vary as to the validity of classifying and treating eSports true sports, and eSports players as athletes.

There are number of similarities between eSports and traditional sports (Kane & Spradley, 2017). For example, just like traditional sports, each eSports league operates on a set schedule for matches, with the off-days being utilized for practice (either solo or with teammates), watching film (or video) of their respective game, and then brainstorming new strategies to get ahead of their opponents. Both traditional sports and eSports have a specified roster for coaches, players, and substitutes and are penalized for playing members of the team not on said roster. Both traditional sports and eSports have a defined set of rules and regulations, but for eSports, the rules are monitored and enforced primarily through computer algorithms within the game's design, whereas traditional sports are governed by the officials on the field or court. One unfortunate similarity is that eSports have suffered from doping and performance-enhancing drug abuse (e.g. Adderall or other stimulants), with the problem being addressed by the International Esports Federation (Kamen, 2015).

When comparing eSports to traditional sports, there are a handful of differences that stand out. The first is the amount of physical exertion during game play; obviously, eSports require less. But what eSports players lack in physical exertion they make up for in critical-thinking and problem-solving capabilities. Eugene "Pobelter" Park, midlaner for the Immortals *LoL* team, was analyzed while playing a game of *LoL*, then took the Wonderlic Cognitive Ability Test, designed to assess prospective NFL draftees' quick-thinking and problem-solving skills. Park scored a 41 (70% higher than the average NFL quarterback; Erzberger, 2016).

The second difference stems from Hollist's (2015) recognition of the eSports industry's lack of regulation, specifically when it comes to the handling of players. ESports are at a stage similar to

adolescence, but they are beginning to rival traditional sports in "viewership . . . advertising and merchandising," proving themselves as a paramount in video game entertainment, which most certainly "warrants regulation" (Hollist, 2015, p. 847). However, within the past few years, some eSports organizations have begun to model their operations after those of the NFL or Major League Baseball. One example is Riot Games' franchising of the North American League Championship Series (Spangler, 2017), and Blizzard, developer of *Overwatch,* creating the *Overwatch* League (Molina, 2016).

One other strong argument against competitive gaming as a sport is the intrinsic involvement of computers and algorithms to play the game. Though the player is generally not directly involved with the programming, one cannot go to the store, buy a computer for less than $50, and immediately play the game. This coincides with the ideal of physical activity and going outside versus remaining indoors at a desk for most of the day. Some players do indeed practice anywhere from 12 to 14 hours a day, eat food at their desks, and sleep 4–5 hours each night, but this is much more extreme than the standards of most players in North America (Jacobs, 2015).

Some traditional sports athletes have come to the defense of eSports. Gordon Hayward, small forward for the NBA basketball team Utah Jazz, defended eSports' validity against the anti-eSports arguments of Colin Cowherd (2015), who painted eSports players as nonathletic because of their lack of physical activity. Hayward argued that, just as in traditional sports, there are different eSports, varying by genre, and that each genre is different from the next, with differing rules and regulations within each game itself. Hayward argued that it is these intricacies that make eSports so confounding, yet so incredible to observe live, much like traditional sports. Those arguments are corroborated by Kane and Spradley (2017), who propose that eSports should be categorized as sports and considered as such by the NCAA. They present a compelling argument that eSports qualifies as a sport by many metrics. One of those metrics is actually physical exertion. Kane and Spradley point out that, according to previous research, playing eSports games causes elevated heart rate as well as high-enough levels on the Borg RPE and CR10 to indicate physical exertion (Li, 2016; Rodriguez et al., 2016). This evidence counters arguments that eSports are nonathletic activities. But even if such an argument seems difficult to accept, there is precedent for categorizing non-physically strenuous activities as sports, such as chess. Chess has been recognized as a sport by the German Olympic Sport Confederation, and requires considerable mental, if not physical, exertion (Hallmann & Giel, 2018). Video games require similar mental focus and quick decision making (Lieberman, 2006). These similarities and arguments lead us to propose that eSports and the enjoyment of watching them can be compared with traditional sports spectatorship. We propose to do this via application of the disposition theory of sports spectatorship to eSports viewers.

Application of Disposition Theories to Esports

At this point, academic research on the topic of eSports is nascent. Some research has focused on motivations for eSports spectatorship and how it relates to traditional sports spectatorship (Brown et al., 2018). Other ethnographic work leads to the conclusion that eSports will someday rival traditional sports in terms of audience as well as social and economic influence (T. L. Taylor, 2012). H. Taylor (2018) also juxtaposes the early attempts to bring eSports into the spotlight on television in the early 2000s with the rise of livestreaming on Twitch in the late 2010s. She traces the evolution of the craft of broadcasting video

games over the Internet, noting that eSports and gaming livestreaming has been successful because of the unique approaches streamers and eSports broadcasters take to connect with fans. She points out that Twitch has enabled fans to interact with streamers, and streamers with fans live, which has enabled the growth of viewing communities that are incredibly loyal. Streamers are now much more than just broadcasters. They are brand and community managers as well (H. Taylor, 2018).

As far as the scientific study of eSports spectatorship is concerned, Wagner (2006) coined the term "eSports science." He noted that the connection between traditional sports and eSports allows for academics to apply theoretical approaches and methodologies from traditional sports to eSports (Wagner, 2006). Xiao (2019) identified three factors that had a positive impact on attitudes toward eSports: aesthetics, drama, and escapism. Positive attitudes toward eSports were also determined by subjective norms, meaning that if eSports viewership was seen as a normal and acceptable behavior among family and friends, attitudes toward it were more positive. Xiao (2019) also reported the importance of suspense as dramatic action that drove viewer's future intentions to watch eSports.

Motivations of viewers are not the only important factors to understanding the phenomenon of sports spectatorship (Qian, Zhang, Wang, & Hulland, 2019). There are certain features of the medium (in this case, eSports broadcasts on the Internet) that draw spectators in. Chat-room features, streamer traits, stream quality, and virtual rewards are key elements that eSports viewers consider when choosing if and what to watch (Qian et al., 2019).

This extant research has given valuable perspectives on some of the factors that lead people to watch and enjoy watching eSports. However, understanding of the affective mechanisms behind enjoyment of eSports spectatorship is still lacking.

One important theory that explains why people enjoy mediated entertainment is affective disposition theory (ADT), which was developed by Zillmann and Cantor (1976). ADT has been used to depict how individuals form affiliations with people and characters, and how enjoyment of mediated presentations is affected by those dispositions. Disposition theories that first addressed humor and drama were later used to analyze enjoyment of traditional sports (Sapolsky, 1980), leading to numerous writings on and studies of sports spectatorship (Bryant, Brown, Comisky, & Zillmann, 1982; Hirt, Zillmann, Erickson, & Kennedy, 1992; Raney, 2003; Zillmann, Bryant, & Sapolsky, 1989). These works (and others) culminated in an understanding of the basic principles of the disposition theory of sports spectatorship: (1) Enjoyment from observing a team or player succeed increases with positive affective dispositions and decreases with negative affective dispositions toward that team or player, and (2) enjoyment from observing a team or player fail decreases with positive affective dispositions and decreases with positive affective dispositions toward that team or player.

Due to the similarities between eSports and traditional sports, the process of forming dispositions toward players and teams, and deriving enjoyment from sport spectatorship, should transfer over to eSports spectatorship. Considering eSports through the lens of ADT answers Wagner's (2006) call for the application of extant theory to our understanding of eSports. The principles of ADT generally, and the disposition theory of sports spectatorship specifically, logically adapt to eSports spectatorship.

The disposition theory of sports spectatorship predicts that enjoyment is derived from observing a clash between two teams or competitors who are intensely opposed to one another. Quite often, a dramatic conflict is built up and perhaps embellished by commentators and sports journalists; lending credence to the notion that enjoyment is best wrought when a loved competitor or team triumphs over a hated opponent or rival team (Bryant et al., 1982; Raney, 2003; Sapolsky, 1980; Zillmann et al., 1989).

According to the evidence we have summarized so far, positive dispositions should foster enjoyment if the liked team wins. Therefore, we predict the following:

H1: Positive dispositions will positively and significantly predict enjoyment when a liked team triumphs in both sports and eSports conditions.

Disposition theories also analyze other affective responses to predict levels of enjoyment. In particular, suspense is a crucial component of enjoyment of sports spectatorship (Bryant, Rockwell, & Owens, 1994). Suspense has been found to increase enjoyment of sporting contests. Viewers in suspense also care more about the outcome, report that they like the winning team more, and find the game less boring than viewers watching a non-suspenseful game (Bryant et al., 1994). Furthermore, suspense that builds as the game goes on is a significant contributor to enjoyment (Peterson & Raney, 2008). It is the unfolding nature of suspense (i.e., the level of relative uncertainty about the outcome of the contest), which fluctuates as the game goes on, that contributes significantly to enjoyment (Peterson & Raney, 2008). Therefore, we predict the following:

H2: Suspense will positively affect enjoyment among eSports viewers just as it does among sports viewers, regardless of which team wins or loses.

Furthermore, we propose that enjoyment of mediated sports contests is wrought through a process of disposition formation and feelings of suspense. This process is best understood not as discreet lines of influence, but as two affective responses—dispositions and suspense—working together to produce enjoyment (Brooks, 2013; Knobloch-Westerwick & Keplinger, 2006; Raney, 2011; Zillmann, 1980). Therefore, we predict the following:

H3: A path model describing the impact of dispositions toward the opposing teams on both suspense and enjoyment, with suspense also affecting enjoyment directly, will demonstrate an affective process that contributes to enjoyment in both conditions.

To further investigate possible differences between sports and eSports conditions, we propose to compare the strength of each path of influence between the two models:

RQ: What differences, if any, will there be between the corresponding paths of influence in each model?

For example, the strength of the path between disposition toward the favored team and enjoyment in the sports condition will be compared with the strength of the same path in the esports condition using a *t* test.

Methodology

Two conditions, "sports" and "eSports," were specified, and participants were randomly assigned to a condition. The resulting design was a randomized experiment, as defined by Shadish, Cook, and Campbell (2001).

Narrative and Stimulus Materials

The content chosen for the eSports condition of the study stemmed from the recognized Europe versus North America rivalry in professional eSports (Hyun, 2017). The rivalry between the two regions has existed for nearly a decade, particularly in Riot Games' *LoL* (Lolesports Staff, 2017). MOBAs are regularly seen as the most highly regarded eSports genre (H. Taylor, 2018), earning the most consistent viewership and highest prize pool per event. Of the MOBAs, *LoL* has been acknowledged as the most popular of the genre (Brown et al., 2018) and consistently ranks among the top five most popular eSports games (Dewley, 2019). In a 2017 year-in-review report, *LoL*-related events alone earned nearly 500,000 viewers, with over a billion overall hours viewed (Lolesports Staff, 2017). Because of this, a *LoL* match was appropriately used as representative stimuli.

A previously played match with an extremely close ending was selected. The match was played between Team SoloMid (TSM), one of the most popular North American *LoL* teams; and G2 Esports (G2), one of the most successful European *LoL* teams. TSM was the winner in the chosen match.

To support viewer's motivation for viewing the match, a background narrative was constructed. The narrative highlighted an intense rivalry between TSM and G2. The narrative particularly noted that TSM's star Svenskeren had a personal rivalry with G2's Trick, and that the relationship between the two was contentious. The narrative intentionally painted Trick of G2 as a dishonorable "trash talker," and his opponent, TSM's Svenskeren, as a stalwart team-focused competitor. This manipulation was intended to guide the viewers to favor TSM somewhat over G2, but it was not strongly biased to convey a sense of authenticity. The real relationship between the two teams can be considered as a rivalry, but not overly contentious.

The content chosen for the sports condition of the study was a collegiate men's basketball game between the home team of the school where the study was conducted (Baylor University) and one of their chief rivals (Kansas State University). This game was selected because of its close, down-to-the wire ending, and because it provided a testing ground for the influence of disposition on enjoyment in the context of a suspenseful game. All participants were university students, and therefore were likely to have strong positive dispositions toward their team. The intent of showing a past game between known teams was to replicate results from past sports spectatorship studies (Bryant et al., 1982; Comisky & Bryant, 1982; Sapolsky, 1980) and to provide a point of comparison for traditional sports and eSports.

A narrative was constructed for the sports condition to provide consistency between it and the eSports condition. In the narrative, Kansas State's Marcus Foster is painted as a dishonorable trash talker, and Baylor's Isaiah Austin was portrayed as a stalwart and confident team player. This manipulation likely had a ceiling effect with respect to how positive a disposition could be generated toward Baylor, because

most participants were already familiar with the teams, and most were predisposed toward Baylor. In the game chosen for the basketball condition, Baylor was victorious over Kansas State. Manipulation checks were done to gauge whether or not participants were or became positively disposed toward the expected "hero" teams (TSM and Baylor) after the narrative, and if they became significantly less positively disposed toward the "villain" teams (G2 and Kansas State).

Participant Selection

Each of the 197 participants attended Baylor University, a midsized (approximately 17,000 undergraduate students) university in the mid-western United States. They ranged from 18 to 34 years of age, with 89 males and 107 females. Participants were 71.6% Caucasian (n = 141), 9.6% African American (n = 19), 9.6% Asian (n = 19), 8.6% Hispanic (n = 17), and 0.5% Native American (n = 1). Participants registered for an experimental session online, and professors from the university offered extra credit as an incentive for their participation (among other comparable extra credit options for their classes). All questionnaires were administered as an online survey constructed in Qualtrics. The survey was set to deliver post-stimulus questions in random order. Participants answered the questionnaire and viewed the stimulus material on individual PCs equipped with headphones and in isolated rooms in the school's Media Effects Research Lab.

There was no adequately large group of established eSports fans available for testing, so the study involved many who were unfamiliar with either of the eSports teams featured in the stimulus material. Because of this, an original tutorial on *LoL* was created. The tutorial explained, step by step, the role each player could take on, as well as major and minor objectives in the game. As expected, the majority of the participants (~84%) reported little to no prior interest in eSports. This was not of issue for the 95 of the 197 (48%) participants who were randomly assigned to the sports (basketball) condition. Of the 102 participants (52%) assigned to the eSports (*LoL*) condition, 47 reported a moderate to strong interest in eSports. Twenty-five participants had a moderate to strong interest in *LoL* in particular.[1]

Given that more than half of the eSports condition did not have a prior interest in eSports, a follow-up measure of understanding of the game was given after viewing. Twenty-five participants in the eSports condition reported that they did not understand the game (0 on a scale ranging from 0 to 4); therefore, they were eliminated from the analysis. All those who indicated that they understood the game were retained for the analysis. The remaining and final sample for the eSports condition was n = 79 (72% Caucasian, 41% female). In the sports condition, all n = 94 were retained (78% Caucasian, 61% female). A tutorial was also shown to participants in the sports condition (Ly, 2014).

Procedure

On arriving in the lab, participants were seated at a PC station in an isolated room. They were presented with the pretest questionnaire that assessed prior knowledge of and interest in sports, eSports,

[1] Interest in eSports and in *LoL* was assessed using two questions answered on a 5-point Likert-type scale: "Please indicate your interest in eSports in general"; and "Please indicate your interest in League of Legends."

basketball, and *LoL*. Participants watched the tutorial and then read the narrative for their respective conditions. They then viewed the edited game, followed by the posttest questionnaire. The posttest questionnaire assessed disposition toward each team, suspense, and enjoyment, as well as helpfulness of the tutorial, understanding of the game, and demographic information.

Measures and Analysis

Disposition toward each team was measured using two items adapted from previous disposition theory of sports spectatorship literature (Peterson & Raney, 2008; Su-lin, Tuggle, Mitrook, Coussement, & Zillmann, 1997). These items asked, "How much do you like (name of team)?," and "How much do you hope (name of team) wins the game?" Dispositions toward the key players mentioned in the narratives was also measured by asking "How much do you like (name of player)?," and "How much do you hope (name of player) wins the game?" The level of devotion to each team was also added to this measure with the item, "How closely do you follow (name of team)?" Internal consistency metrics for each disposition measure were good. For TSM/Baylor, Cronbach's alpha = .88, and for G2/Kansas State, Cronbach's alpha = .77.

Suspense was measured using a scale constructed from items used in past studies (Peterson & Raney, 2008; Sapolsky, 1980). Four items were included in the suspense scale: "To what extent did you care about the outcome?"; "How suspenseful was the game?"; "To what extent did you feel tense while you were watching?"; and "To what extent did you worry about the outcome?" Cronbach's alpha = .88 for the suspense scale, indicating good internal consistency.

Enjoyment was measured using a 10-item scale used in several previous studies on ADT, enjoyment of suspense, and enjoyment of video games (Raney, 2002; Raney & Bryant, 2002; Shafer, 2012, 2014). Participants were asked to indicate their level of agreement on a 0 (*not at all*) to 4 (*completely*) scale, with questions such as "watching the game made me feel good" or "watching the game bored me" (reverse coded). The enjoyment scale showed good internal consistency, with Cronbach's alpha = .91.

Participants were also asked how helpful the tutorial was in fostering understanding of the game, as well as how well they actually understood the game. Game understanding was assessed with a 4-item scale (e.g., "I was able to watch the game easily"; "The game was difficult to understand while watching"—reverse coded). The four items showed good internal consistency, with Cronbach's alpha = .82.

Before watching, participants were also asked how interested they were in sports and eSports, and basketball and *LoL* in particular (e.g., "Please rate how interested you are in the following activities: sports in general; eSports in general; basketball; *League of Legends*" on a 5-point scale ranging from *not at all interested* to *extremely interested*). The manipulation checks and the hypotheses tests were conducted using SPSS 26 and WarpPLS 6.0.[2]

[2] WarpPLS is capable of nonlinear and linear path analysis. Unlike similar programs such as Lisrel, it provides significance tests of each path coefficient as well as indicators of effect size for each endogenous variable. This makes it an ideal tool for the theoretically derived analysis we pursued. WarpPLS gives three indicators of model fit; the average path coefficient (APC), average *R*-squared (ARS), and average variance inflation

Results

Manipulation Checks

To determine whether our participants understood the stimulus materials and developed positive dispositions for the "hero" teams as intended, a series of manipulation checks were performed. After watching the match, the participants were asked how well they understood the game, and how helpful the tutorial was in fostering that understanding.

As Table 1 shows, each tutorial was rated equally helpful for its respective sport. However, *LoL* game understanding was significantly lower than player's understanding of basketball. Consequently, it seemed necessary to remove those who were not able to understand the contest (n = 25) from the analysis of the *LoL* condition. All participants in the basketball condition were able to understand the game they watched.

Table 1. Manipulation Check: Tutorial Helpfulness & Understanding of LoL and Basketball.

Variable	*M*	*SD*	*t*	*f*	Sig.
LoL tutorial helpfulness	3.37	0.92	0.45	93	p = .65
Basketball tutorial helpfulness	3.31	0.84			
LoL game understanding	1.92	0.15	−10.65	93	p < .001
Basketball Game Understanding	3.33	0.61			

As Table 2 shows, the difference in game understanding between conditions was still significant, but practically was much closer than it was before removing those eSports participants who could not understand the game.

Table 2. Game Understanding After Removal.

Variable	*M*	*SD*	*t*	*f*	Sig.
LoL game understanding (after removal)	2.47	0.89	−7.30	71	p < .001
Basketball game understanding	3.33	0.61			

As mentioned, dispositions toward each team were assessed after viewing the game. The narratives were designed so that TSM and Baylor would emerge as the "hero" teams, and G2 and Kansas State would emerge as the "villain" teams. The manipulation appears to have been somewhat successful in that participants in the eSports condition felt negatively toward G2. They did not, however, feel overwhelmingly positive, on average, toward TSM. The general feeling among eSports participants seems to have been

factor (AVIF). A full description of these indicators can be found in the WarpPLS user manual (Kock, 2017). Briefly, however, the APC and the ARS are computed as averages of other parameters that are calculated via resampling. Bonferroni-like corrections are used to calculate p values (Kock, 2017). The recommended p value for the APC and the ARS is <.05. The AVIF, which is an indicator of multicollinearity in the model, should be lower than 5 (Kock, 2017).

somewhat fewer negative feelings toward TSM than their feelings toward G2. Practically, this means that were more participants who felt positively about TSM than there were participants who felt positively about G2 (see the note in Table 3).

Table 3. Manipulation Check: Dispositions Toward Players and Teams.

Variable	*M*	*SD*	*t*	*f*	Sig.
TSM disposition	1.56	0.86	3.87	8	$p < .001$
G2 disposition	1.15	0.72			
Baylor disposition	3.47	0.71	25.23	3	$p < .001$
Kansas State disposition	0.74	0.74			

Note. All values are based on a 0–4 scale. For TSM, 20/79 participants reported positive dispositions (above 2.00), *Mo* = 1.8. For G2, 8/79 participants reported positive dispositions, *Mo* = 1.2.

So, as Table 3 shows, average dispositions were significantly more positive (or less negative) toward TSM than toward G2, indicating that TSM was the favored team in the eSports condition as intended. By the same token, Baylor was the overwhelming favorite in the traditional sports condition.

Path Model and Fit Indices

Hypotheses 1 and 2 predicted that disposition and suspense would positively and significantly impact enjoyment of the games regardless of condition. We made no predictions as to the possible differences between conditions; indeed, the purpose of the study was not to compare the conditions variable by variable. Rather, we intended to demonstrate that the relationships between the variables of disposition toward teams, suspense, and enjoyment would be relatively consistent between conditions. We hypothesized that the process of enjoyment, meaning the chain of influence (Streiner, 2005) involving the impact of dispositions and suspense on enjoyment, would be similar between the two conditions (H3). H1 and H2, as well as H3, were therefore tested via path analysis. Path analysis has been employed effectively to investigate enjoyment in the context of disposition-based theories and antihero or morally ambiguous characters (Krakowiak & Oliver, 2012; Shafer & Raney, 2012), dispositions and moral judgments in interactive narratives (Shafer, Janicke, & Seibert, 2016), and the impact of moral disengagement on enjoyment (Krakowiak & Tsay, 2011).

To test H1, H2, and H3, two path models were specified—one for sports viewers (n = 96) and one for eSports viewers (n = 79). Results of the sports path model are shown in Figure 1.

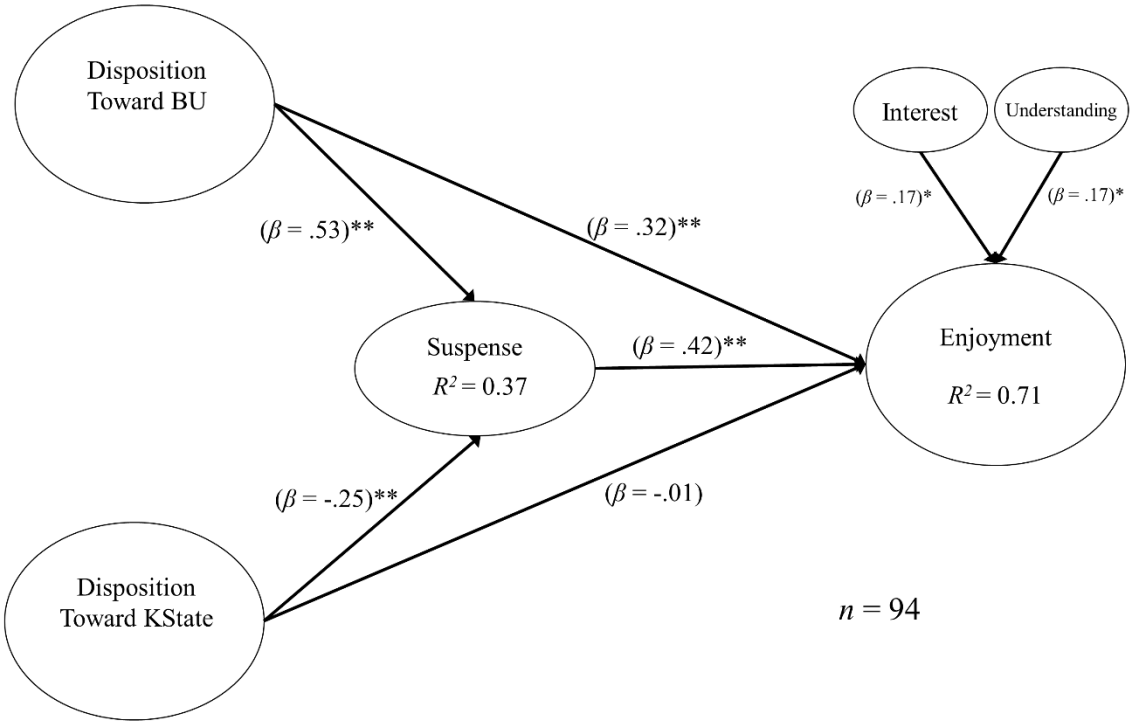

Figure 1. Path analysis results for the sports condition. **Note. *p < .01. **p < .001.**

All but one path coefficient (effect of disposition toward Kansas State on enjoyment) were significant for the sports model. WarpPLS-fit indices indicated that the model fit the data well (APC = 0.27, p = .002; ARS = 0.54 p < .001; AARS = 0.52, p < .001; AVIF = 1.40).

Results of the eSports path model are shown in Figure 2. All paths but one (effect of disposition toward G2 on suspense) were significant. WarpPLS-fit indices indicated that the model fit the data well (APC = 0.28, p < .001; ARS = 0.505, p < .001; AARS = 0.499, p < .001; AVIF = 2.028). In the eSports model, 78% of the variance in enjoyment could be explained by disposition toward the favored team.

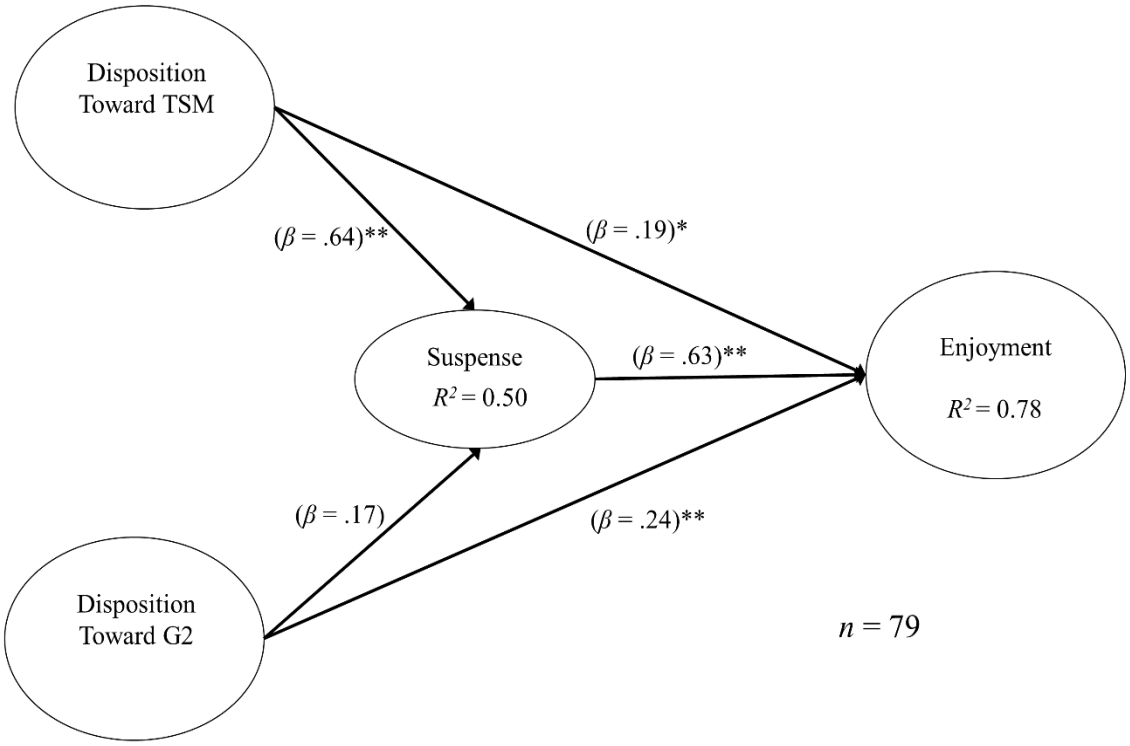

Figure 2. Path analysis results for the eSports condition. **Note. *p < *.01.* **p < *.001.***

H1 predicted that positive dispositions would positively and significantly predict enjoyment when a liked team triumphs in both sports and eSports conditions. H1 was supported. As both models show, dispositions toward the "hero" teams positively and significantly affected enjoyment (Baylor β = .32; TSM, β = .19). The more participants liked a team, the stronger the impact on enjoyment. Another effect also unexpectedly emerged. Disposition toward the "villain" team in the eSports condition also significantly affected enjoyment. This is likely because there were some participants who were positively disposed toward G2 even after the manipulation in the narrative. Notably, disposition toward Kansas State did not predict enjoyment either positively or negatively in the sports condition. This is likely because there was little variance in dispositions toward Kansas State (*M* = 0.74, *SD* = 0.74). With little variance, disposition toward Kansas State did not emerge as an explanatory variable in the model. Note the previous finding that the average disposition scores toward each eSports team were not as disparate as the average disposition scores between the basketball teams.

H2 predicted that suspense would positively affect enjoyment among eSports viewers just as it does among sports viewers, regardless of which team wins or loses. H2 was supported. Suspense seemed to have a powerful influence on enjoyment in both conditions (sports, β = .42; eSports, β = .63). The impact of suspense on enjoyment was much stronger in the eSports condition. This is likely because dispositions

toward either team were not as strong as they might have been among true eSports fans; therefore, participants derived more enjoyment from the suspense during the game than they did from their positive or negative dispositions.

H3 predicted that a path model describing the impact of dispositions toward the opposing teams on both suspense and enjoyment, with suspense also affecting enjoyment, would demonstrate an affective process that explains a large portion of enjoyment in both conditions. H3 was supported. As Figures 1 and 2 show, the combined impact of disposition toward each team and suspense on enjoyment was significant. In the sports condition, 71% of enjoyment was explained by the overall model (including interest in basketball and understanding of the game as covariates). For the eSports condition, 78% of the variance in enjoyment was explained by the model. The covariates of interest in eSports and game understanding did not have a significant impact in the eSports model.

To investigate our research question, *t* tests were performed to compare the influence of each path in the sports model relative to each path in the eSports model. Figure 3 shows the formulas used to test for significant differences between each path coefficient in the basketball model and its counterpart in the eSports model. No available software package tests for significant differences between path coefficients in a path model, so the solutions to each *t* test were calculated by hand.

$$S_{pooled} = \sqrt{\{[(N_1 - 1)/(N_1 + N_2 - 2)]x\ SE_1^2 + [(N_2 - 1)/(N_1 + N_2 - 2)]x\ SE_2^2\}}$$

$$t = (PC_1 - PC_2)/\left[S_{pooled}\ x\ \sqrt{\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}\right]$$

Figure 3. S-pooled and t-test formulas for path comparisons.

Results of the path coefficient comparisons are shown in Table 4. The *t* tests indicate that that disposition toward the "hero" team had a stronger influence on suspense in the eSports condition. Similarly, disposition toward the "villain" team also had a stronger influence on suspense for eSports viewers. Disposition toward the "hero" team more strongly influenced enjoyment for the sports viewers, whereas disposition toward the "villain" team had a larger impact for the eSports viewers.

Table 4. Path Coefficient Comparisons.

Path pair	Compared coefficients	*t*	Sig.
Influence of disposition toward "hero" team on suspense	Sports β = .53 eSports β = .64	−7.97	$p < .001$
Influence of disposition toward "villain" team on suspense	Sports β = −.25 eSports β = .17	−27.24	$p < .001$
Influence of disposition toward "hero" team on enjoyment	Sports β = .32 eSports β = .19	8.50	$p < .001$
Influence of disposition toward "villain" team on enjoyment	Sports β = −.01 eSports β = .24	−15.72	$p < .001$
Influence of suspense on enjoyment	Sports β = .42 eSports β = .63	−14.79	$p < .001$

Suspense also had a significantly more powerful effect on enjoyment for eSports viewers than for sports viewers.

Discussion

The purpose of this study was to investigate the possibility of extending the principles of the disposition theory of sports spectatorship to eSports spectatorship. The rise in eSports' popularity inspired this study, in which reactions from viewers of a traditional basketball game were compared with reactions from viewers of an *LoL* eSports competition. Specifically, enjoyment was modeled as a function of disposition toward each team, and suspense. Two path models, one for each condition, were specified that described the hypothesized influences of dispositions on suspense and enjoyment, and the direct impact of suspense on enjoyment. Both models demonstrated excellent fit for the data.

The most important finding from this study is that the relationships among the variables in both conditions were generally consistent with relationships found in past sports spectatorship studies (Hirt et al., 1992; Sapolsky, 1980; Zillmann et al., 1989). One notable difference is the lack of influence of disposition toward Kansas State on suspense and enjoyment in the traditional sports condition. The absence of influence here is likely linked to the fact that there was little variance in disposition across participants toward Kansas State. Virtually all sports condition participants were fans of Baylor and not Kansas State. Therefore, there was no variance in disposition to influence enjoyment. It is also possible that positive dispositions toward Baylor, along with suspense were enough to drive enjoyment, and feelings about Kansas State were simply not a factor. The opposing team perhaps could have been anyone. The findings would seem to indicate that this is likely: In a suspenseful game, the most important consideration, perhaps, is that the win is achieved heroically, and negative feelings toward a rival team are secondary. These findings, despite the small departures from traditional results in studies connecting sports spectatorship and disposition theories, lend support to our proposal that the disposition theory of sports spectatorship be expanded to include eSports. Dispositions influenced how much suspense was experienced during the games. Dispositions toward the teams also influenced how enjoyable the participants found the games, while suspense partially moderated the effect between disposition and enjoyment.

Findings From Hypotheses and Research Question

Comparisons of the relative strength of each relationship between each of the variables indicated that, in most cases, eSports spectatorship resulted in stronger effects than the relationships between the same variables in the sports condition. Beta values were higher for the eSports condition in all cases except for the relationship between disposition toward the "hero" team and enjoyment. We would argue that the participants themselves had much to do with these findings. Participants who were assigned to the sports condition had a common point of reference and a built-in favorite because the game featured the team from their own school. A suspenseful (characterized by a close score and down-to-the-wire ending) collegiate men's basketball game was chosen. The overwhelming majority of participants in the sports condition were positively disposed toward the team associated with their school, as expected. We wanted to present participants with a game they were likely to care about, and enjoy. The reasoning for this was based on Sapolsky's (1980) point that a game in which one is not invested is unlikely to produce enjoyment.

In the eSports condition, by comparison, most participants had no knowledge of either team. To remedy this problem of unfamiliarity, a narrative was constructed that highlighted the rivalry between the two teams involved. The intent was to make one team the "hero" team and the other the "villain" team. The manipulation was successful in that eSports participants felt more positive toward TSM than G2. However, we cannot claim that participants felt positively disposed toward TSM generally. Dispositions toward the eSports teams were not as lopsided as with the basketball game. The closer disposition scores between the eSports teams seems to have resulted in more of a reliance on the suspenseful nature of the game to drive enjoyment. In the sports condition, both suspense and disposition toward the "hero" team had a significant impact on enjoyment. For the eSports condition, suspense was a stronger, more significant predictor of enjoyment than disposition toward the "hero" team. Findings also indicate that participants do not rely on their dispositions for feelings of suspense. Instead, dispositions have a strong effect on enjoyment. This finding was present despite the fact that G2 lost the game.

Perhaps the most important fact to note is that, despite some differences, the chains of influence were quite similar between conditions. In both conditions, dispositions positively predict suspense and enjoyment, and suspense also predicts enjoyment. The strength of the dispositions toward each team is an important factor as far as how much influence one variable has on another, as disposition theories predict. These findings give strong evidence that enjoyment of eSports can be explained by the principles of the disposition theory of sports spectatorship.

Other Limitations and Future Research

The study was subject to a few additional limitations. First, the games that participants watched were incomplete, edited games, making the experience different from true sports or eSports spectatorship. Along the same lines, these games are typically watched live, but they were pre-recorded in our study, and the participants knew it. This almost certainly mitigated the suspense participants might have felt if the games were live and unedited. The traditional sports viewing setting was also unlike the typical experience of going to a sporting event, a sports bar, or one's own living room. Being in a lab setting may have also had a softening effect. What this may mean for our results is that our findings were possibly weaker than

they may have been if a more ecologically valid method of data collection had been used. Stronger relationships may be found in a similar study conducted with live sports, and future studies should be done in a live, natural viewing situation. At the very least, it is reasonable to expect that suspense responses would be stronger, and the effects of suspense would be more powerful.

Another limitation that has been somewhat addressed is the fact that many in the sports condition were established basketball fans with previously existing dispositions. The ideal comparison for this group would have been a cadre of eSports fans who already knew TSM and/or G2 before the study. Such a group of eSports fans was not available. Future research should and will strive to include more established eSports fans. Even location-based research at an esports arena and a traditional sports arena would afford the opportunity for a more relevant sample. Although it is true that a "natural" experiment gives up a great deal of the control we were able to retain for this study, the benefits of gathering data from true eSports fans would perhaps be worth it.

Despite these limitations, the experimental conditions were carefully controlled and were consistent with each other (with the exception of the factors already noted). Also, the eSports viewing condition was more closely aligned with how people typically watch such matches, via computer (see Paradise, 2018, for more on this). This fact may have contributed somewhat to the stronger relationships between variables in the eSports condition as compared with the traditional sports condition.

Conclusion

We propose that the developing eSports industry is a field ripe for continued research. The economic, interpersonal, and psychological impact of eSports on their players, fans, and purveyors is, as yet, largely unknown. In this study, we have considered only one of the many genres that make up eSports games. Future research should consider the impact of other types of games such as first-person shooters or the wildly popular Battle Royale games like *Apex Legends* and *Fortnite*. As the eSports fan base grows, we will be able to better define how players and fans interact and affect each other. Factors such as organizational structure, player compensation, and other economic concerns can be considered. Future research should investigate whether spectators better enjoy watching eSports live or via a computerized device. We look forward to seeing how the industry grows, and it is our hope that many scholars will continue to develop our knowledge of how people are affected by it.

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