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Everyone else is doing it: The association between social identity and susceptibility to peer influence in NCAA athletes

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Abstract

We examined athletes' conformity to teammates' risky behaviors through a performance-based manipulation paradigm. We hypothesized that athletes who strongly identified with their team would be at increased risk of conforming to teammates' behaviors. Athletes ($N = 379$) from 23 intact NCAA teams completed surveys (e.g., social identity) and reported the extent they would engage in risky behavior scenarios (e.g., drinking and driving). Researchers then displayed ostensible responses that were manipulated to appear as though teammates reported high engagement in the risky behaviors. Finally, athletes again responded to the hypothetical scenarios and a conformity index was created. Results indicated that social identity, at both the individual- and group-level, positively predicted conformity – indicating that athletes with stronger social identities are more susceptible to peer influence. Although these findings highlight a pernicious aspect of social identity, they also provide insight into how group-level processes could be leveraged to prevent risky behaviors in student-athletes.

Keywords

Conformity; Alcohol; Substance Use; Concussion; Hazing; NCAA

Although participation in intercollegiate sport is linked to many positive outcomes (e.g., high graduation rates; Gayles & Hu, 2009), student-athletes also engage in higher levels of risky behavior than their non-athlete peers (Brisola-Santos et al., 2016; Taylor, Ward, & Hardin, 2017; Turrisi, Mastroleo, Mallett, Larimer, & Kilmer, 2007). We conceptualize risky behavior as hazardous conduct – either on or off the sporting field – that jeopardizes the physical or social health of an athlete or fellow team members. Some of the risky behaviors in which student-athletes are at heightened risk of engaging include driving under the influence of alcohol (e.g., Nelson & Wechsler, 2001), recreational drug use (e.g., Egan, Erausquin, Milroy, & Wyrick, 2016), performance enhancing drug use (Buckman, Farris, & Yusko, 2013), and concealing concussion-symptoms to remain in play (Chinn & Porter,

2016; Kroshus, Kubzansky, Goldman, & Austin, 2015). Given that risky behavior often takes place within the team environment, it is prudent to consider how social processes may impact decisions to engage in risky behavior.

Exploring why risky behaviors may coalesce within sport group environments, researchers have attempted to explain these patterns by studying adherence to norms (i.e., behavioral standards expected of group members; Carron & Eys, 2012). As a set of behavioral standards expected of members within a social category (Carron & Eys, 2012), norms vary in whether they are distally or proximally tied to a specific group. As an example of a distal form of social influence regarding risky behavior, athletes who perceive other athletes to approve of doping are more likely to hold positive intentions for doping (Ntoumanis, Ng, Barkoukis, & Backhouse, 2014). More proximally, athletes are particularly inclined to use alcohol and recreational drugs when they believe that teammates approve of (i.e., injunctive norms) and/or engage in these behaviors (i.e., descriptive norms; Grossbard, Hummer, LaBrie, Pederson, & Neighbors, 2009; Olthuis, Zamboanga, Marten, & Ham, 2011; Seitz, Wyrick, Rulison, Strack, & Fearnow-Kenney, 2014). In a review of the link between sport involvement and alcohol use, Zhou and Heim (2014) argue that intercollegiate sport teams are particularly peer-intensive and insular, which means that student athletes feel strong pressure to behave in line with perceived team norms. Although this evidence base supports the interrelatedness between perceived behaviors of teammates and one's own behavior, correlational studies using perceived norms scales are limited in the ability to demonstrate peer influence (i.e., athletes' own behaviors may influence their perceptions of teammates' behavior). To advance our understanding of the social processes that underlie athletes' decisions to engage in risky behaviors, we used a manipulated peer response paradigm (MPR-paradigm) to capture athletes' susceptibility to peer influence.

Theoretical Foundation of Peer influence

Pertaining to decisions involving risky behavior, student-athletes are in a developmental stage in which they are more easily influenced by peers. That is, during late adolescence (i.e., around 18–22 years of age), the brain is particularly susceptible to social rewards that accompany risky behavior (Webber, Soder, Potts, Park, & Bornovalova, 2017). Furthermore, this period is marked by increased sensitivity to peer influence and increased drive for peer approval (Burnett, Sebastian, Cohen Kadosh, & Blakemore, 2011). Adolescents are strongly motivated to acquire social status within their peer-groups, which is often attained by mimicking or adhering to the prototypical behaviors of others within the group who have high status (Helms et al., 2014; Teunissen et al., 2016). Theorists have identified three underlying motives for this propensity toward peer conformity, including: (a) being socially accepted by group members and avoiding rejection, (b) establishing or maintaining self-concept as a member of the group, and (c) aligning with high status group members (Fishbach & Tu, 2016; Nail, MacDonald, & Levy, 2000).

Cialdini and Goldstein (2004) note that conformity motives commonly fit within one of two profiles. On one hand, *normative social influence* refers to cases where conformity is driven by anticipated social benefits that accompany belonging to a high-status group such as a sport team, as well as the social drawbacks of not conforming (e.g., social exclusion;

Deutsch & Gerard, 1955; Cialdini & Goldstein, 2004). Alternatively, *informational social influence* refers to when conformity emerges through commonplace thinking that others' actions are the 'proper' way to behave. This is also referred to as social proof, because group members take cues and mimic what they believe to be 'correct' behavior (Deutsch & Gerard, 1955). These two motives commonly co-occur, but are conceptually and empirically distinct (Cialdini & Goldstein, 2004).

Applied to sport, peer conformity refers to instances where athletes adjust personal attitudes or behaviors to correspond with information that they receive about attitudes held by other athletes (i.e., injunctive norms) or behaviors of other athletes (i.e., descriptive norms; see Cialdini & Goldstein, 2004). In contrast, *independence* is when an individual is not influenced by the norms, behaviors, or standards of the group, and *anticonformity* refers to instances where athletes actively demonstrate behaviors or attitudes that conflict with, or go against, group member expectations (Nail et al, 2000). Given the salience of social processes within small groups (Gaertner, Sedikides, Vevea, & Iuzzini, 2002), we specifically focus on *intrateam conformity*, which we define as occasions where group members adjust their own attitudes or behaviors to correspond with what they believe to be the attitudes and behaviors of specific teammates or the group as a whole.

Social Identity Approach.

Conformity is a unique form of social influence in that theorists are clear that a group members' decision to conform is a motivated process (Cialdini & Goldstein, 2004; Nail et al., 2000). Considering that maintaining a positive self-concept and group identity is a core motive to conform, our conceptual stance for examining intrateam conformity is informed by social identity theory and self-categorization theory (i.e., social identity approach; Rees, Haslam, Coffee, & Lavallee, 2015). Social identity is "that part of an individual's self-concept which derives from his/her knowledge of his/her membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1981, p. 255). People are drawn to identify with groups because it helps individuals to find their place within the social world while being a source of pride and self-esteem (Tajfel, 1981). Group membership also informs behavior, whereby group identification leads an individual to internalize the normative group behaviors and uphold the characteristics of a *prototypical* member of that group (Benson, Bruner, & Eys, 2017; Hogg, 2016). When group membership is a salient aspect of an individual's self-concept, individuals are more likely to conform to normative group behavior through a process called depersonalization (Hogg, Abrams, & Brewer, 2017). This process involves an individual coming to view oneself less as a unique individual, and more as a stereotypical member of the group, which leads individuals to conform to group norms and strive to be a prototypical member (Hogg, 2016). Notably, athletes with stronger social identities may feel more pressure to conform to teammates' risky behaviors.

Sport researchers commonly view social identities as positive forces that unite teammates around shared goals and ensure members enjoy their group membership. This could generate positive forms of intrateam conformity, as individuals feel motivated to conform to prosocial behaviors in which fellow group members engage (e.g., Nook, Ong, Morelli, Mitchell, &

Zaki, 2016). Considering anecdotal and empirical examples regarding how negative behavior patterns emerge within groups, it is also evident that social identities may pull team members toward potentially risky behaviors of teammates (e.g., Benson et al., 2017). This is especially concerning because athletes tend to overestimate teammates' levels of risky behavior (e.g., Neighbors et al., 2010), so athletes could conform to risky behaviors that are not truly the norm within their group. To drive forward theory and practical application regarding ways that the group environment impacts decisions to engage in risky behavior, it is essential to conduct research that targets the mechanism of peer influence within groups.

Whereas existing correlational findings reveal how athletes' self-reported risky behaviors are related to those of their teammates (e.g., Hummer, LaBrie, & Lac, 2009), we still have a limited understanding of whether athletes are conforming to peer influence of teammates and, if so, why. Existing research is limited when considering conformity because many alternative explanations for co-occurrence of teammate behaviors remain (e.g., selection effects, where similar types of individuals join given teams and certain sports) and because mechanisms of social influence have not been studied (i.e., social identity). Perhaps more importantly, conformity and peer influence are not easily observable constructs. To demonstrate and (in turn) study intrateam conformity, it is essential to study the extent that individuals are exposed to information that differs from their existing behaviors and attitudes and whether they change as a result (Nail et al., 2000).

Current Study

The purpose of the current study was to examine how feedback about teammates' normative behaviors in both risky (e.g., concealing concussion symptoms) and prosocial (e.g., volunteering for a charitable organization) scenarios influenced individual athletes' responses. Crucially, we also examined whether perceptions of social identity influenced the likelihood of conforming to teammates. The principle hypothesis was that social identity strength would positively predict the extent to which athletes conformed within the MPR-paradigm (i.e., altered response to align with ostensible team behavior). In addition to the main effect of social identity, there is preliminary evidence that conformity may be more likely among males (Brechwald & Prinstein, 2011), among those who are relative newcomers to sport teams (Benson & Eys, 2017), and among those with lower self-esteem (MacDonald & Leary, 2012). As such, we also explored how strength of conformity was influenced by gender, tenure with team, and global self-esteem.

Method

Participants

Ethical approval was obtained from the lead author's institutional review board prior to recruiting participants, and all participants provided informed consent. Two-hundred coaches of NCAA division II and III teams in Pennsylvania, U.S.A. were sent an initial e-mail that broadly described our interest (i.e., to better understand athletes' decision-making processes toward positive and risk-taking behaviors). We requested that coaches respond by phone or e-mail if they were interested in having their team participate. From this recruitment, 23 coaches voluntarily contacted us to set up a time for members of the research team to meet

with the athletes to explain the study and invite participation. Although we had a low response rate from coaches, we had a high response rate from athletes within those teams (i.e., on average 83% of team members were in attendance). Athletes were informed that they were under no obligation to participate, and that their decision to participate or not would be unknown to the coaches. Participating athletes were compensated for participation with a $10 gift card, but were also informed that by simply attending the meeting they had fulfilled the requirements to be compensated. In total, two athletes decided to not participate.

The final sample included 379 NCAA student-athletes (M_{age} = 19.70, SD = 1.30, 44% male) from 23 intact division II and III sport teams (k = 3 volleyball, k = 6 soccer, k = 4 lacrosse, k = 3 field hockey, k = 1 baseball, k = 3 softball, k = 1 basketball, k = 2 cross country). Each team was represented by 8 – 40 athletes (M = 16.48; SD = 6.70). Most participants were in their first year of college (38%), and the remaining participants were spread across their second (25%), third (22%), and fourth (13%) years. Average tenure with team was 1.91 seasons (SD = 1.02).

Developing the MPR-paradigm through focus groups and pilot testing

The MPR-paradigm applied in the current study entailed designing hypothetical scenarios (e.g., being offered marijuana), asking athletes to indicate how they would most likely respond to given situations, and displaying data regarding the teams' responses back to the participating athletes. Responses were manipulated to appear as though teammates reported high engagement in these activities and athletes were later given the opportunity to respond to the same hypothetical scenarios, whereby we assessed whether athletes altered their responses. Participants engaged in the study alongside teammates in the same room, to ensure beliefs that normative responses were derived from all members in attendance. Similar paradigms have been used in developmental psychology as a performance-based measure of susceptibility to peer influence (i.e., Prinstein et al., 2011), and was developed herein as a measure of the extent that group members conformed to teammate feedback. To identify realistic and believable hypothetical scenarios, initial scenarios and response options were reviewed by a focus group and, in turn, the MPR-paradigm was pilot tested.

The primary investigator conducted an in-depth focus group discussion with seven recently graduated NCAA athletes that each played a different sport. Focus group members discussed scenarios, both risky and prosocial, that they had faced during their sport careers. After summarizing focus group responses, the researchers created nine distinct scenarios (i.e., six risky, three prosocial) and created response options to represent an array of ways student-athletes could respond to each. The MPR-paradigm was then pilot tested with 18 members of an NCAA division I women's gymnastics team. Pilot test participants completed the entire study protocol, and then participated in a group discussion with the lead author to provide input regarding their experiences and, specifically, the believability of the manipulation. Whereas the pilot testing and focus group process confirmed that the manipulation and scenarios would be convincing, it also led the research team to amend the wording of scenarios and response options. Notably, participants highlighted cases where response options were too narrow and/or inflexible, which made it necessary to provide more conservative and risky response options (e.g., for an alcohol-related scenario,

providing options for both fewer and greater numbers of drinks consumed). Respondents also indicated that bogus team data would be more believable if some actual data were presented. This feedback led us to add a tenth item regarding alcohol use the night before a practice, for which true team responses were displayed to aid believability in the data. The protocol that was ultimately used with the study sample is described in detail below.

Procedure

The final version of the scenarios and materials used within the MPR-paradigm are provided in the supplemental materials. Athletes completed the study before or after team meetings and were informed that our research was investigating student-athletes' decision making in situations that they may face. Study involvement entailed: (1) completing a set of survey scales using electronic tablets (i.e., pre-manipulation), (2) exposure to a MPR-paradigm led by the researchers, (3) responding to survey items on the tablets (i.e., post-manipulation), and finally, (4) a debriefing.

The pre-manipulation phase included completing demographic questions (e.g., age) along with social identity and global self-esteem scales. Participants also provided responses regarding their anticipated behaviors in numerous hypothetical situations. Participants read seven scenarios regarding risky behaviors (e.g., binge drinking) along with three scenarios involving prosocial behaviors (e.g., volunteering), and indicated how they would most likely respond to each.

Once members completed the pre-manipulation survey, researchers informed the team of athletes that, "to make this process a learning experience, and to generate discussion about these sort of tough situations, we are going to show you how the team *as a whole* responded to some of these situations." We then presented a PowerPoint slideshow that included histograms presenting the percentage of team members who chose each response option, using slides that resembled a software interface that automatically generated information about the team's responses. Team members' true data was provided for the first scenario (i.e., drinking alcohol on the night before a practice) to increase believability in the data. However, data regarding team member responses for the remaining scenarios were manipulated to appear as though the team had responded with highly risky responses (or highly prosocial responses, for the final three scenarios).

Following the manipulation, participants completed the 'post-manipulation' survey in which researchers informed the athletes that:

> "Prior to a group discussion about these tough situations, we want to ask a few more questions about yourself, and you may see questions that you have already responded to. You do not have to answer the same as you did before, but please answer honestly."

During this phase, participants provided responses to the same scenarios that were completed during the pre-manipulation survey, as well as additional demographic and attention check items. After team members completed all survey items, we explained the details of the MPR-paradigm to ensure that participants understood that the bogus researcher-manipulated data did not represent their team. To avoid participants from other

teams learning of the manipulation, we requested that participants avoid discussing the MPR-paradigm with other athletes at the school.

Measures

Demographic items.—A variety of demographic variables, including age, gender, tenure with team, year in school, and starter status were collected.

Social identity.—Social identification with athletes' teams was assessed using the nine-item Social Identity Questionnaire in Sport (SIQS; Bruner & Benson, 2018)), which was adapted from Cameron's (2004) social identity questionnaire. Three items pertained to each of the three dimensions: ingroup ties (e.g., "I feel a sense of being 'connected' with other members of this team"), ingroup affect (e.g., "I feel good about being a member of this team"), and cognitive centrality (e.g., "In general, being a member of this team is an important part of my self-image"). Participants responded using a seven-point Likert-type scale ranging from one (*strongly disagree*) to seven (*strongly agree*). In evaluating the psychometric properties of the SIQS using three independent samples, Bruner and Benson (2018) suggested that if the substantive research question centers on social identity as a global construct, then a unidimensional approach can be empirically and conceptually appropriate. Consistent with the purpose of the current research, all items were aggregated to create a global measure of social identity strength.

Global self-esteem.—A four-item measure by Daniels and Leaper (2006) was used to assess athlete self-esteem. The items were: "I have a lot of good qualities;" "I have a lot to be proud of;" "I like myself just the way I am;" and "I feel like I am doing everything just right." Although this measure has typically utilized a five-point scale, we presented participants with a seven-point Likert-type scale ranging from one (*strongly disagree*) to seven (*strongly agree*). This decision was made to harmonize the response options across instruments, and because seven-point scales provide a balance between having enough points of discrimination without overwhelming the respondents (e.g., Nunnally & Bernstein, 1994).

Hypothetical scenarios.—The vignettes that depicted risky behaviors included the following scenarios: (a) drinking alcohol the night before a practice, (b) binge drinking alcohol at a house-party during the off-season, (c) being offered marijuana at a concert during the off-season, (d) driving friends home after consuming alcohol, (e) concealing concussion symptoms to remain in play, (f) being offered a performance enhancing drug (PED) by a trusted family-friend, and (g) participating in hazing incoming teammates. Additionally, athletes responded to the following potentially prosocial scenarios: (h) volunteering time for a charitable organization, (i) donating money to an apparently homeless person, and (j) helping a stranger who spilled groceries at the expense of missing an important meeting. Athletes responded to each scenario by selecting one of a set of five or six potential behaviors, which ranged from not at all risky/prosocial (i.e., no engagement whatsoever) to options that represented high engagement in the risky/prosocial behavior. Full descriptions of response options are available in the online supplement.

Manipulation and attention check.—To identify participants who correctly guessed the purpose of the study or who were suspicious of the protocol, we included a manipulation-check item at the end of the post-manipulation survey. Using an open-ended response item, participants indicated what they estimated the study's purpose to be. Additionally, participants completed a multiple-choice style attention-check item to identify a scenario that they were *not* asked about, from a list of four scenarios including three from the current study and another novel scenario (i.e., cheating on an academic test). Participants failed the manipulation and attention checks if they correctly estimated the study purpose, or incorrectly identified the scenario option.

Analysis Plan

Calculating conformity.—Conformity was operationalized using within-participant difference scores, which were calculated by subtracting pre-manipulation baseline responses from responses provided by athletes after the conformity manipulation (i.e., seeing teammates' ostensible responses). Indeed, alternative ways of considering change in a variable over time exist, with the most common alternative being the residualized score approach (de los Reyes & Prinstein, 2004). Nevertheless, Prinstein and colleagues (2011) tested difference scores alongside residualized scores when analyzing responses to a similar conformity paradigm, and recommended using difference scores because they yield nearly identical results to residualized scores and are easier to interpret. We calculated nine unique conformity scores rather than a composite variable because each of the behaviors represented qualitatively distinct forms of risky or prosocial behavior. Higher positive scores reflected greater conformity to teammates' ostensible behavior, a score of zero (i.e., no change) reflected *independence*, and a negative score represented *anticonformity.*

Predicting conformity.—In an initial step, we tested the assumption that the conformity variable is comparable across genders, as well as across sport types (i.e., based on level of interdependence; Evans, Eys, & Bruner, 2012). To do so, we conducted multiple group analysis, using the 'lavaan' package in R (Rosseel, 2012) to specify constrained and unconstrained models, which were subsequently contrasted using χ^2 difference tests. Next, given that collecting data from intact teams results in nested data that violates the assumption of independence, we performed multilevel modeling using the R package 'nlme' (Pinheiro et al., 2017). Using restricted maximum likelihood estimation, we allowed the intercepts to vary randomly by team so that effects were represented at individual- and team-levels to better represent the pattern of results and to reduce the type-1 error rate. We first calculated an intraclass correlation coefficient (ICC) for conformity scores (i.e., controlling for pre-manipulation response values), which represents the percentage of total variability that is due to between-group variability. Although ICC values are often used as arbitrary cutoffs to determine the need for multilevel analyses, even low ICC's can increase the type-1 error rate by up to 20% (Aarts, Verhage, Veenvliet, Dolan, & van der Sluis, 2014). To minimize type-1 error and to provide consistency in our analyses, we used multilevel modeling for all models. –

We computed separate models for each of the nine conformity scenarios, controlling for baseline responses in step-one by entering the pre-manipulation scores. This step was

essential to account for instances where baseline responses were so high that conformity was less likely or not possible (i.e., ceiling effect). In step-two, we entered gender, tenure with the team, and global self-esteem as fixed effects at the individual-level. In step-three we entered social identity as fixed effects at both the individual-level (group-mean centered) as well as the group-level. The use of grand-mean centering at the group was a necessary step to establish a meaningful zero-point on the scales (Enders & Tofighi, 2007).

Results

Preliminary and Descriptive Results

Preliminary analyses assessed the integrity of the data and the extent that assumptions were met. Five participants were aware that researchers manipulated their team's data and were subsequently removed from the analyses. Additionally, we removed two participants for whom critical data were not recorded by their devices. The remaining missing data, which ranged from 0% to 0.5% across variables, were determined to be missing at random (χ^2 (32, $N= 379$) = 19.14, $p = .97$) and were replaced using an expectation-maximization algorithm (Little, 1988). To inspect the assumption that the criterion variables did not differ as a function of gender or sport type, we contrasted unconstrained and constrained models. The gender unconstrained models did not provide a better fit to our data (i.e., χ^2 ranging from 1.37 to 7.40, all ps > 0.05), with the exception of conformity to helping a stranger (χ^2 = 9.95, $p = .041$). Similarly, the sport-type unconstrained models did not fit the data better than the constrained models (i.e., χ^2 ranging from 4.36 to 13.82, all ps > 0.05), except for conformity to drinking and driving (χ^2 = 18.53, $p = .018$). These preliminary tests indicate that, on the whole, the data were invariant across gender and sport type. As such, we report the constrained models for each criterion variable. Pertaining to differences in social identity, female participants reported lower social identification scores relative to males ($t =$ 2.80, $p = .006$, $d = .30$, $M_{male} = 5.91$, $M_{female} = 5.65$), and there were no significant differences between sport types ($F(2,376) = 1.88$, $p = 0.153$).

The means, standard deviations, and bivariate correlations of the predictor variables, control variables, and conformity to each scenario are reported in Table 1. Correlations among conformity variables ranged from .31 (i.e., marijuana use and PED use scenarios) to −.13 (i.e., binge drinking and volunteering scenarios). Adequate internal consistency was evident for both the social identity ($a = .89$) and self-esteem measures ($a = .77$) and self-esteem was positively associated with social identification ($r = .20$, $p < .001$, $d = .31$).

It is also of descriptive value to explore how athletes responded to conformity scenarios and the extent that participants shifted their responses over time. Table 2 provides descriptive statistics of the nine conformity scenarios, including a breakdown of pre- and post-manipulation mean scores. Paired samples t-tests revealed that the mean scores for all nine scenarios increased significantly following the MPR-paradigm. This indicates that exposure to ostensibly high teammate responses significantly swayed the sample's post-manipulation assessments. From a categorical perspective, across the six risky scenarios, athletes conformed least to PED use (12% conformity, 85% independence, 2% anticonformity) and most to hazing incoming teammates (30% conformity, 67% independence, 3% anticonformity). In some cases, conformity was constrained when participants were at the

maximum response at baseline (e.g., 49 participants reported the maximum response for concealing a concussion on the baseline response, making it impossible to conform).

Multilevel Models

Overall models.—Recall that we expected social identity – at the individual- and group-level – to predict intrateam conformity, over-and-above the relative influence of baseline scores and key control variables. The assumptions for multilevel analyses of independence and variance of the Level 1 and 2 residuals were met; however, there was evidence of minor deviation from normality (i.e., social identity and self-esteem were negatively skewed, and conformity was positively skewed).[1] To determine the extent of team-level variance in conformity, we partitioned the variance into within-team and between-team variance in a null model that controlled for participants' pre-manipulation responses. The resulting ICC values (see Table 3) ranged from .00 to .07, meaning that, at most, only 7% of the variability in conformity can be attributed to team-level variability. Although this indicates that conformity is primarily explained at the individual level, it continues to be important to account for nested data (Aarts et al., 2014). To illustrate the extent to which including control variables and social identity accounted for team-level variance, Table 3 also provides ICC values drawn from final models. As final model ICC's were reduced compared to the null model in most cases, predictor variables accounted for a small amount of between-group variance.

Control variables.—Pre-manipulation scores, gender, tenure, and self-esteem were accounted for in all models and it is prudent to address significant findings related to these variables (see Table 3). As expected, pre-manipulation scores were statistically significant predictors for all scenarios. The negative coefficients across all analyses indicate that participants with lower pre-manipulation scores were more likely to conform. In contrast to men, women were significantly less willing to conform to drinking and driving, and significantly more willing to conform to volunteering. The negative coefficients for all risky behaviors and positive coefficients for all prosocial behaviors indicate that females were less willing than males to conform to risky behaviors, and more willing to conform to prosocial behaviors. Athletes who had longer tenure were more willing to conform to drinking and driving behaviors. There were no other significant associations between conformity and length of tenure or self-esteem.

Social identity.—Perhaps most central to the purpose of this study, a significant link was revealed between social identity and intrateam conformity (see Table 3). The effect of social identity was evident at either the individual- or group-level across scenarios, but rarely at both levels. At the individual-level, athletes who reported being relatively higher in social identity than their teammates were more willing to conform to risky behaviors involving binge drinking ($b = .19$, $p < .001$), marijuana use ($b = .10$, $p = .021$), drinking and driving ($b = .08$, $p = .043$), and hazing ($b = .20$, $p = .003$). At the group-level, athletes who were on teams with higher levels of social identity were more willing to conform to concealing a

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[1]Although these levels of skewness are common, and our sample size was large enough to reduce the impact of skewness, we conducted all analyses with and without transformations. There were no discernable differences in both forms of analyses and thus we retained and reported untransformed models for ease of interpretation (e.g., Bruner, Eys, Evans, & Wilson, 2015).

concussion to remain in-play ($b = .34$, $p = .032$). The model featuring drinking and driving scenarios was the only model revealing effects at both the individual- and group-level: Although *individuals* who were higher in social identity relative to their teammates were at risk of conforming to drinking and driving ($b = .08$, $p = .043$), athletes who were members of *teams* that scored higher on social identity were *less* willing to conform ($b = -.25$, $p = .048$).

Social identity also predicted intrateam conformity to prosocial behaviors. At the individual-level, social identity was positively associated with conforming to volunteering time for a charitable organization ($b = .10$, $p = .006$) as well as helping a stranger at the expense of missing a meeting ($b = .09$, $p = .031$). At the group-level, teams comprised of strongly identifying athletes predicted athletes' conformity to volunteering behavior ($b = .33$, $p = .019$).

Discussion

Group members who believe that they differ from typical beliefs or behaviors of their group find themselves feeling pressure to reduce the dissonance of such a situation. Building from an understanding that aligning one's behavior with that of the group maintains a positive self-concept (Nail et al., 2000), the notion that those with strong intragroup social identities are most likely to conform is supported by theorists from the social identity approach (e.g., Tajfel, 1981) and from work involving conformity (e.g., Fishbach & Tu, 2016). The purpose for the current research was to test the hypothesis that athletes who more strongly identify with their team are more at risk of conforming to teammates' behaviors. Through using a MPR-paradigm to directly assess conformity, we captured athletes altering their anticipated behavior in response to information about teammates' behavior. Notably, our results supported our hypotheses by revealing that individuals' strength of social identity accounted for systematic variance in conformity to teammate behavior. Social identity positively predicted conformity to most forms of risky behavior, as well as prosocial acts of volunteering and helping a stranger. Social identity was also influential at the group-level, whereby team averages of social identity positively predicted conformity to concealing a concussion but negatively predicted conformity to drinking and driving. Key contributions from this study include the MPR-paradigm used to document shifts in how athletes would behave in response to scenarios, alongside substantive evidence regarding how social identities motivate conformity as an individual-level and group-level process. Specifically, this research demonstrated how normative teammate behavior represents a substantial social influence within teams and, furthermore, showed how this influence was explained, in part, by social identification processes.

Given the design of this study, the degree of variability within and across teams is important for understanding key implications. In an initial step, we specified unconditional null models to calculate how much variance in conformity took place at the individual- and group-levels. Depending on the perspective adopted, this variability in team responses may seem relatively high or low. On one hand, existing sport group dynamics literature reports relatively higher ICCs when constructs like social identity or interdependence within groups is measured (e.g., Bruner et al., 2015) – making conformity seem like a primarily individual level effect.

On the other hand, we note that our study focused on how individuals responded to the paradigm and factored out the ways team membership may have already influenced risky behaviors (i.e., baseline behavior in step 1). By accounting for baseline values and focusing on the process of conformity as the dependent variable, the fact that there was any team-level variability in conformity is notable.

Using the social identity approach to situate our findings, we found that athletes whose sense of self-concept was more closely tied to sport team membership held beliefs that were more readily shaped by teammate influence (Rees et al., 2015). That is, when shown bogus normative behaviors of teammates, athletes with strong social identities altered their anticipated behavior to fit what they believed to be stereotypical behaviors of the group (Hogg, 2016). These findings, that social identity is positively associated with conformity, align with the two primary motives for conformity: The drive for social approval, and the desire to behave 'correctly' (i.e., normative and informational influence, respectively; Deutsch & Gerard, 1955). Although identifying strongly with one's team can have psychological and developmental benefits (e.g., Bruner, Balish, et al., 2017), these findings reveal how an athlete who strongly identifies with his or her team may feel pressure to conform to risky teammate behavior.

In addition to risky behaviors, the finding that social identity also positively predicts conformity to teammates' prosocial behaviors further advances understanding of how social identity motives underpin teammate influence across an array of outcomes. Athletes with strong social identities were more willing to conform to prosocial behaviors, which suggests that it is possible to leverage the behavioral influence of social identity to promote desirable behaviors. By revealing how athletes' responses were 'pulled' in both prosocial and risky directions by teammate responses, it becomes clear that the influence of social identity might be derived through the strength of identification, alongside the *content* of those identities (Kim & Wiesenfeld, 2017). That is, preexisting standards (i.e., norms) or even values that teams identify 'around' likely determine how social identities influence behavior (e.g., valuing self-sacrifice, such as playing through concussions for the sake of the team). Alongside the overtly prosocial behaviors, our findings also indicated that strong team-level identification *negatively* predicted conformity to drinking and driving. While not investigated directly, there appears to be value in considering the extent that teams unite around an identity of virtuous and 'healthy' behavior, while other teams may indeed take pride in a more impish identity (e.g., frequent partying). For better or worse, it seems that social identity strength amplifies normative influence.

In addition to social identity, we explored if participant gender, tenure, or global self-esteem predict intrateam conformity. Despite theoretical support for an association (e.g., Cialdini & Goldstein, 2004), we found no relation between self-esteem and conformity. We speculate that self-esteem may have had a limited impact on conformity in this population due to range restriction, because NCAA athletes tend to have elevated levels of self-esteem compared to typical college students (Armstrong & Oomen-Early, 2009). Nevertheless, this null association supports the theoretical proposition that conformity may be more driven by how an athlete feels about his or her group than how an athlete feels about his/herself (Cialdini & Goldstein, 2004).

Along the same lines, although recent work on socialization processes in sport teams has indicated that newcomers may be particularly malleable to group norms (e.g., Benson & Eys, 2017), our findings did not support this expectation. In one case, we found the opposing result: Length of tenure *positively* predicted conformity to drinking and driving. We acknowledge, though, that our findings do not discount the possibility that newcomers are more impressionable. Whereas we tested a linear relationship between conformity and tenure over a number of *years,* conformity may only be notable at the beginning of an athletes' initial season as they become oriented to team norms. Lastly, our findings provide support for existing literature that men were more likely than women to conform to risky behaviors, while women were more likely than men to conform to prosocial behaviors (e.g., Brechwald & Prinstein, 2011).

In addition to these findings related to the goals of this study, an unexpected pattern in results was that we were able to explain more variance in sport-specific behaviors of concealing a concussion and hazing incoming teammates than we were in the more general risky behaviors (e.g., drinking). Although the majority of this variance is explained in the first step of the models by baseline scores, it is possible that teammates' sport-specific behaviors are a more relevant and salient source for appropriate behavior. Perhaps future studies could unpack athlete conformity by focusing exclusively on sport-specific behavioral issues (e.g., cheating).

Implementing a Conformity Paradigm

As we used a novel MPR-paradigm to assess teammate influence in intercollegiate sport, it is prudent to consider the goals of the methodology and its application in the future. Notably, although previous research has provided indication that teammates' behaviors and attitudes predict those of the individual (e.g., Hummer et al., 2009), conformity entails a more precise set of social processes. Studying conformity requires approaches that step beyond cross-sectional survey designs to examine how individuals receive and respond to normative information (Nail et al., 2000). This makes it necessary to consider individuals' beliefs and behaviors across time and to measure or shape the information provided to them in the interim. Considering that we observed conformity to risky behaviors in up to 30% of the sample, the manipulation protocol used in this study provided an opportunity to predict intrateam conformity: The first to apply this MPR-paradigm within sport teams. Whereas recent work has evinced a correspondence between personal behaviors and teammate behaviors among strong identifiers (e.g., Bruner, Boardley, et al., 2017), a key advantage of the MPR-paradigm used in the current study is that it provides insight into a critical directionality issue. That is, by manipulating information about teammate behavior, we essentially rule out the possibility that our results are due to athletes' personal behaviors driving perceptions of the group environment (i.e., projection) rather than the group environment shaping personal behaviors.

Using the current MPR-paradigm as a foundation, there is wide-ranging potential to adapt these methods to (a) demonstrate different types of conformity, or (b) focus on a clearly defined range of behavior. First, we operationalized conformity as the difference between pre- and post-manipulation responses but did not explore the degree that participants

internalized the responses. Thus, there is value in designing paradigms that reveal differing types of conformity (see Nail et al., 2000). Using an example of studying whether athletes' conformity represents conversion or mere compliance (i.e., publicly accepting a norm without internalizing or acting upon it), it is useful to consider the differences in athletes' post-manipulation responses when provided in a private manner or in a public manner where they believe teammates will share responses. Notably, participants provided private responses – alleviating the concern of mere public-conformity. Second, although measuring *anticipated* behavioral responses aligned with our goal of studying mechanisms of peer influence, future work would benefit from testing the scenarios' generalizability and links to student-athlete behavior. Even though efforts were made to enhance the realism of this paradigm (e.g., conducted focus groups, pilot tested the paradigm, conducted within team environments), the dependent variable of conformity is restricted to participants' behavioral intentions towards hypothetical scenarios, which may involve limited ecological validity in that these intentions may not accurately reflect real-world behavior. Although the predictive ability of intentions is often modest and influenced by many factors, there is a positive association between intentions and behavior (Sheeran & Conner, 2017), and there is evidence that performance on similar hypothetical tasks can predict behavior. Specifically, Prinstein and colleagues (2011) demonstrated that even small differences in individuals' propensity to conform during a manipulation paradigm predicted susceptibility to peer influence measured by actual behavior at later time points. A similar limitation is that the current study primarily focused on exploring peer influence as it relates to health-risk behaviors, though we included three prosocial scenarios to provide a broader examination of how the paradigm would translate across various types of behavior. Further investigations of conformity should explore a range of behavior (i.e., conforming to high/low prosocial behavior; conforming to high/low risky behavior).

Two specific shifts to the paradigm may also provide opportunities to assess behavior directly. Researchers could manipulate norms for risky behaviors in less-risky directions (e.g., manipulating endorsement of substance use behavior downward) and assess behavior at a lagged time point to compare to a control condition that was shown non-manipulated team responses. Future work could also implement additional conformity components that involve observable behaviors during the study session. For example, asking participants during the time 1 survey whether they would be willing to donate a portion of their compensation (e.g., gift card) to a charity, displaying that a high percentage of teammates were willing to donate, then observing how many participants actually donate after seeing that teammates were allegedly doing so.

Although efforts were made to maximize the extent that the MPR-paradigm was believable through pilot tests and focus groups with NCAA athletes, an additional aspect of the current work that could be further developed is the approach to identify suspicion with the study protocol (i.e., manipulation check). Studies that entail deception rely on the assumption that participants are not able to surmise the deceit and, as such, researchers must confidently identify participants who were aware of the deception (e.g., Blackhart, Brown, Clark, Pierce, & Shell, 2012). Although there are alternatives to the open-ended item we used, even the most sophisticated manipulation check strategies are unable to identify all suspicious participants (Blackhart et al., 2012). Nevertheless, future work may strive to not only use

manipulation checks to identify suspicious participants, but also to use more fine-grained measures reflecting degree that participants believed in the manipulation. In this case, degree of suspicion could be measured and integrated into models to explore the extent that suspicion was associated with conformity, or moderated key study findings.

Limitations and Future Directions

The nature of the MPR-paradigm used in this study also looms large when considering the strength and generalizability of our findings. The first point of discussion relates to limitations in how many individuals conformed and, in turn, the limited amount of variance in conformity explained by social identity. Because conformity is more challenging to predict than self-reported behavior (Prinstein et al., 2011), it is understandable that the variance accounted for by social identity was low (i.e., $R^2 < .06$ in all cases). The relatively small amount of variance explained may also be because pre-manipulation responses were factored-out and because the number of participants who conformed to any risky behavior was at or below 30%. Although variance in conformity was explained by social identity at both the individual- and team-levels, future work is required to further tease out the distinction between social identity of an individual athlete from a team full of strong-identifiers. Additionally, the relatively small effect sizes across our models is likely a reflection of predicting responses to a conformity paradigm in which the majority of participants did not conform at all (i.e., scored as a 0). Effect sizes and variance explained could increase in future studies by advancing the MPR-paradigm itself, such as providing participants with tailored normative feedback.

Although we controlled for participants' baseline scores, pressures to conform may be increased in future work by providing each athlete with tailored ostensible data (i.e., derive displayed values from actual reported behavior). For example, similar paradigms have calculated participants' mean baseline scores and used ostensible feedback data that were one standard deviation above that mean. Further, we note that a limitation to the current design is that the fabricated data that were shown to athletes were the same for each team, regardless of sport type or gender. Future work could improve the MPR-paradigm by providing tailored responses that consider the teams' true responses as a baseline starting point. As a final point of consideration, we offered participants $10 gift cards for their participation, which may have led to biased responses in the form of demand characteristics (e.g., Nichols & Maner, 2008). This concern, however, is partly allayed by our inclusion of the deception check procedure, such that the remuneration would only impact participants' responses if they had been able to surmise the purpose of the paradigm.

Practical Implications and Conclusion

A theoretically informed understanding of intrateam conformity provides practical implications for prevention-based work aimed at intercollegiate athlete populations (e.g., Labrie, Hummer, Huchting, & Neighbors, 2009). In the current study, we focused on intrateam conformity as a pathway that leads athletes to engage in risky behavior, such that reducing the pressures to conform may plausibly reduce engagement in risky behaviors. As such, our findings hold practical implications for the 'root cause' of risky behavior in that we can better create precision-based intervention strategies that map onto the etiological

underpinnings of intrateam conformity. Although the majority of participants did not conform, determining characteristics of athletes who are more susceptible to peer influence provides insight into how interventions can be targeted toward specific individuals. With the knowledge that strongly identifying athletes (and teams of athletes) are a risk factor for conformity, intervention efforts can work to create productive ways for team members to experience and demonstrate pride towards team membership, without the pressure to engage in risky behavior.

In conclusion, we implemented a MPR-paradigm to investigate athletes' willingness to conform to both risky and prosocial behaviors. This work provides insight into factors that may impact athletes' susceptibility to peer influence, and advances of the application of the social identity approach to sport groups by providing evidence that athletes who strongly identify with the team are more willing to conform to behaviors that are perceived to be prototypical of the group to which they belong (Rees et al., 2015). Specifically, our findings provide a framework to develop evidence-based translational research to foster productive and healthy group identities for athletes to unite around.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

References

Aarts E, Verhage M, Veenvliet J, Dolan C, & van der Sluis S (2014). A solution to dependency: Using multilevel analysis to accommodate nested data. Nature Neuroscience, 17, 491–496. [PubMed: 24671065]

Armstrong S, & Oomen-Early J (2009). Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus nonathletes. Journal of American College Health, 57, 521–526. [PubMed: 19254893]

Benson AJ, Bruner MW, & Eys M (2017). A social identity approach to understanding the conditions associated with antisocial behaviors among teammates in female teams. Sport, Exercise, and Performance Psychology, 6, 129–142.

Benson AJ, & Eys M (2017). Understanding the consequences of newcomer integration processes: The Sport Team Socialization Tactics Questionnaire. Journal of Sport and Exercise Psychology, 39, 13–28. [PubMed: 28033034]

Blackhart GC, Brown KE, Clark T, Pierce DL, & Shell K (2012). Assessing the adequacy of postexperimental inquiries in deception research and the factors that promote participant honesty. Behavior Research Methods, 44, 24–40. [PubMed: 21761263]

Brechwald WA, & Prinstein MJ (2011). Beyond homophily: A decade of advances in understanding peer influence processes. Journal of Research on Adolescence, 21, 166–179. [PubMed: 23730122]

Brisola-Santos MB, Gallinaro JG de M. e, Gil F., Sampaio-Junior B, Marin MCD., de Andrade AG., … Castaldelli-Maia JM (2016). Prevalence and correlates of cannabis use among athletes—A systematic review. American Journal on Addictions, 25, 518–528. [PubMed: 27629700]

Bruner MW, Balish SM, Forrest C, Brown S, Webber K, Gray E, … Shields CA (2017). Ties that bond: Youth sport as a vehicle for social identity and positive youth development. Research Quarterly for Exercise and Sport, 88, 209–214. [PubMed: 28362163]

Bruner MW, & Benson AJ (2018). Evaluating the psychometric properties of the Social Identity Questionnaire for Sport (SIQS). Psychology of Sport and Exercise, 35, 181–188.

Bruner MW, Boardley ID, Benson AJ, Wilson KS, Root Z, Turnnidge J, … Côté J (2017). Disentangling the relations between social identity and prosocial and antisocial behavior in competitive youth sport. Journal of Youth and Adolescence, 1–14.

Bruner MW, Eys M, Evans MB, & Wilson K (2015). Interdependence and social identity in youth sport teams. Journal of Applied Sport Psychology, 27, 351–358.

Buckman JF, Farris SG, & Yusko DA (2013). A national study of substance use behaviors among NCAA male athletes who use banned performance enhancing substances. Drug and Alcohol Dependence, 131, 50–55. [PubMed: 23688842]

Burnett S, Sebastian C, Cohen Kadosh K, & Blakemore SJ (2011). The social brain in adolescence: Evidence from functional magnetic resonance imaging and behavioural studies. Neuroscience and Biobehavioral Reviews, 35, 1654–1664. [PubMed: 21036192]

Cameron JE (2004). A three-factor model of social identity. Self and Identity, 3, 239–262.

Carron AV, & Eys MA (2012). Group dynamics in sport (4th ed). Morgantown, WV: Fitness Information Technology.

Chinn NR, & Porter P (2016). Concussion reporting behaviours of community college student-athletes and limits of transferring concussion knowledge during the stress of competition. BMJ Open Sport & Exercise Medicine, 2, e000118.

Cialdini RB, & Goldstein NJ (2004). Social influence: Compliance and conformity. Annual Review of Psychology, 55, 591–621.

Daniels E, & Leaper C (2006). A longitudinal investigation of sport participation, peer acceptance, and self-esteem among adolescent girls and boys. Sex Roles, 55, 875–880.

de los Reyes A, & Prinstein MJ (2004). Applying depression-distortion hypotheses to the assessment of peer victimization in adolescents. Journal of Clinical Child and Adolescent Psychology Psychology, 33, 325–335.

Deutsch M, & Gerard HB (1955). A study of normative and informational social influences upon individual judgment. The Journal of Abnormal and Social Psychology, 51, 629–636.

Egan KL, Erausquin JT, Milroy JJ, & Wyrick DL (2016). Synthetic cannabinoid use and descriptive norms among collegiate student-athletes. Journal of Psychoactive Drugs, 48, 166–172. [PubMed: 27224428]

Enders CK, & Tofighi D (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. Psychological Methods, 12, 121–138. [PubMed: 17563168]

Evans MB, Eys MA, & Bruner MW (2012). Seeing the "we" in "me" sports: The need to consider individual sport team environments. Canadian Psychology/Psychologie Canadienne, 53, 301–308.

Fishbach A, & Tu Y (2016). Pursuing goals with others. Social and Personality Psychology Compass, 10, 298–312.

Gaertner L, Sedikides C, Vevea JL, & Iuzzini J (2002). The "I," the "we," and the "when": A meta-analysis of motivational primacy in self-definition. Journal of Personality and Social Psychology, 83, 574–591. [PubMed: 12219855]

Gayles G, & Hu S (2009). The influence of student engagement and sport participation on college outcomes among division I student athletes. The Journal of Higher Education, 80, 315–333.

Grossbard J, Hummer J, LaBrie J, Pederson E, & Neighbors C (2009). Is substance use a team sport? Attraction to team, perceived norms, and alcohol and marijuana use among male and female intercollegiate athletes. Journal of Applied Sport Psychology, 21, 247–261.

Helms SW, Choukas-Bradley S, Widman L, Giletta M, Cohen GL, & Prinstein MJ (2014). Adolescents misperceive and are influenced by high-status peers' health risk, deviant, and adaptive behavior. Developmental Psychology, 50, 2697–2714. [PubMed: 25365121]

Hogg MA (2016). Social Identity Theory In McKeown S, Haji R, & Ferguson N (Eds.), Understanding Peace and Conflict Through Social Identity Theory: Contemporary Global Perspectives (pp. 3–17). New York, NY: Springer.

Hogg MA, Abrams D, & Brewer MB (2017). Social identity: The role of self in group processes and intergroup relations. Group Processes & Intergroup Relations, 20, 570–581.

Hummer JF, LaBrie JW, & Lac A (2009). The prognostic power of normative influences among NCAA student-athletes. Addictive Behaviors, 34, 573–580. [PubMed: 19406582]

Kim HY, & Wiesenfeld BM (2017). Who represents our group? The effects of prototype content on perceived status dispersion and social undermining. Personality and Social Psychology Bulletin, 43, 814–827. [PubMed: 28903666]

Kroshus E, Kubzansky LD, Goldman RE, & Austin SB (2015). Norms, athletic identity, and concussion symptom under-reporting among male collegiate ice hockey players: A prospective cohort study. Annals of Behavioral Medicine, 49, 95–103. [PubMed: 25236670]

Labrie JW, Hummer JF, Huchting KK, & Neighbors C (2009). A brief live interactive normative group intervention using wireless keypads to reduce drinking and alcohol consequences in college student athletes. Drug and Alcohol Review, 28, 40–47. [PubMed: 19320674]

Little RJA (1988). A test of missing completely at random for multivariate data with missing values a test of missing completely at random for multivariate data with missing values. Journal of the American Statistical Association, 83, 1198–1202.

MacDonald G, & Leary MR (2012). Individual differences in self-esteem In Leary MR & Tangney JP (Eds.), Handbook of Self and Identity (2nd ed, pp. 354–377). New York, NY: Guilford.

Nail PR, MacDonald G, & Levy D. a. (2000). Proposal of a four-dimensional model of social response. Psychological Bulletin, 126, 454–470. [PubMed: 10825785]

Neighbors C, LaBrie JW, Hummer JF, Lewis MA, Lee CM, Desai S, … Larimer ME (2010). Group identification as a moderator of the relationship between perceived social norms and alcohol consumption. Psychology of Addictive Behaviors, 24, 522–528. [PubMed: 20853938]

Nelson TF, & Wechsler H (2001). Alcohol and college athletes. Medicine and Science in Sports and Exercise, 33, 43–47. [PubMed: 11194110]

Nichols AL, & Maner JK (2008). The good-subject effect: Investigating participant demand characteristics. Journal of General Psychology, 135, 151–165. [PubMed: 18507315]

Nook EC, Ong DC, Morelli SA, Mitchell JP, & Zaki J (2016). Prosocial conformity. Personality and Social Psychology Bulletin, 42, 1–18.

Ntoumanis N, Ng JY, Barkoukis V, & Backhouse S (2014). Personal and psychosocial predictors of doping use in physical activity settings: A meta-analysis. Sports Medicine, 44, 1603–1624. [PubMed: 25138312]

Olthuis J, Zamboanga BL, Marten MP, & Ham LS (2011). Social influences, alcohol expectancies, and hazardous alcohol use among college athletes. Journal of Clinical Sport Psychology, 5, 24–43.

Pinheiro J, Bates D, DebRoy S, Sarkar D, Heisterkamp S, & Van Willigen B (2017). nlme: Linear and Nonlinear Mixed Effects Models. R Package 3rd Edn., 1–336.

Prinstein MJ, Brechwald WA, & Cohen GL (2011). Susceptibility to peer influence: Using a performance-based measure to identify adolescent males at heightened risk for deviant peer socialization. Developmental Psychology, 47, 1167–1172. [PubMed: 21463036]

Rees T, Haslam SA, Coffee P, & Lavallee D (2015). A social identity approach to sport psychology: Principles, practice, and prospects. Sports Medicine, 45, 1083–1096. [PubMed: 26092187]

Rosseel Y (2012). lavaan: An R Package for Structural Equation Modeling. Journal of Statistical Software, 48, 1–36.

Seitz CM, Wyrick DL, Rulison KL, Strack RW, & Fearnow-Kenney M (2014). The association between coach and teammate injunctive norm reference groups and college student-athlete substance use. Journal of Alcohol and Drug Education, 58, 7–26. [PubMed: 27041777]

Tajfel H (1981). Human groups and social categories: Studies in social psychology. Cambridge, UK: Cambridge University Press.

Taylor EA, Ward RM, & Hardin R (2017). Examination of drinking habits and motives of collegiate student-athletes. Journal of Applied Sport Management, 9, 56–77.

Teunissen HA, Kuntsche E, Scholte RHJ, Spijkerman R, Prinstein MJ, & Engels RCME (2016). Friends' drinking norms and male adolescents' alcohol consumption: The moderating role of performance-based peer influence susceptibility. Journal of Adolescence, 53, 45–54. [PubMed: 27622919]

Turrisi R, Mastroleo NR, Mallett KA, Larimer ME, & Kilmer JR (2007). Examination of the mediational influences of peer norms, environmental influences, and parent communications on heavy drinking in athletes and nonathletes. Psychology of Addictive Behaviors, 21, 453–461. [PubMed: 18072827]

Webber TA, Soder HE, Potts GF, Park JY, & Bornovalova MA (2017). Neural outcome processing of peer-influenced risk-taking behavior in late adolescence: Preliminary evidence for gene x

environment interactions. Experimental and Clinical Psychopharmacology, 25, 31–40. [PubMed: 28150970]

Zhou J, & Heim D (2014). Sports and spirits: A systematic qualitative review of emergent theories for student-athlete drinking. Alcohol and Alcoholism, 49, 604–617. [PubMed: 25249539]

Table 1.

Means, Standard Deviations, and Correlations for Conformity and Predictor Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Social Identity (raw score)	–													
2. Social Identity (group-mean)	.34**	–												
3. Gender (M = 0, F = 1)	−.14**	−.38**	–											
4. Tenure	.07	.05	−.14**	–										
5. Self-esteem	.20**	.08	−.19**	.16**	–									
6. Binge Drinking	.16**	.07	−.09†	−.04	.07	–								
7. Marijuana Use	.06	−.04	−.04	−.08	.04	.28**	–							
8. Drinking and Driving	.07	−.07	−.08	.09†	.06	.14**	.20**	–						
9. Concealing Concussion	.11*	.12*	−.02	−.08	.05	.16**	.19**	.14**	–					
10. PED Use	.04	.03	−.00	−.06	.05	.23**	.31**	.25**	.21**	–				
11. Hazing Teammates	.06	−.05	.12*	−.05	−.07	.20**	.18**	.11*	.18**	.16**	–			
12. Volunteering	.15**	.13*	.04	.06	.00	−.13*	−.12*	−.01	−.13*	−.02	.02	–		
13. Donating	.09†	.06	.02	−.05	.02	−.03	−.05	−.12*	.10†	−.10*	.05	.18**	–	
14. Helping	.07	.01	.02	.00	−.07	.13*	.06	.14**	.06	.13*	.07	.15**	.13*	–
M	5.73	5.73	–	1.91	5.45	0.30	0.26	0.21	0.31	0.14	0.61	0.36	0.33	0.39
SD	0.87	0.30	–	1.02	0.91	0.75	0.71	0.63	0.84	0.53	1.19	0.62	0.78	0.71

Note. Variables 6–14 represent the level of *conformity* for each scenario (post-manipulation score – pre-manipulation score). PED = performance enhancing drug. Cronbach's Alpha for Social Identity = .89, and Self-esteem = .77.

† $p < .10$,

* $p < .05$,

** $p < .01$.

Table 2.

Pre/Post-Manipulation t-Tests, and Percentages for Conformity Outcome Variables (N = 379)

Scenario	Pre-Manipulation Mean (SD)	Post-Manipulation Mean (SD)	Pre-Post Paired t-test	Conformed N (%)	Resisted N (%)	Anti-Conformed N (%)
Binge Drinking	3.50 (1.02)	3.80 (1.05)	$t = -7.69^*$	102 (27%)	261 (69%)	16 (4%)
Marijuana Use	2.32 (1.06)	2.59 (1.07)	$t = -7.15^*$	80 (21%)	289 (76%)	10 (3%)
Drinking and Driving	1.21 (.58)	1.42 (.78)	$t = -6.66^*$	66 (17%)	309 (82%)	4 (1%)
Concealing Concussion	3.06 (1.34)	3.37 (1.24)	$t = -7.26^*$	69 (19%)	301 (79%)	9 (2%)
PED Use	2.19 (.54)	2.33 (.69)	$t = -5.15^*$	47 (13%)	323 (85%)	9 (2%)
Hazing Teammates	2.44 (1.42)	3.05 (1.37)	$t = -9.94^*$	115 (30%)	252 (67%)	12 (3%)

Note:

*
$p < .001$

Table 3.

Hierarchical Mixed Effect Model Predicting Conformity, whereby Intercepts Varied Randomly by Team (k = 23).

	Conformity to Risky Behaviors						Conformity to Prosocial Behaviors		
	Binge Drink	Marijuana	Drink/Drive	Concussion	PED	Hazing	Volunteer	Donate	Helping
Fixed Effect	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Step 1	$R^2 = .11$	$R^2 = .10$	$R^2 = .03$	$R^2 = .18$	$R^2 = .02$	$R^2 = .20$	$R^2 = .12$	$R^2 = .12$	$R^2 = .19$
Intercept	1.18(.13)***	.77(.08)***	.44(.08)***	1.13(.10)***	.52(.11)***	1.55(.12)***	1.09(.11)***	.82(.08)***	1.49(.12)***
Time 1 Score	−.25(.04)***	−.22(.03)***	−.18(.06)***	−.27(.03)***	−.17(.04)***	−.39(.04)***	−.28(.04)***	−.22(.03)***	−.38(.04)***
Step 2	$R^2 = .01$	$R^2 = 0$	$R^2 = .02$	$R^2 = 0$	$R^2 = 0$	$R^2 = 0$	$R^2 = .01$	$R^2 = 0$	$R^2 = 0$
Gender	−.16(.09)†	−.06(.07)	−.18(.08)*	−.07(.10)	−.05(.06)	−.07(.16)	.17(.09)*	.05(.09)	.05(.08)
Tenure	−.01(.03)	−.05(.03)	.08(.03)*	−.05(.04)	−.02(.03)	.01(.05)	.01(.03)	−.06(.03)†	.00(.03)
Self-esteem	.03(.04)	.02(.04)	.02(.04)	−.02(.04)	.02(.03)	−.07(.06)	.04(.03)	.04(.04)	−.03(.04)
Step 3	$R^2 = .05$	$R^2 = .03$	$R^2 = .03$	$R^2 = .03$	$R^2 = .02$	$R^2 = .03$	$R^2 = .04$	$R^2 = .01$	$R^2 = .02$
Social Identity (*within team*)	.19(.04)***	.10(.04)*	.08(.03)*	.09(.04)†	.03(.03)	.20(.06)**	.10(.03)**	.06(.04)	.09(.04)*
Social Identity (*between team*)	.17(.15)	−.16(.13)	−.25(.12)*	.34(.15)*	.05(.11)	.10(.27)	.33(.13)*	.23(.16)	.08(.14)
Total R^2	$R^2 = .17$	$R^2 = .13$	$R^2 = .08$	$R^2 = .21$	$R^2 = .04$	$R^2 = .23$	$R^2 = .17$	$R^2 = .13$	$R^2 = .21$
Null Model ICC	.03	0	.03	.03	.01	.07	.05	.02	.03
Final Model ICC	.02	0	.01	.01	.01	.06	.03	.02	.02
−2*log likelihood	815.74	790.20	712.98	879.22	603.14	1120.06	663.74	850.54	744.30

Note: Gender coded 0 = male, 1 = female. PED = performance enhancing drug. Social identity (*within team*) was group mean centered. Null Model ICC = Intraclass Correlation Coefficients for the unconditional model without predictor variables entered. Final Model ICC = Intraclass Correlation Coefficients after adding the fixed effects predictor variables.

† $p < .10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$.