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## The Football Boost?:

### Testing Three Models on Impacts on Sports Spectators' Self-Esteem

#### Abstract

To explain the wide attraction to sports, self-esteem impacts of a live American college football game were investigated; testing hypotheses derived from mood-as-information, social identity, and sociometer frameworks along with previous research on sports and self-esteem. A three-wave field study measured mood, group affiliation, and self-esteem among 174 students at two different universities, immediately before and on two consecutive days after the football teams of these universities played in a much anticipated game. Both self-esteem and mood were affected two days after the game; however, fans of the winning team showed increased self-esteem (with no related mood improvement) while fans of the defeated team showed decreases in mood (with no related self-esteem deflation). Both the game outcome and the social viewing context influenced self-esteem. Impacts on self-esteem were mediated by both mood and group affiliation changes.

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Sports broadcasts attract the largest viewership of all TV shows and events—3.4 billion people were estimated to have watched the 2018 FIFA World Cup (Roxborough, 2018), and Super Bowl LII was viewed by over 103 million Americans (Otterson, 2018). Such a large media imprint seemingly holds the potential for an equally-weighted impact. Long held as the “opiate for the masses”, Wenner (2006) makes the case that the size and ubiquity of sport means that the study of “this distraction is certainly worthy of our consideration” (p. 58).

As sports spectatorship has important societal consequences—for instance, on public health through physical, mental, and social well-being (Yuhei, Berg, & Chelladurai, 2015)—the present study examines theoretical conceptualizations of the interest in mediated sports events. More specifically, it focuses on how following sports affects self-esteem: a key variable in any individual's everyday psychological functioning and self-regulation, with important consequences on health and interpersonal relationships (Zeigler-Hill, 2013). Research has previously looked at sports and self-esteem before (e.g. Bizman & Yinon, 2002; Hirt, Zillmann, Erickson & Kennedy, 1992), but these studies derived their data solely from post-game measures.

An examination of sports and self-esteem in a longitudinal manner that includes pre- and post-game measures of variables of interest is needed to further understand how sports have a persistent impact on their spectators. Particularly, measuring self-esteem at different times can give a better understanding of how sports influences self-esteem for a period of longer than just a few hours after a game ends. Longitudinal studies in the area of sports and self-esteem are scarce and the current study attempts to bridge this gap. A three-wave field study of an American

college football game in 2015 (immediately before and two points immediately following a key game). In doing so, the panel study of 174 college students examines changes across time, focusing specifically on mood, group affiliation, and self-esteem.

### **Related Literature**

#### **Sport Impact on Spectator Mood**

Three theories— affective disposition theory (Zillmann & Cantor, 1977), mood-as-information perspective (Schwarz & Clore, 1983), and social identity theory (Tajfel & Turner, 1979)— appear relevant to the study of sport and self-esteem. Sport is an entertainment genre with grand appeal to wide audiences (Raney, 2006), likely due to strong affective impacts: watching a favored team win improves moods, while watching them lose causes a mood drop (David, Horton, & German, 2008; Schwarz, Strack, Kommer, & Wagner, 1987; Schweitzer, Zillmann, Weaver, & Luttrell, 1992; Sloan, 1979; Wann, Dolan, McGeorge, & Allison, 1994).

Affective disposition theory (ADT) (Bryant & Raney, 2000; Zillmann & Cantor, 1977) sheds light on how these affect changes come about as positive affective disposition towards media characters (liking a sports team) induces empathetic responses to outcomes that the characters experience, while counter-empathy occurs towards antagonists (e.g., rival sports team) for whom a negative affective disposition is held. Hence, expressions of victory enjoyment also lead to supporting spectators through empathy. This response has a positive impact on spectator mood, whereas empathy while watching a favored team lose produces negative mood impact. Disposition theory has also been examined specifically in a sports context, where sports fans' enjoyment is often dependent on the performance of their preferred team (Raney, 2006, Yu & Wang, 2015). Considering that previous research has supported this notion for outcomes just after a game, it is important to test this longitudinally to examine if there are residual boosts or

reductions of mood long after the game is over. Accordingly, these impacts on mood among American college football audiences, lead to an initial hypothesis that grounds the rest of the framework of the study by operating as a control heuristic:

**H<sub>1</sub>** {a}[b]: A university football team's {win}[loss] has a {positive}[negative] impact on mood among individuals affiliated with the university.

### **Social Identity Theory and Sports Spectatorship**

Given sports spectators may often suffer a mood setback from watching a favored team lose, other benefits beyond mood may motivate sports viewing. Possibly, self-serving benefits from social affiliations outweigh the risk of the negative mood impact, or individuals may be able to bolster the loss impacts through socio-psychological mechanisms discussed below.

Social identity theory (SIT) (Tajfel & Turner, 1979) is often utilized to explain the interest of sports (e.g., Hirt et al., 1992), suggesting that individuals derive identity from the groups in which they belong and, consequently, self-categorize. More specifically, the so-called self-esteem hypothesis in this framework (e.g., Abrams & Hogg, 1988) suggests individuals seek group memberships that allow self-enhancing comparisons with outgroups, or render those memberships more salient for self-esteem enhancement. Many group memberships are permanent and are hardly a matter of choice (e.g., nationality)--yet self-categorization as a fan of a sports team is often a rather deliberate choice, even though associations through local proximity or nationality prescribe certain affiliations.

Per the SIT self-esteem hypothesis, individuals thus seek affiliation with successful teams that facilitate self-enhancing intergroup contrasting and 'basking in reflected glory' (BIRG) (Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976). When it comes to nationality and sports, successes by national competitors can lead to a feeling of national pride (Elling, van

Hilvoorde, & Van Den Dool, 2014). This identification with a team has an impact on how individuals bask in reflected glory, such as how sports fans consume media, for example (Cunningham & Eastin, 2017; Raney, 2006). It has long been argued that individuals like to associate more with successful athletes to derive a self-esteem boost. Cialdini et al. (1976) found individuals tend to speak about victories of a team they affiliate with in language signalling self-inclusion ('we won') per BIRG phenomenon, whereas losses are more likely described in self-distancing terms ('they lost') per 'Cutting off Reflected Failure' (CORF) phenomenon. While these phenomena pertain to public expression of affiliating, private perceptions are presumed to follow the same pattern per second hypothesis:

**H<sub>2</sub>{a}[b]:** A university football team's {win} [loss] {increases} [decreases] perceived university group affiliation among individuals formally affiliated with the university.

If sports exposure aids self-esteem, this impact could have large public health relevance because of sports' grand popularity and self-esteem's pivotal role in mental, social, and physical well-being. Defined as "the overall value that one places on oneself as a person" (Judge & Bono, 2001), self-esteem is often suggested to be related to numerous relevant outcomes such as happiness, performance, stress resistance, and improved health (Abouserie, 1994; Baumeister, Campbell, Krueger, & Vohs, 2003; Neff, 2011). However, less clear is whether watching a preferred team lose, on the other hand, undermines fans' self-esteem. Hirt et al. (1992) found after watching a loss, self-esteem was lower for participants who watched a loss compared to participants' who had watched a win. According to the proposition that sports fans may deflect a loss through 'cutting off reflected failure' (Cialdini, 2008; Snyder, Lassegard, & Ford, 1986), it is possible that a loss does not undermine fans' self-esteem. Being able to cut oneself off from a

failure would speak to the popularity of sports, since if viewing a loss does not have a lasting self-deflating effect, there is no risk of losing self-esteem by watching. This reasoning leads to the postulation of a third two-pronged hypothesis, suggesting both an increase over time, significant between-group differences.

**H<sub>3a-b</sub>:** A win of a sports team that individuals affiliate with increases their self-esteem (H3a); a loss does not affect self-esteem such that individuals affiliated with a losing team have lower self-esteem postgame than individuals affiliated with a winning team (H3b).

### **Sociometer Perspectives Applied to Sports Spectatorship**

The SIT perspective, along with the self-esteem hypothesis, does not directly pertain to why fans usually support a team even when a loss occurs or when the team does not perform well for extended periods of time (Branscombe & Wann, 1991). This common situation is not easily explained with social identity theory -- yet, a sense of connectedness with the team and other fans might still make viewing of the sports event rewarding (Koenigstorfer, Groeppel-Klein, & Schmitt, 2010; Norris, Wann, & Zapalac, 2015). Under such circumstances, fans may even be able to construct favorable intergroup comparisons--“Perhaps the worst teams need the best fans” (Norris et al., 2015, p. 159). Accordingly, sports fans may not always simply ‘bask in reflected glory’ but oftentimes derive a sense of connectedness, as they are loyal to a team along with other fans even in difficult times that lack athletic success. Self-esteem may have important health implications to buffer against depression (Branscombe & Wann, 1991). For example, sports spectatorship could aid in mental health for those even struggling with suicidal thoughts (Andriessen & Krynska, 2009). Correlational evidence suggests that self-esteem and

strength of team affiliation, at the very least, covary (e.g., Branscombe & Wann, 1991; Wann, Royalty, & Roberts, 2000).

The sociometer model (Leary & Baumeister, 2000) postulates that self-esteem functions as a system for monitoring social acceptance and rejection. Because humans have a basic need ‘to belong’ and hold at least a certain number of relevant social bonds, self-esteem serves to signal to the organism when action is needed to enhance the quality of social bonds (Baumeister, Campbell, Krueger, & Vohs, 2003; Leary & Baumeister, 2000). Further, it is thought to consider both current as well as anticipated quality of social relationships and inclusion, forming both state and trait self-esteem (Leary & Baumeister, 2000). Accordingly, any opportunity to bond with others aids self-esteem. Along these lines, shared experiences of sports spectatorship may enhance self-esteem--regardless of loss or victory--because they strengthen connections with other spectators—while watching a game, texting about the game while watching, as well as when talking about it afterwards. Thus, Hypothesis 4 proposes that sports viewing will influence group affiliation and self-esteem.

**H<sub>4a-b</sub>:** Watching a sports game with a team that individuals affiliate with affects (a) perceived group affiliation and (b) self-esteem, especially if the game is watched a social setting (as opposed to watching privately).

### **Sport Impact on Spectator Self-Esteem**

The only experimental investigations, to date, examining impacts of sports viewing on self-esteem and its facets (Hirt et al., 1992) found that self-esteem was rather uniformly enhanced from watching a liked team win, across different self-esteem facets. Specially, Hirt et al. (1992) had participants watch recorded basketball games (where their affiliated team won or lost), before they completed several tasks to assess self-esteem in various domains under the



guise that this was part of a separate experiment: a motor skills task (dart game), a mental skills task (solving anagrams), a social skills task (assuming dating success in response to portraits), and a chance task (rolling dice). Only confidence regarding the chance task was unaffected by sports exposure. It is possible that the social self-esteem task also pertained to physical attractiveness and not purely social connectedness as there is no evidence to date that affiliating with a successful sports team affects facets of self-esteem differently.

Hirt and collaborators used videotaped games and could thus only approximate the experience of live viewing or learning about the game outcome that just took place. Similarly, Cialdini et al.'s classic studies (1976) asked participants about *past* games and thus could not capture the immediate impacts of sports events. In contrast, the next few studies were designed to assess immediate responses relating to self-esteem impacts.

Immediately after a basketball game, Bizman and Yinon (2002) asked Israeli fans of both teams to indicate their degree of fanship, willingness to publicly associate with the team (WTA), self-evaluations (as a state self-esteem measure), and current emotional state to investigate if sports fans distance themselves from the team after a loss. In line with Hirt et al. (1992), self-esteem and mood were more positive after a preferred team's win than a loss; further, team affiliation was higher after team success. When given the opportunity to distance oneself from the losing team (by completing WTA measure before self-evaluations), the loss had less detrimental impact on self-esteem and mood.

Further, Schramm and Knoll (2017) examined whether mood effects from sports viewing subsequently affect self-confidence. This study on mood and self-confidence is based upon an earlier work that examined those two concept. In this work, Knoll, Schramm, and Schallhorn (2014) found that individuals who had watched the men's German national team soccer win in a

World Cup game had more of a positive mood and enhanced self-confidence than individuals who had watched a loss in a World Cup game. Assessments of happiness and self-esteem were collected from viewers of women's German national team soccer World Cup games, which ended either in loss or victory. The pre- and post-game measures were collected from different participants, so that no change measures were tracked. The study found that participants interviewed after a win were in a better mood than those participants interviewed before the game, consistent with earlier work (Knoll, Schramm, & Schallhorn, 2014) whereas groups of participants interviewed either before or after a loss did not differ in their mood. The win's impact on mood was further shown to positively influence self-esteem among men, evident as a mediation effect of watching a victory on self-esteem via mood.

Interestingly, the Hirt et al. (1992) studies differ in their results from Schramm and Knoll's (2017) findings because the earlier work went through great lengths to disentangle mood as a possible mediator that led to self-esteem impacts but did not find significant mediation through mood. Two differences between Hirt et al.'s and Schramm and Knoll's studies could account for different conclusions regarding processes: Hirt et al.'s participants watched taped games and right after responded to current affect items (for example, ranging from "*extremely depressed*" to "*extremely elated*") and to questions regarding how they felt about themselves "at this moment". In contrast, Schramm and Knoll (2017) collected data in the three days before and the three days after a game and measured affective state in a much less time-specific way (e.g., "*I think I am a happy person*," and "*I personally was in a very good mood during the past 1 to 2 days*."), which makes a correlation with their self-confidence measure (e.g., "*I currently feel highly self-confident*") rather likely. So timing and measures in the earlier study were more specific, but the newer study captured impacts at least roughly when the games occurred.

## Synthesizing the Study

The above reviewed theoretical notions led to a set of four hypotheses on direct effects, summarized in Figure 1.

[insert Figure 1 about here]

Additionally, we will examine how the self-esteem impacts of sports events come about by examining different mediators, summarized in Figure 2.

[insert Figure 2 about here]

The ‘mood-as-information’ theory implies that mood is the crucial mediator. As one’s home team wins, the mood improves, which in turn, may have a positive impact on self-esteem as well. This suggestion aligns with Schramm and Knoll’s (2017) mediation effect findings but not with Hirt et al. (1992) who tested mood as a mediator and found it to not have a mediating role. The second possible mediator is group affiliation. The self-esteem hypotheses within the SIT framework suggests that people will want to affiliate more strongly with an ingroup that allows for favorable social comparison with an outgroup. Accordingly, we hypothesize that viewers and fans associate more strongly with their home team after the team won, and as a result, will have greater self-esteem. On the other hand, if the home team lost, people should associate less strongly, which prevents a negative self-esteem impact. Further, the sociometer model also implies group affiliation as mediator through which self-esteem impacts occur. Research has shown that viewing contexts of sporting events may have an impact on the overall experience of watching the game, as well (Jang, Ko, Wann, Chang, 2017). Hence, we will examine the following hypotheses:

- H5:** The win of a football team that individuals affiliate with increases their self-esteem via mood changes (mood-as-information model).

**H<sub>6</sub>:** The win of a football team that individual affiliate with increases their self-esteem via group affiliation changes (SIT self-esteem model).

**H<sub>7</sub>:** The exposure to a football game that individual affiliates with increases their self-esteem via group affiliation changes (sociometer model).

Lastly, we test a more complex model in an effort to integrate the different theoretical perspectives. Some research in the sports context (Bernache-Assollant, Laurin, Bouchet, Bodet, & Lacassagne, 2010) indicates that affective states mediate how a game outcome affects group affiliation. Accordingly, individuals will be particularly motivated to distance themselves from the group associated with a defeat when the defeat had a stronger negative mood impact on them, while on the other hand, greater mood enhancement from a victory should foster greater motivation to affiliate with the victorious group. Accordingly, the win/loss will affect group affiliation via mood changes, and then ultimately self-esteem, as illustrated in Figure 3.

**H<sub>8</sub>:** Mood change induced by a win (suggested in H1) increases group affiliation, such that greater mood enhancement fosters stronger affiliation, which in turn improves self-esteem (integrated model).

It should be noted that these previous four hypotheses are not in competition with one another, but rather, these are to determine which is the best model to explain relationships to self-esteem, more prediction.

[insert Figure 3 about here]

### **Method**

A three-wave online field study collected data right before and after ‘game day’ of a high-caliber American football game. The football teams of ANONYMOUS\_A University and ANONYMOUS\_B University were scheduled to compete on November 21, 2015.

ANONYMOUS\_A had, in fact, won [DELETED FOR ANONYMITY]. The winner of this game would represent the [DELETED FOR ANONYMITY], so the importance of the game was high for both teams and fan bases. The ANONYMOUS\_B football team won this game against ANONYMOUS\_A, with 17-14 as final score. Student participants recruited from these two universities filled out a sign-up questionnaire, a baseline questionnaire on Friday or Saturday before the game, in addition to post-game questionnaires on Sunday and Monday after the game day.

### **Participants**

Of 174 participants who completed the study, 73 (42%) were male, 101 (58%) were female, 79 (45.4%) were ANONYMOUS\_B students, and 95 (54.6%) were ANONYMOUS\_A students. The attrition from Wave 1 to Wave 3 did not differ by university (15% vs. 13%). The average age of participants who completed all waves was 19.62 years ( $SD = 1.43$ ).

### **Procedure**

Several weeks before the targeted football game, students from both universities received an email recruiting for a study ostensibly pertaining to “College Students’ Well-Being and Leisure Activities,” with a monetary participation reward. First, participants completed a consent form and sign-up questionnaire, which captured biological sex, age, race, university of attendance, among other demographics. Further, identification with university football team was assessed, among distractor questions. Participants were invited for further sessions if they had an official university email and were between 18 and 25 years old. As fewer men than women signed up, all males were included but randomly-picked women were excluded (due to budget limitations and to balance the sample).

Data collection occurred on the weekend of November 20-23, 2015. The first invitation was sent on Friday, 24 hours before the football game kickoff. At kickoff, the online session of the first wave was deactivated. It captured mood, self-esteem, perceived group affiliation with university, and university football team affiliation. Ample distractor questions (e.g., on leisure activities) served to veil the research purpose. For the second wave, invites were sent at 6:00 AM on Sunday, with the online session becoming inactive at 12:00 AM Monday. This wave again ascertained mood, self-esteem, and university group affiliation, but also included questions about the football game, viewing context, and knowledge of outcome. Again, many distractor questions on leisure activities, etc., were interspersed. Then, at 6:00 AM on Monday, invites were sent out for the third wave, with the online session becoming inactive at 12:00 AM Tuesday. Participants once more indicated mood, self-esteem, and university group affiliation, embedded in many distractor questions (e.g., food intake).

## **Measures**

**University enrollment.** The university that a participant was enrolled at (ANONYMOUS\_B vs. ANONYMOUS\_A) was captured simply per recruitment and email address. Of 174 participants, 79 (45.4%) were ANONYMOUS\_B students, and 95 (54.6%) were ANONYMOUS\_A students.

**Football team affiliation.** For a measure of university football team affiliation, participants responded in the wave before the game to seven items modified from the Sports Spectator Identification Scale (SSIS) (Wann & Branscombe, 1993) on a 7-point scale, from not at all (1) to very much (7) in response to their relationship with their university football team at the current time. Example items included, “How important is it to you that your university's football team wins?”, “How strongly do you see yourself as a fan of your university's football

team?”, and “How important is being a fan of your university's football team to you?”. Their reliability was Cronbach's  $\alpha = .85$ , with  $M = 5.15$  ( $SD = 1.66$ ) for the averaged score across items. ANONYMOUS\_A students had a  $M = 5.11$  ( $SD = 1.66$ ) for an average score, while ANONYMOUS\_B students had a  $M = 5.19$  ( $SD = 1.69$ ) for an average score.

**Mood valence.** At the beginning of each wave, participants filled out a mood questionnaire, which was largely based on the American Time Use survey, Subjective Well-Being Module (BLS, 2014). Participants used sliders ranging from 0 (not at all) to 100 (extremely) in response to items that included *happy*, *tired*, *stressed*, *in pain*, *meaningful*, and *sad*, we also included *proud*, *cheerful*, and *angry* as a way to better understand a participant's mood in the context of a sporting event. The sliders would not record data unless they were physically moved by the participant. The analyses utilized *happy* and *cheerful* at all three waves to capture participants' mood valence; these two items were highly correlated at each wave ( $r > .63$ ,  $p < .001$ ) and thus condensed (see descriptives in Table 1).

[insert Table 1 about here]

Further, we computed mood change by subtracting the mean mood valence on Sunday from Saturday, and on Monday from Saturday, respectively.

**Group affiliation.** For each wave on Friday/Saturday, Sunday and Monday, participants responded on an 11-point scale, from 0 (not at all) to 10 (very much so) to four items, such as “I feel connected with my university,” that captured affiliation with their university based on the prompt “Please rate the following statements on your relationship with your university RIGHT NOW.” Descriptives and Cronbach's alphas are reported in Table 1. Further, change scores regarding group affiliation were computed as differences between scores on Saturday and Sunday as well as between Saturday and Monday.

**Knowledge of outcome.** When asked about the game outcome (win vs. loss) in the Sunday wave, only one person chose the response option “don’t know”. In fact, less than 10 percent could not specify the end score.

**Exposure context.** Participants indicated if and how they had followed the game, as well with whom. Only 10 percent said they had not followed the game at all while it happened, while all others did through some means (e.g., radio, social media, etc). Further, 70 percent of the participants indicated they followed the game with friends (which could occur through social media, for instance, and did not necessarily mean they actually watched the game). We derived an exposure context variable coded as follows: 0 (‘did not watch game’, 19%) for participants who did not *watch* the game live (on TV or in the stadium), 1 (‘watched game privately’, 17%) for participants who did watch it but not with friends, and 2 (‘watched game socially’, 64%) if the game had been watched live and with friends. The distribution for these categories did not differ for ANONYMOUS\_B and ANONYMOUS\_A ( $\chi^2(2, N = 174) = 1.15, p = .562$ ).

**Self-esteem.** Participants used sliders in response to 12 statements from Heatherton and Polivy’s (1991) state self-esteem scale, ranging from 0 (not at all) to 100 (extremely). The sliders would not record data unless they were physically moved by the participant. Example items include, “I feel satisfied with the way my body looks right now”, “I am pleased with my appearance right now”, and “I feel that I have less scholastic ability right now than others.” Per Heatherton and Polivy’s (1991) scale development, the items were condensed into three scales for each wave to represent social self-esteem, appearance self-esteem, and performance self-esteem. Appendix A summarizes descriptive statistics and reliability information.



We also computed situational self-esteem across these three dimensions of social, appearance, and performance self-esteem, to generate difference scores to represent self-esteem changes from Saturday to Sunday and then also from Saturday to Monday.

## Results

### Impacts of Win/Loss on Mood (H1a/b)

An ANOVA utilized mood valence from the three waves (time as within-subjects factor) as repeated measures. University enrollment (ANONYMOUS\_A vs. \_B) served as between-subjects factor. Further, exposure context was controlled for as a between-subjects factor, and football team affiliation was included as covariate. University enrollment had a main effect,  $F(1, 163) = 9.6, p = .002$ , partial  $\eta^2 = .054$ , which was qualified by an interaction with time,  $F(2, 334) = 4.2, p = .016$ , partial  $\eta^2 = .024$ . Thus, mood changed over time depending on which university an individual was enrolled at and thus associated with the winning or the losing football team. Specifically, the ANONYMOUS\_A students experienced a significant drop in mood valence on the day after their team lost the game, which lasted until Monday, with comparisons reported in Figure 4.

[insert Figure 4 about here]

As Figure 4 shows, while the ANONYMOUS\_B students also experienced a mood drop from Sunday to Monday, their mood was significantly better than the ANONYMOUS\_A students' mood on both Sunday and Monday after the game. Thus, Hypothesis 1b was supported, as the football loss led to a lasting mood impact on the spectators. However, Hypothesis 1a was not supported, because no mood improvement occurred as a result of a win. Exposure context as control variable did not produce a significant interaction with time as a within-subjects factor

(*n.s.*). As essentially all our participants knew about the game outcome on the following day, it likely affected their mood regardless of whether they had actually watched the game.

### **Impacts of Win/Loss on Group Affiliation (H2a/b, H4a)**

Similar to the prior analysis, an ANOVA with repeated measures was conducted, using the three waves with group affiliation scores as within-subjects factor. University enrollment (ANONYMOUS\_A vs. ANONYMOUS\_B) and exposure context (didn't watch, watched privately, watched socially) served between-subjects factors; football team affiliation was included as a covariate.

The university that participants were enrolled at had a main effect,  $F(1, 168) = 5.35, p = .022$ , partial  $\eta^2 = .031$ , as ANONYMOUS\_B students generally reported stronger affiliation,  $M = 7.82$  ( $SD = 2.33$ ) vs.  $M = 7.01$  ( $SD = 2.50$ ). This difference, however, is not relevant for hypotheses testing because it merely indicates that students at one university generally felt a stronger affiliation with their institution, which did not change as a result of their university football team's win or loss of the game. Indeed, no support emerged for Hypotheses 2a or 2b on a straightforward BIRG/CORF notion, which suggested that group affiliation would change over time depending on whether a loss or win occurred, but the interaction between the within-subjects factor time and the between-subjects factor university enrollment did not approach significance ( $p = .874$ ).

Exposure context affected group affiliation in a main effect,  $F(2, 167) = 4.48, p = .013$ , partial  $\eta^2 = .051$ , that was qualified by changes over time, resulting in an interaction with the within-subjects factor,  $F(4, 334) = 2.76, p = .031$ , partial  $\eta^2 = .032$ . with results reported in Figure 5.

[insert Figure 5 about here]

As reported in Figure 5, watching socially led to an increase in group affiliation that lasted for two days. On the other hand, those who did not watch the game showed a drop on affiliation on Monday after the game. This finding supports Hypothesis 4a. Indeed, the ANOVA yielded a related significant linear effect ( $F(2, 167) = 4.77, p = .010$ , partial  $\eta^2 = .054$ ), because the differences between the exposure context groups were always in the same direction but became stronger over time. This observations supports the notion in Hypothesis 4 that sports viewing increases group affiliation in particular if watched in a social setting, as opposed to privately.

### **Self-Esteem Impacts (H3a/b, H4b)**

An ANOVA with nine repeated measures was conducted, using the three waves as within-subjects factor and the three facets of self-esteem (social, appearance, and performance self-esteem) as another within-subjects factor. University enrollment (ANONYMOUS\_A vs. ANONYMOUS\_B) served as between-subjects factor. Further, the exposure context was controlled for as a between-subjects factor, and football team affiliation served as covariate.

The main effect of university enrollment yielded a significant effect,  $F(1, 167) = 3.9, p = .050$ , partial  $\eta^2 = .023$ , because ANONYMOUS\_B students' self-esteem averaged across waves and dimensions was higher,  $M = 62.4$  ( $SD = 15.9$ ) than ANONYMOUS\_A students,  $M = 59.3$  ( $SD = 16.9$ ). This effect of university enrollment, however, was qualified by the within-subjects factor of wave (day of data collection),  $F(2, 334) = 3.22, p = .041$  with GG-correction, partial  $\eta^2 = .019$ , with details reported in Figure 6.

[insert Figure 6 about here]

As Figure 6 highlights, among ANONYMOUS\_B students, self-esteem increased significantly from before the game to two days thereafter. Hence, Hypothesis 3a was supported, with an effect that lasted for days. On the other hand, ANONYMOUS\_A students did not decrease

significantly in self-esteem after game day, suggesting that losses may not be as impactful for self-esteem as wins. Students from the two universities did not differ in self-esteem before the game; however, on the two days thereafter, ANONYMOUS\_B students' self-esteem was significantly higher than ANONYMOUS\_A students', supporting Hypothesis 3b.

Moreover, an interaction of exposure context with time of measurement occurred,  $F(4, 334) = 2.46, p = .045$ , partial  $\eta^2 = .029$ , as reported in Figure 6. Already before the game, the people who watched the game socially had higher situational self-esteem than those who watched privately. A possible interpretation is that just anticipating the social viewing already made people feel better about themselves, as they also had higher self-esteem than those who did not watch the game at all on the Monday following the game (i.e., two days after the game). This group further had a self-esteem boost when comparing the day right after the game (Sunday) with the following day (Monday), while on the other hand, those who had not watched the game saw a drop in self-esteem between Sunday and Monday. Perhaps the game was an important conversation topic on campus on the following Monday, which boosted the self-esteem of those who had watched socially but undermined self-esteem among those who had not watched. Lastly, the people who watched the game privately increased in their self-esteem when comparing before the game with the following Monday. These findings support Hypothesis 4b, including the notion of stronger impacts of sports viewing that occurred in a social setting.

### **Mood-as-Information Model (H5)**

Mediation analyses using PROCESS (Hayes, 2013) (Model 4) for a more robust statistical analysis to test this model tested whether the mood change induced by a football game's outcome in turn shapes self-esteem (H5). University enrollment was the predictor variable (X), mood change was the mediator (M), and self-esteem change was the dependent

variable (Y), while controlling for exposure context and team affiliation at signup. Two models were run: The first model examined mood and self-esteem changes between before the game and the day after (Saturday-Sunday), while the second looked at changes between before the game and two days later (Saturday-Monday).

Being enrolled at ANONYMOUS\_A versus ANONYMOUS\_B had a negative impact on mood,  $\text{coeff.} = -11.21$  (S.E. = 3.91),  $p = .005$ . In turn, the mood change influenced self-esteem change, as the more the mood improved, the greater the self-esteem enhancement,  $\text{coeff.} = .08$  (S.E. = .036),  $p = .025$ . The direct effect from university enrollment to self-esteem change was not significant ( $p = .902$ ). The postulated indirect effect showed that being enrolled either at the university whose team won or at the losing team's university affected self-esteem via mood change,  $\text{coeff.} = -.90$  (S.E. = .66), CI [-2.64, -.03]. This supports Hypothesis 5 based on the measurement on the day following a victory of one's university team, which enhanced self-esteem via mood.

When applying the same model to the change measures derived as differences between Saturday and Monday scores, no significant impacts emerged. So, for the impacts captured two days after the game, no support emerged for Hypothesis 5.

### **Self-Esteem Hypothesis Model (H6)**

Further mediation analyses using PROCESS (Model 4) for a more robust statistical analysis to test this model examined whether change in group affiliation mediated a self-esteem impact of a college football victory or loss. University enrollment was the predictor variable (X), group affiliation change was the mediator (M), and self-esteem change was the dependent variable (Y), while controlling for exposure context and team affiliation at sign-up. Two models were run: The first model examined group affiliation and self-esteem changes between before the

game and the day after (Saturday-Sunday), while the second looked at changes between before the game and two days later (Saturday-Monday).

For the first model, university enrollment was not a significant predictor of group affiliation change ( $p = .910$ ), which challenges the notion that after a loss, sports spectators distance themselves from an associated team/group (Hypothesis 2). Yet group affiliation change predicted self-esteem change,  $\text{coeff.} = 2.47$  ( $\text{S.E.} = .83$ ),  $p = .004$ , because increased affiliation enhanced self-esteem. Neither the direct effect nor an indirect effect was significant (*n.s.*). The second model (Saturday-Monday) yielded similar findings, but the impact from group affiliation change on self-esteem change was only marginally significant ( $p = .09$ ). These analyses do not suggest that a sports win increases self-esteem via group affiliation; Hypothesis 6 was not supported.

### **Sociometer Model (H7)**

Additional mediation analyses using PROCESS (Model 4) for a more robust statistical analysis to test this model investigated whether change in group affiliation mediated a self-esteem impact of viewing a football game, in particular if the viewing occurred in a social context as opposed to a private setting. The exposure context (did not watch, watched privately, watched socially) was utilized as a continuous variable because the ANOVA (regarding Hypothesis 4a) reported above had yielded a linear effect on group affiliation. Accordingly, exposure context served as the predictor variable (X), group affiliation change was the mediator (M), and self-esteem change was the dependent variable (Y), while controlling for university enrollment as well as team affiliation before game. Two models were run: The first model examined group affiliation and self-esteem change between before the game and the day after (Saturday-Sunday), while the second looked at changes between before the game and two days

later (Saturday-Monday).

The first model (Saturday-Sunday) found no significant impact from exposure context on group affiliation change (in contrast to the above reported ANOVA that had utilized more measurement points). However, change in group affiliation impacted self-esteem change, as noted above,  $\text{coeff.} = 2.47$  ( $S.E. = .83$ ),  $p = .004$ , as when group affiliation went up, so did self-esteem. Neither the direct nor the indirect effects were significant. Thus for the impacts captured on the day after the game, H7 was not supported.

The second model (Saturday-Monday) detected that exposure context fostered group affiliation change,  $\text{coeff.} = .33$  ( $S.E. = .12$ ),  $p = .005$ . In turn, the group affiliation change had a slight impact on self-esteem change that was marginally significant,  $\text{coeff.} = 1.40$  ( $S.E. = .82$ ),  $p = .091$ . The direct effect from exposure context on self-esteem change was not significant ( $p = .510$ ), but the indirect effect from exposure context via group affiliation change on self-esteem was significant, with a point estimate of .464 (boot  $S.E. = .38$ ),  $CI [.0005, 1.637]$ . Hence, having watched the game regardless of outcome, even more so when watched socially, fostered greater connectedness on Monday after the game, when students were back on campus, and in turn, enhanced self-esteem, supporting Hypothesis 7 for impact captured two days after the game.

### **Integrated Process Model: Impacts of Win/Loss and Exposure Context on Mood, Group Affiliation, and Self-Esteem (H8)**

A mediation analysis (per Hayes, 2013) using PROCESS (Model 6) for a more robust statistical analysis to test this model examined how university enrollment (X) affected the mood change between Saturday and Sunday, so presumably as a result of the football game, as a mediator (M1), and then in turn, as a second mediator group affiliation change (M2), which

ultimately affected self-esteem change (Y). Exposure context and team affiliation were controlled for.

University enrollment affected mood valence, as being enrolled at ANONYMOUS\_A (vs. ANONYMOUS\_B) had a negative impact on mood after game day,  $\text{coeff.} = -.11.21$  ( $S.E. = 3.92$ ,  $p = .005$ ), while exposure context and team affiliation did not affect mood significantly. The next mediator, group affiliation, was in turn influenced by mood change,  $\text{coeff.} = .010$  ( $S.E. = .0032$ ),  $p = .004$ , as the more the mood improved from before the game to the following day, the more did participants affiliate with their university. An increase in group affiliation, in turn, fostered an improvement in self-esteem,  $\text{coeff.} = 2.15$  ( $S.E. = .85$ ),  $p = .013$ . The only indirect effect that was significant was the two-step mediation path from university enrollment to mood change to group affiliation change to self-esteem change,  $\text{coeff.} = -.23$  (boot  $S.E. = .18$ ),  $CI [-.81, -.02]$ , which supports H8 for the impacts captured the day after the game.

A parallel two-step mediation model was applied changes between Saturday and Monday. University enrollment, so being affiliated with either the winning or the losing team, did not show a significant impact on mood change ( $p = .167$ ), while exposure context as control variable reflected that people who had watched the game (socially) were in a better mood still on Monday,  $\text{coeff.} = 5.68$  ( $S.E. = 2.77$ ),  $p = .041$ . Group affiliation change was, in turn, affected by mood change,  $\text{coeff.} = .008$  ( $S.E. = .003$ ),  $p = .010$ , as well as by exposure context,  $\text{coeff.} = .28$  ( $S.E. = .12$ ),  $p = .016$ , and team affiliation,  $\text{coeff.} = .12$  ( $S.E. = .06$ ),  $p = .028$ . No significant impact emerged for self-esteem change, and neither the direct nor any indirect effect was significant. Hypothesis 8 was not supported.

## Discussion



With sports events continuously yielding high ratings and public attention, the question arises as to what drives this interest and what could be potential outcomes relevant for society at large. This study examines how a sports event influences self-esteem, as such influence might explain the grand appeal while simultaneously having important self-esteem-based consequences ranging from self-regulation to health to interpersonal relationships. Three models—mood-as-information, SIT self-esteem hypothesis, and sociometer—undergirded the study, shedding light on how sport spectatorship may affect self-esteem. The empirical test of the hypotheses used three waves, collected before the game, one day after the game, and again two days after the game.

### **Advancements**

With developed experimental studies on sports spectatorship impacts on self-esteem rare (for an exception, see Hirt et al., 1992) and a few related field studies, the current research extends the insights on such impacts in four ways. First, data were not collected with recorded games—instead, the variation of win and loss of an observed game serves as a quasi-experimental factor in a field study, in which participants choose to watch a football game or learn about its outcome through other means. The present work adds to prior evidence by using a different context with greater ecological validity but less controlled exposure context, in which impacts may be harder to demonstrate due to greater error variation. While a few studies collected self-esteem data from spectators after live events (Bizman & Yinon, 2002; Schram & Knoll, 2017), insights may be impaired by demand characteristics, because these studies used only targeted questions and did not veil the research purpose with a cover story or distractor tasks or questions (as the present project did).

Second, while Hirt et al. (1992) collected data on self-esteem impacts immediately after exposure to a basketball game in a lab context, since the study did not track changes across time (i.e. pre- and post-game), it is not possible to determine if the difference in self-esteem between who watched a win and who watched a loss was due to the game. The present study utilized self-esteem measures collected one and two days after the game to assess how long any self-esteem impacts might linger, since it has been suggested that daily events can have longer-term effects on self-esteem (Greenier, Kernis, McNamara, Waschull, Berry, Herlocker, & Abend, 1999).

Third, Hirt et al. (1992) compared participants that had either watched their favored team win or lose, in a post-test only design. Likewise, Bizman and Yinon (2002) collected data only after a game, and Schramm and Knoll (2017) obtained measures before and after a game from different respondents. These designs are not suited to track changes across time and only show group differences. In contrast, the present study collects data before the game and on the two following days from all participants, while using a cover story and distractor questions.

### **Self-Esteem**

From a theoretical perspective, while all three models were relevant to the study at hand, one of the largest takeaways—that winning bolstered self-esteem two days later yet the inverse could not be said for losing two days later—appears to offer a correlate to game theory (Myerson, 1991). One portion of game theory posits that the fear of loss tends to be stronger than the presumed gains arising from victory; in essence, before a game commences, many opt out fearing the pain will be greater in magnitude than the boost from a win. This paper lends credence to those fears, showing a lasting (at least in units of days) self-esteem deflation from a loss without a similar inflation from the victory. Future work should endeavor to explore the

relationships in terms of magnitudes (rather than dichotomies) between, for instance, Basking in Reflected Glory as opposed to Cutting Off Reflected Failure.

In an effort to explain how exactly the game influenced self-esteem, three mediation models were tested (see Figure 2). The game outcome's impact on mood had a subsequent impact on self-esteem on the day after the game, in line with the mood-as-information perspective. The SIT self-esteem hypothesis that individuals' self-esteem is influenced as a result of affiliating more strongly with a group associated with win and distancing oneself from a group associated with a loss, was not supported; Although group affiliation change affected self-esteem, the group affiliation change could not be traced to game outcome. However, the process proposed based on the sociometer model--that spectators feel more affiliated with the group as a result of watching the game and, in turn, experience a self-esteem boost--was supported but only within the third wave. Apparently, returning to campus on Monday after the game, with common conversations about the event, made it salient whether the sports event had been attended to, probably leading to watching it in the first place being more important two days after the game.

### **Mood**

This multiple waves approach yielded several important insights. First off, while a loss reduced positive moods among the ANONYMOUS\_A participants, even 2 days after the game, the victory of ANONYMOUS\_B did not enhance the mood among ANONYMOUS\_B students. This is surprising given that many studies found mood effects, but they consistently compared different groups of respondents and did not track actual changes across time. Wann et al. (1994) collected pre- and post-game mood measures, finding a win would improve mood states while a loss had also had a significant negative effect. Yet the research purpose in their study was not veiled in any way and the measures were collected immediately pre-/post game, whereas our

study examined more general moods by collecting the measures at some point in the 24 hours before a game and then again on the following two days. It is likely that the ANONYMOUS\_B students were generally already in an elevated mood due to the weekend and the upcoming game event, which may have prevented that the win induced a mood improvement still detectable on the following day. It is peculiar that the results differ when comparing self-esteem to mood, as it might be expected that both would be positively related to each other. Particularly, why was it that students at the winning university felt positive increases to their self-esteem while not having the same increases in mood? Future studies should explore this finding in more depth to see if the results mentioned in this manuscript are ordinary.

When testing a serial mediation model (see Figure 3) that incorporated the proposed mediators by considering that the mood change after a win/loss would shape the extent to which group affiliation changes, the self-esteem change could be traced to group affiliation changes resulting from winning/losing: The win/loss led to mood impacts, that in turn, shaped the group affiliation change, which then influenced self-esteem change on the day after the game. The processes and dynamics are undoubtedly complex: All three proposed models contributed to explaining self-esteem impact, as win/loss, mood change, group affiliation change, viewing context, as well as timing of the measurement all altered self-esteem as a result of the game.

### **Group Affiliation**

Even more intriguingly, the win/loss did not affect group affiliation (Hypothesis 2 not supported). Building on the notions of BIRG and CORF (Cialdini et al. 1976), one would presume that not only affiliation expressed to others will be shaped by winning and losing, but that also privately perceived affiliation changes as a result of game outcome (as Cialdini et al. proposed as well). Similar to Sloan (1979), university group affiliation was examined and not

specifically team affiliation, as asking about the latter would sensitize participants in a multi-wave study. It is possible that ‘Basking in Reflected Glory’ and ‘Cutting off Reflected Failure’ pertain more to the athletic teams specifically than to the larger group of academic institution. Principles of sunken cost fallacies may be in play; given that the cost of four years of American education is now regularly exceeding \$100,000 for many students (Powell, 2018), the college one chooses to attend (and support) becomes seemingly more hard-wired than ever before.

However, it also should be noted that prior research usually examined BIRG and CORF for past games, whereas this data was collected immediately after game day. As such, at least one day later, people affiliated with a team do not privately distance themselves as much, though public expression of affiliation could still be influenced. However, sports viewing context influenced affiliation with academic institution as predicted: Those who watched the game with friends felt more affiliated with their university than before the game for the two days. On the other hand, people who did not watch the game, felt less affiliated with their institution on post-game Monday, and significantly less affiliated than people who had watched the game with friends. It should be noted that we are not claiming that there are behavioral changes in terms of BIRGing or CORFing, rather we only extend this discussion in the context of our own study.

### **Game Outcome and Viewing**

Importantly, the game outcome as well as watching the game in the first place had lasting impacts on self-esteem and mood, yet in different manners. Fans of the winning team showed increased self-esteem (with no related mood improvement) while fans of the defeated team showed decreases in mood (with no related self-esteem deflation). It is possible that the mere effect of feeling connected to others while watching the game socially had a self-esteem sustaining effect in general—indeed, watching the game led to increases in self-esteem, whereas

those not watching it experienced a self-esteem drop on the Monday after the Saturday game, possibly due to not being able to debrief via post-game talk. It has been noted in Wann's (2006) Team Identification–Social Psychology Health Model that sports identification increases well-being because of the social connections with other fans. While we are not claiming that watching the game in general lead to boosts in self-esteem, these findings support the notion that sports can lead to an increase in general well-being.

### **Limitations**

Our study was not without its limitations, however. It focused on one particular sports event with invested college student populations—replication with other events is called for. It is also relevant to examine whether the detected pattern applies to other types of sports and other cultural contexts as well. While the multi-wave design allows for capturing processes over time, concerns exist regarding attrition and respondent fatigue—for example, perhaps the people that were most ecstatic or most depressed about the game outcome did not complete the study. It should be cautioned that self-esteem is usually measured as trait self-esteem while this article was examining state self-esteem. While the present research did not focus on nuances of fandom, future work could try to disentangle affiliation with team on the one hand and affiliation with an institution or a fan base on the other hand. As with any field study design, additional influences may have been at work that were not considered here. For instance, enormous variation in individuals' viewing situations exist—the present differentiation by exposure context is an attempt to get a grip on that variation. The timing of the questionnaires for participants may have had some unmeasured effect on how participants answered. This might be best seen in the data collected on a Monday, where the answers given may be biased due to differing motivations for the upcoming week. Further, due to space limitations, the utilized theories could not be examined

in greater depth (e.g., impacts of dispositions per ADT were beyond the scope of the present analyses).

Sports is one of the most fascinating media topics, with large, devoted audiences that invest tremendous time, energy, and loyalty into beloved teams. Yet this may not be a selfless endeavor because they may often primarily seek lingering self-esteem boosts, per present investigation. Future work should explore personal and societal consequences—specifically, whether sport viewing affects health behaviors in terms of physical or mental health. The present work demonstrates that sports events involving preferred teams matter for well-being through enduring self-esteem impacts.

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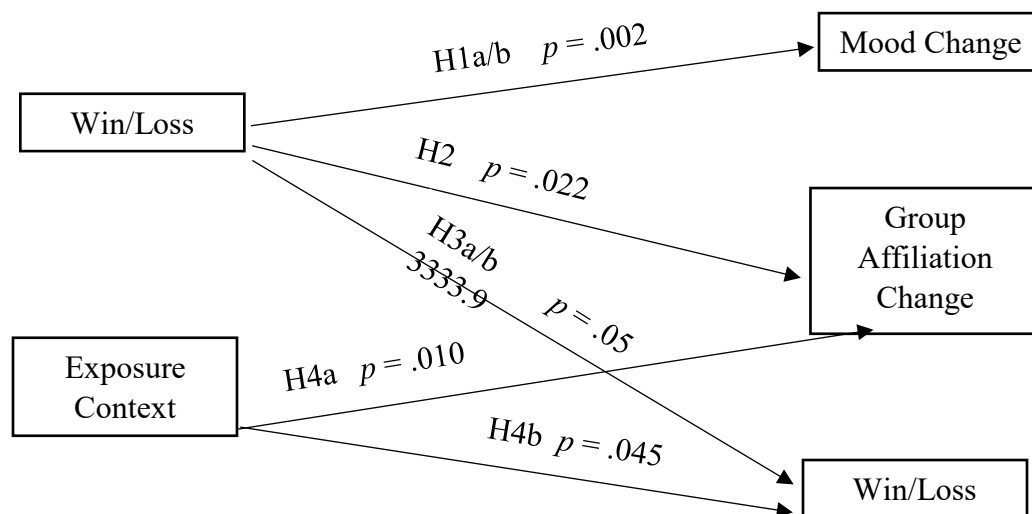
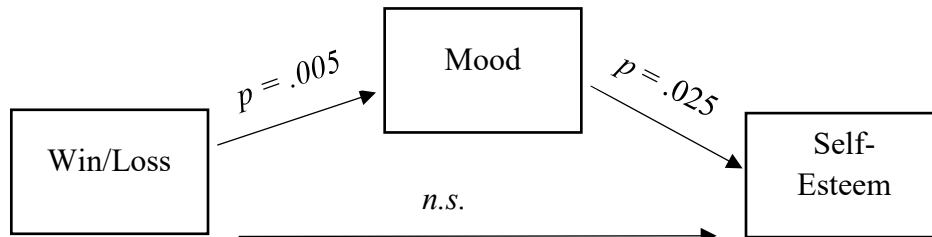
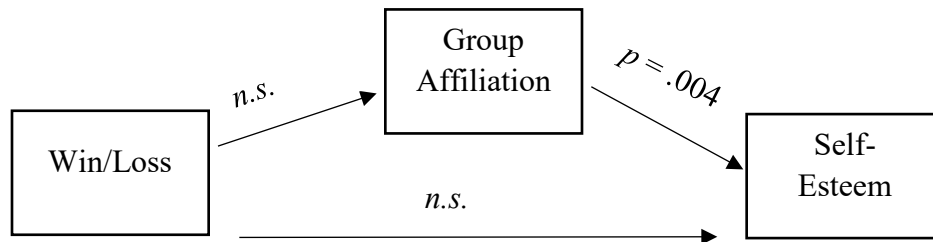


Figure 1: Illustration of hypotheses on direct effects

## Mood-as-Information Model (H5)



## SIT Self-Esteem Mediation Model (H6)



## Sociometer Mediation Model (H7)

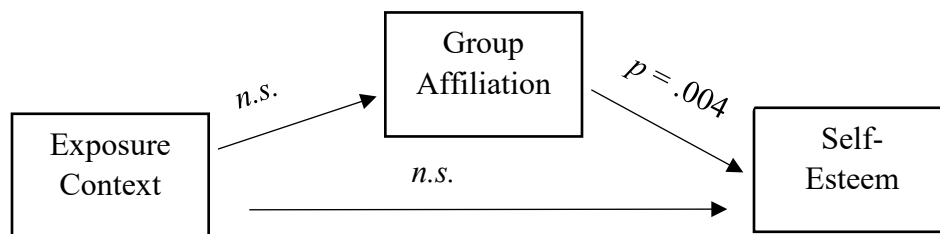


Figure 2: Illustration of hypotheses on mediated effects

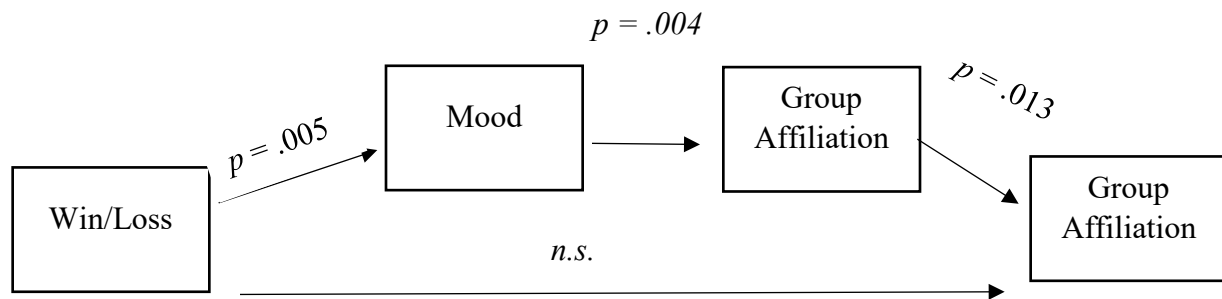


Figure 3: Illustration of hypotheses on serial mediation effects



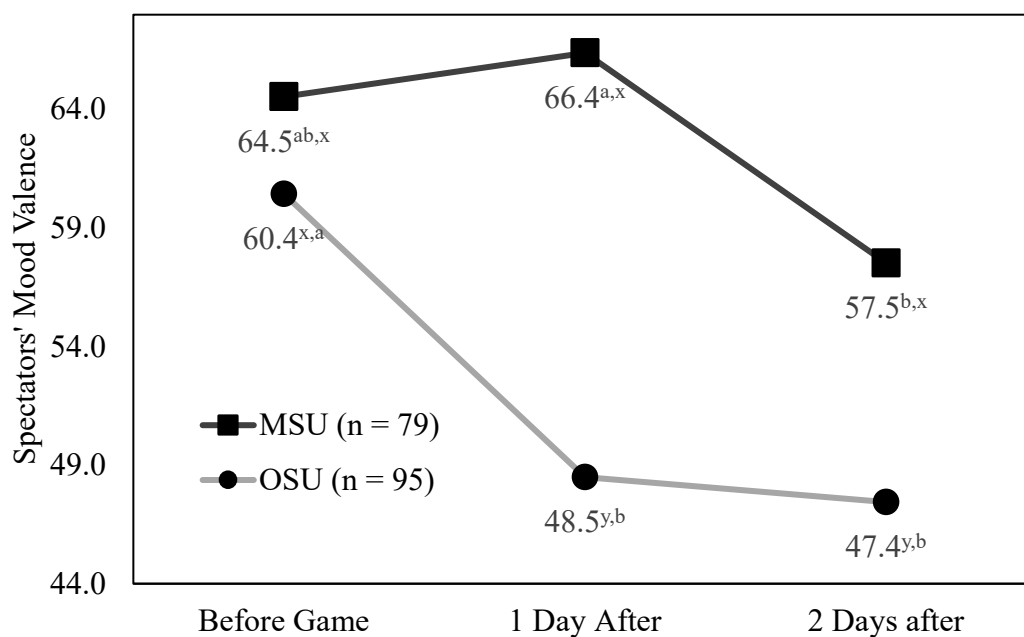


Figure 4: Mood valence as a function of university affiliation, before and after a college football game with ANONYMOUS\_B score 17 to ANONYMOUS\_A score 14 outcome

*Note.* Estimated marginal means. Means within a data series with different a/b letters differ significantly at  $p \leq .05$  in subsequent one-sided tests with Sidak correction. If means from the same day have different x/y letters, they differ at  $p \leq .05$  in subsequent one-sided tests with Sidak correction.

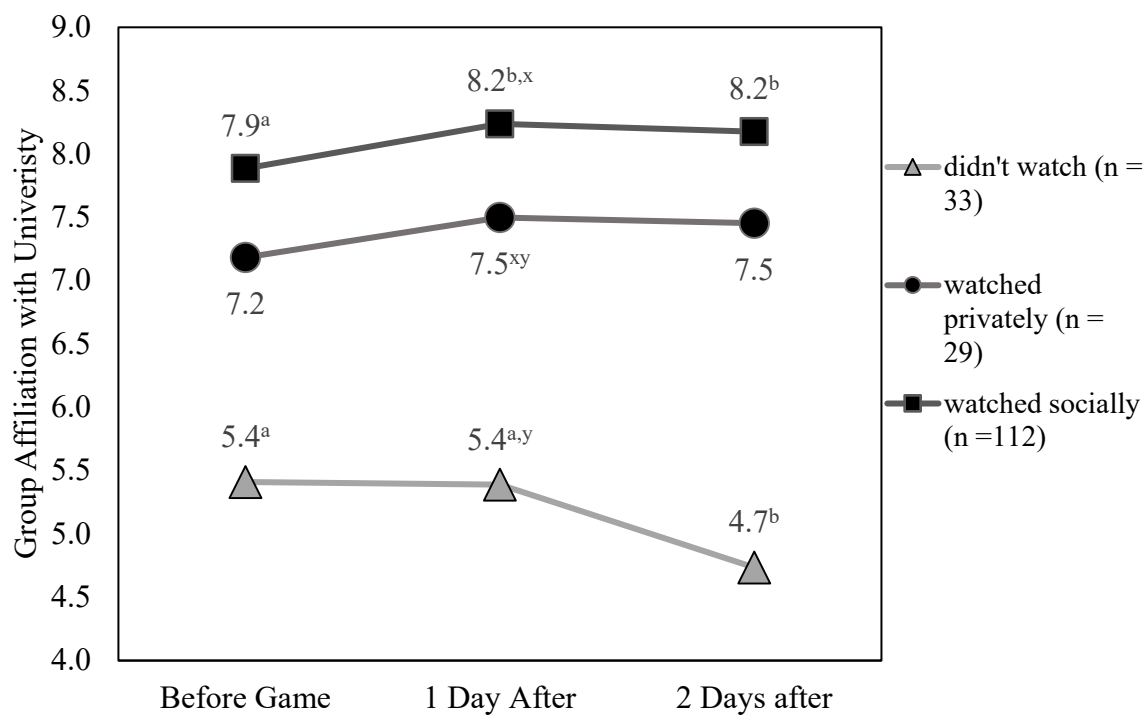


Figure 5: Group affiliation with university as a function of game viewing context, before and after a college football game

*Note.* Estimated marginal means. Means within a data series with different a/b letters differ significantly at  $p \leq .05$  in subsequent one-sided tests with Sidak correction. If means from the same day have different x/y letters, they differ at  $p \leq .05$  in subsequent one-sided tests with Sidak correction.

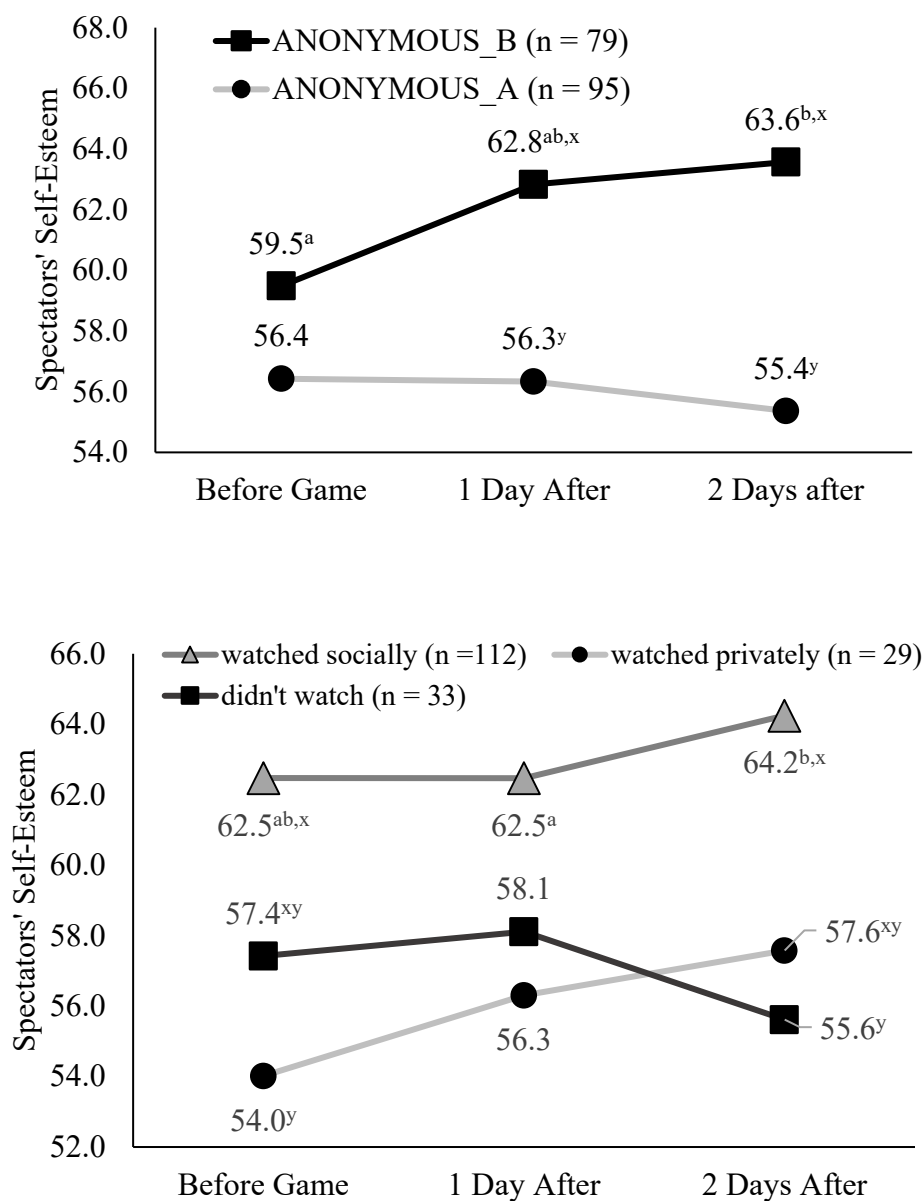


Figure 6: Impacts on Sports Spectators' Self-Esteem

*Note.* Estimated marginal means. Means within a data series with different a/b letters differ significantly at  $p \leq .05$  in subsequent one-sided tests with Sidak correction. If means from the same day have different x/y letters, they differ at  $p < .05$  in subsequent tests with Sidak correction.

**Table 1: Descriptive Statistics and Reliability of Measures**

	First Wave	Second Wave	Third Wave
<i>M</i>			
Mood Valence	63	57	54
Group Affiliation	7.26	7.53	7.36
Appearance Self-Esteem	58	57	57
Social Self-Esteem	59	62	62
Performance Self-Esteem	63	63	62
<i>SD</i>			
Mood Valence	22	24	24
Group Affiliation	2.42	2.58	2.73
Appearance Self-Esteem	23	24	24
Social Self-Esteem	26	26	26
Performance Self-Esteem	21	20	21
Cronbach's Alpha (or <i>r</i> for 2 items)			
Mood Valence	.63	.75	.67
Group Affiliation	.87	.92	.93
Appearance Self-Esteem	.83	.83	.82
Social Self-Esteem	.80	.84	.88
Performance Self-Esteem	.79	.81	.81