

Validation of the Conduct in Sport toward Opponents Scale (CSOS)

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Yukhymenko-Lescroart (2015, Is winning the only thing? Development of the Conduct in Sport toward Opponent Scale (CSOS). Athletic Insight - The Online Journal of Sport Psychology) created and provided initial content validity and reliability for the Conduct in Sport toward Opponent Scale (CSOS), which captures the frequency of sportsmanship, gamesmanship, and instrumental aggression that athletes exhibit toward opponents. This systematic replication of the Yukhymenko-Lescroart (2015) study provided additional evidence of construct and content validity and reliability for the CSOS with a targeted group of 482 competitive student-athletes participating in varsity team sports in Division I schools. Construct validity was established by confirming a three-factor structure of the CSOS and examining shared variance between the factors representing the CSOS subscales. Criterion validity was evident based on significant paths between task- and ego-orientation goals and sportsmanship, gamesmanship, and instrumental aggression. The CSOS subscales showed an adequate internal consistency. The scale is suggested as a reasonable measure of self-reported conduct of varsity student-athletes participating in Division I team sports.

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Citius, Altius, Fortius, which is Latin for “Faster, Higher, Stronger,” is the formal Olympic motto proposed by the founder of the modern Olympics, Pierre de Coubertin, in 1894. This hendiatrix (or “one through three,” in which three words are used to express one idea) is used to emphasize the ultimate pursuit of all athletes in a competition. According to Coubertin (1895), “These three words represent a programme of moral beauty. The aesthetics of sport are intangible” (p. 89, as quoted in Borland & Cho, 2014, p. 288). Coubertin used the three words to emphasize a set of most essential Olympic values, such as excellence, respect for others, self-control, adherence to rules, fair balance, pursuit of excellence, joy in effort, and balance between mind and body.

But how often do athletes uphold these moral values? In sport situations when there is an opportunity to either unfairly score a point for one’s team or follow moral standards but lose, why do some athletes choose to *lose with grace over winning at all cost*? Bandura’s (1991) social cognitive theory of moral thought and action postulates that human morality involves both personal and collective standards. In athletic situations, personal and collective standards are often dictated by the roles sports play in people’s lives. For example, individuals who are engaged in sports exclusively for entertainment are likely to follow a code of ethics to ensure that sporting activity remains pleasurable for all participants (Wertz, 1991). This code of ethics is closely aligned with the idea of sportsmanship. The person who truly employs sportsmanship “plays for the love of the game, the sense of mastery, the sheer *joie de vivre* which he feels in playing a stroke well, and not for the mere honour, or still less the profit, of a victory” (as cited in Wertz, 1991, p. 101). But carrying over this view can be problematic for the field of professional or collegiate varsity athletics since winning is one of the primary and essential goals for these athletes, whereas sportsmanship does not focus on victory. As a result, there is a possibility that athletes will engage in the conduct of poor sportspersonship, such as gamesmanship and instrumental aggression. Compared to Division II and III, schools in the highest level of collegiate varsity athletics, Division I, have the major collegiate athletic powers, higher budgets, more elaborate athletic facilities, more athletics scholarships, and draw the most media attention. Student-athletes in Division I schools are likely to face the high expectations and pressures to win from coaches, administrators, and teammates, potentially forcing them to employ dubious methods of winning. However, little is known about how student-athletes conduct themselves during competitive games.

Recently, Yukhymenko-Lescroart (2015) created a self-reported measure to capture the frequency of ethical and unethical conduct that athletes exhibit toward opponents during competitive games. To develop the instrument, a number of steps were performed as follows: (a) a comprehensive literature review of relevant theory and research of sport conduct of athletes was conducted; (b) items were generated based on the literature review, and con-

tent validation was established by using the expert panel; and (c) a pilot study was conducted with a sample of undergraduate students participating in sports to assess initial reliability and validity of the scale. The Conduct in Sport toward Opponents Scale (CSOS) contains 18 items and three subscales of ethical and unethical conduct, particularly, sportsmanship, gamesmanship, and instrumental aggression. This was the first study that conceptualized unethical conduct by differentiating the physical (instrumental aggression) and psychological (gamesmanship) aspects of unethical conduct in one scale, which provided evidence that the two subscales are related but distinct from each other.

An instrument validation is an ongoing process (DeVillis, 2003). Yukhymenko-Lescroart (2015) provided initial content validity and reliability for the CSOS with a sample of undergraduate students playing sports at various levels. This sample was disproportionately skewed to females and included 61.3% females. Before an instrument can be used with a specific group of people, it should be validated for use with that group. Therefore, this study aimed at providing further validity of the CSOS with a more targeted group of competitive student-athletes participating in varsity athletics at Division I schools.

The first purpose of this study was to provide construct validity of the CSOS for use with varsity student-athletes participating in team sports. Construct validity is defined as “the extent to which items designed to measure a particular factor (i.e., latent construct) actually do so” (Byrne, 2010, pp. 97-98). Construct validity assesses whether scores are an adequate reflection of the underlying hypothesized constructs of a measure and consists of two elements – convergent validity and discriminant validity (Straub, Boudreau, & Gefen, 2004). Convergent validity is shown when each measurement item correlates strongly with its hypothesized theoretical construct; whereas discriminant validity is shown when each measurement item correlates weakly or not significantly with all other constructs except for the theoretically relevant one. To determine whether the construct validity of the CSOS is established, a confirmatory factor analysis (CFA) was conducted. A CFA is appropriate when there is a theoretical expectation of the structure of the scale. Yukhymenko-Lescroart (2015) showed that the CSOS consists of three factors represented by 18 items, providing a conceptual rationale for performing a CFA. Convergent validity is established if each of the measurement items loads significantly on its latent construct. Discriminant validity is established when the correlations among factors presumed to measure different constructs are not too high. Discriminant validity was examined among the dimensions of the CSOS representing unethical conduct in sport (gamesmanship and instrumental aggression).

The second purpose of this study was to establish criterion validity of the CSOS. Criterion validity assesses whether items designed to measure a particular factor are related to other, theoretically relevant, measures. Criterion validity was assessed by examining the

associations between the achievement goal orientation (Nicholls, 1989) of athletes and their conduct as measured by the CSOS. According to Nicholls (1989), there are two competing goals: task- and ego-involved goals. Athletes with task goals define success using self-referenced criteria and are concerned with mastering the sport skills; whereas athletes with ego goals use normatively-references criteria and define success by comparing individual performance to that of others. Past research has provided empirical support of the relationships between task- and ego-goal orientation of athletes and their self-reported behaviors (Kavussanu, 2006; Kavussanu & Boardley, 2009; Sage, Kavussanu, & Duda, 2006), reporting positive correlation between task-orientation and prosocial behaviors, negative correlation between task-orientation and antisocial behaviors, and positive correlations between ego-orientation and antisocial behaviors. In the present study, criterion validity is established if task orientation is positively associated with sportsmanship (hypothesis 1a), and negatively associated with gamesmanship (hypothesis 2a) and instrumental aggression (hypothesis 3a); and ego orientation is negatively associated with sportsmanship (hypothesis 1b), and positively associated with gamesmanship (hypothesis 2b) and instrumental aggression (hypothesis 3b).

Methods

Participants

Participants were a convenience sample of 482 student-athletes (45.4% males) participating in varsity team sports at four NCAA Division I institutions. The team sports were as follows: baseball ($n = 67$), basketball ($n = 74$), field hockey ($n = 17$), football ($n = 114$), lacrosse ($n = 27$), soccer ($n = 124$), softball ($n = 28$) and volleyball ($n = 31$). There were 157 freshmen (33.0%), 128 sophomores (26.9%), 122 juniors (25.6%), and 69 seniors (14.5%). The majority of student-athletes attended school on athletics scholarship, particularly, 45.7% of student-athletes received a full athletics scholarship (tuition and fees, room, board, and required course-related books) and 33.3% received a partial athletics scholarship financial aid. Due to IRB procedures, responses to the survey were recorded and analyzed for only those student-athletes who were 18 years or older. The response rate was 59.3%.

Measures

Conduct in sport. Students completed the CSOS (Yukhymenko-Lescroart, 2015), which consisted of six-item sportsmanship, seven-item gamesmanship, and five-item instrumental aggression subscales. Students were asked to indicate the frequency of conduct during the last year on a response scale ranging from 1 (*never*) to 5 (*almost daily*).

Achievement goal orientation. Students also completed the Task and Ego-Orientation in Sport Questionnaire (TEOSQ; Duda, 1989), which consisted of seven-item task orientation (e.g., "I learn a new skill and it makes me want to practice more") and six-item ego orientation (e.g., "The others cannot do as well as me") subscales to assess achievement goal orientations in sports. The response scale ranged from 1 (*not at all true of me*) to 7 (*very true of me*). The TEOSQ was previously used with intercollegiate athletes and collegiate undergraduate students (Chi & Duda, 1995).

Procedure

After obtaining approval from the IRBs and directors of athletic departments at each institution, packages with paper-based anonymous surveys were mailed to the athletic departments. The packages included a specific number of surveys, arranged in envelopes by sport teams according to the number of student-athletes in each team. The coaching staff members were asked not to be present during survey completion. Students at each institution had a chance to enter a raffle to win a gift card.

Data Analysis

A confirmatory factor analysis (CFA) was used to address the first purpose of the study, construct validity. To do so, a three-factor structure was hypothesized and the fit of the model to the data was tested in CFA using MPLUS 6.12 software (Muthen & Muthen, 1998-2010). Because a chi-square test is oversensitive for sample size, multivariate normality, and minor model misspecifications, several additional absolute and incremental indices were used to assess whether the hypothesized model showed an acceptable fit to the data. Absolute indices included standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA), and incremental fit indices included Tucker Lewis index (TLI) and comparative fit index (CFI). SRMR of less than .08, RMSEA of less than .08, and TLI and CFI of greater than .90 indicate an acceptable fit, whereas RMSEA of less than .06, and TLI and CFI of greater than .95 indicate a good fit of the model to the data (Hu & Bentler, 1999). Once the factor structure was confirmed, factor loadings were examined to assess the convergent validity; and variance shared by gamesmanship and instrumental aggression was examined to assess discriminant validity of the subscales. The discriminant validity is established if the subscales do not share a considerable amount of variance as indicated by the confidence interval around the correlation not containing a value of 1.0 (see Anderson & Gerbing, 1988). Structural equation modeling was used to address the second purpose of the study, criterion validity. The model included two latent orientation goals with the respective observed items, which were specified as predictors, and three latent variables

of athletes' conduct with the respective observed items, which were specified as outcomes. Then, significant paths between task- and ego-orientation goals and sportsmanship, gamesmanship, and instrumental aggression were examined.

Results

Construct Validity

Missing data ranged from 0 to 3.5% (3.1%) and were within the recommended guideline of less than 5.0% (Fichman & Cummings, 2003). The CFA was performed on the 18 items to test whether the three-factor model structure fits the data with this sample. Based on Mardia's (1970) measures for multivariate skewness (86.7, $p < .001$) and kurtosis (515.4, $p < .001$), the Maximum Likelihood estimation with robust standard errors was used. Robust estimation allows for more accurate test results when the data are not normally distributed and include missing values (Muthen & Muthen, 1998-2010; Yuen & Bentler, 2000). The model showed an acceptable fit to the data: $\chi^2(132, N = 482) = 383.00, p < .001$, SRMR = .063, RMSEA = .063, 90% CI [.056; .070], TLI = .94, and CFI = .93. Although the chi-square test was significant, the RMSEA and the SRMR were less than .08, and TLI and CFI were close to .95.

Table 1 shows standardized factor loadings and standard errors for the 18 items. All item loadings were significant and substantial. Specifically, standardized loadings ranged between .50 - .76 for sportsmanship, .58 - .84 for gamesmanship, and .94 - .96 for instrumental aggression; thus, providing evidence of convergent validity. The latent correlation among the factors representing the sportsmanship and gamesmanship subscales was $r(480) = .00, 95\% \text{ CI } [-.12, .12], p = .984$; sportsmanship and instrumental aggression $r(480) = .07, 95\% \text{ CI } [-.03, .17], p = .152$, and gamesmanship and instrumental aggression $r(480) = .63, 95\% \text{ CI } [.56, .69], p < .001$. The discriminant validity was examined by evaluating shared variance between the factors representing gamesmanship and instrumental aggression subscales. As indicated above, the upper boundary of the confidence intervals around the correlations was below 1.0. These results indicated that the two subscales are distinct from each other because they do not share a considerable amount of variance, providing evidence for discriminant validity.

Criterion Validity

The measurement model included five latent factors (two factors representing task- and ego-orientation goals and three factors representing athletic conducts) and the corresponding observed items. The structural model specified the two latent goal orientations as

predictor variables, and the three latent athletic conducts as outcome variables. The model showed an acceptable fit to the data: $\chi^2(424, N = 482) = 954.75, p < .001$, SRMR = .057, RMSEA = .051, 90% CI [.047; .055], TLI = .93, and CFI = .92. The model explained a medium amount of variance in sportsmanship (11.3%) and a small amount of variance in gamesmanship (5.3%) and instrumental aggression (4.5%). Standardized parameter estimates showed several significant paths between task- and ego-orientation goals and sportsmanship, gamesmanship, and instrumental aggression. First, the path between task orientation and sportsmanship was positive ($\beta = .31, t(424) = 5.29, p < .001$) and the path between ego orientation and sportsmanship was negative ($\beta = -.28, t(424) = -4.53, p < .001$), providing support to hypothesis 1a and 1b. Athletes who define success using self-referenced standards reported more frequent engagement in sportsmanship; whereas athletes who define success by comparing individual performance to that of others reported less frequent engagement in sportsmanship. Second, results were consistent, in part, with expectations for gamesmanship. Only the path between ego-orientation goal and gamesmanship emerged as statistically significant ($\beta = .24, t(424) = 4.37, p < .001$), supporting hypothesis 2b but not 2a. That is, an athlete who compares one's performance to others is more likely to engage in gamesmanship. Finally, the path between task orientation and instrumental aggression was negative ($\beta = -.16, t(424) = -2.96, p = .003$) and the path between ego orientation and instrumental aggression was positive ($\beta = .21, t(424) = 4.34, p < .001$), providing support to hypotheses 3a and 3b. That is, athletes who are more concerned with mastering the skills and less concerned with scoring more points, as compared to their peers, reported less frequent engagement in instrumental aggression.

Descriptive Statistics

Table 2 presents means, standard deviations, Cronbach's alphas, and correlations for sportsmanship, gamesmanship, instrumental aggression, and task- and ego-orientation. On average, students engaged in sportsmanship behaviors at least once a month, in gamesmanship at least once or twice a year, and in instrumental aggression less than once or twice a year.

Table 1

Standardized Factor Loadings and Standard Errors for the Final 18-Item Three-Factor Model, N = 550

	Items	Estimate	SE
SP	I congratulated an opponent even when I lost	.65	.04
SP	I enjoyed competing even when I was losing	.58	.05
SP	I stopped playing when an opponent got injured (not my fault)	.50	.05
SP	I was friendly to my opponent after a loss	.76	.04
SP	I was honest during the game even though it disadvantaged my team	.67	.04
SP	Win or lose, I respected an opponent during and after the game	.65	.04
GM	I considered committing a foul when the referee could not see it	.58	.04
GM	I distracted an opponent on purpose to gain advantage over them	.74	.03
GM	I purposefully tried to upset an opponent	.78	.03
GM	I created a foul situation to gain advantage over an opponent	.74	.03
GM	I used physical taunting (e.g., making faces or showing obscene gestures) to make an opponent commit a mistake	.84	.02
GM	I tried to psyche out an opponent	.74	.03
GM	I was hostile to an opponent	.80	.02
IA	I purposefully injured an opponent to win	.95	.01
IA	I harmed an opponent to take them out of the game	.94	.01
IA	I deliberately tried to injure an opponent wanting to win	.96	.01
IA	I intentionally harmed an opponent to take out the opposition	.96	.01
IA	I intended to harm an opponent to win	.94	.02

Note. SP = Sportsmanship; GM = Gamesmanship; IA = Instrumental Aggression; SE = Standard Error.

Table 2

Descriptive Statistics and Cronbach's Alphas for the Measured Variables, N=482

	Range	<i>M</i>	<i>SD</i>	α
1. Sportspersonship	1-5	3.34	0.92	.80
2. Gamesmanship	1-5	2.51	1.10	.90
3. Instrumental Aggression	1-5	1.57	1.09	.98
6. Task Orientation	1-7	5.87	0.86	.87
7. Ego Orientation	1-7	4.49	1.35	.87

Discussion

Reliable and valid measures are needed to contribute to understanding whether high expectations and pressures to win from coaches, administrators, and teammates force student-athletes to employ dubious methods of winning. This study addressed this goal by providing evidence of validity and reliability for a quantitative self-report instrument of sportsmanship, gamesmanship, and instrumental aggression. Construct validity was demonstrated by confirming a factorial structure of the scale with a sample of varsity student-athletes participating in Division I team sports. Criterion validity was evident based on associations between task- and ego-orientation goals and sportsmanship, gamesmanship, instrumental aggression.

Based on the results of this study, the CSOS contains three dimensions, sportsmanship, gamesmanship, and instrumental aggression, which is consistent with previous research. Findings showed that the items of the CSOS were correlated with their respective dimensions. Additionally, findings confirmed that two subscales of unethical conduct, gamesmanship and instrumental aggression, are related constructs. This is evident by the positive correlations between the two, but they are also distinct from each other, as shown by their discriminant validity. In the CSOS, instrumental aggression was conceptualized by emphasizing the physical aspect of conduct; whereas, gamesmanship focused on the psychological aspect. This conceptualization is consistent with work by Husman and Silva (1984), who defined instrumental aggression as conduct that intends to harm opponents with the primary goal to win the game; and Clifford and Feezell (1997) and Lee, Whitehead, and Ntoumanis (2007), who defined gamesmanship as conduct that intends to use any dubious method to disrupt psychological balance of the opponents in order to win a game.

Findings in this study showed associations between task- and ego-orientation goals and sportsmanship, gamesmanship, instrumental aggression, which is consistent with previous research conducted by Kavussanu and her colleagues (Kavussanu, 2006; Kavussanu & Boardley, 2009; Sage et al., 2009). First, the results showed that, consistent with hypothesis 1a and 3a, task orientation was positively associated with sportsmanship and negatively associated with instrumental aggression. These findings are in part consistent with previous research, suggesting that the tendency to define individual success using self-referenced criteria is positively correlated with self-reported prosocial behaviors and negatively correlated with self-reported antisocial behaviors (Kavussanu, 2006; Kavussanu & Boardley, 2009). Yet, task orientation was not associated with gamesmanship, providing no support to hypothesis 2a. In Yukhymenko-Lescroart (2015), gamesmanship was defined as “dubious methods to gain advantages through questionable and unethical tactics, verbal comments, provocative and offensive behaviors” (p. 21). Athletes employing gamesmanship do so strategically: they deliberately disrupt the flow of the game, anger or upset an opponent, and violate the spirit of the game. It is possible that task-oriented athletes, who defined success based on own learning and mastery of sport skills, might or might not engage in “psychological games” during competitive plays. Second, the results showed that ego-orientation was negatively associated with sportsmanship, providing support to hypothesis 1b, and positively associated with gamesmanship and instrumental aggression, providing support to hypotheses 2b and 3b. These findings are consistent with prior research showing that the tendency to define success using normatively-references criteria is positively related to self-reported antisocial behaviors (Kavussanu, 2006; Kavussanu & Boardley, 2009; Sage et al., 2009).

Although this study contributed to understanding of varsity student-athletes conduct, there are several limitations and directions for future research that are important to note. First, this study used a self-reported instrument. Self-reported data are limited because they rarely can be verified. Because athletes were asked to indicate frequency of engagement in misconduct retrospectively, the biases of social desirability and selective memory were plausible. Future research should include an observational data for the purposes of cross-validation of responses to the scale. Second, this study employed cross-sectional design; thus, no causal relationships can be established between goal orientation and sport conduct. The results in this study reflect associations between orientation goals and self-reported conduct. Third, this study provided validity and reliability of the CSOS for use with varsity student-athletes participating in Division I team sports. Thus, this scale is valid and reliable for use with this specific group of athletes. Future research should continue examining and improving the validity of the CSOS. One research opportunity is to test measurement invariance across gender, athletic divisions, and different competitive levels. Division I schools are

the top-notch of collegiate athletics with the most power, money, and attention, and the most strict regulation by the National Collegiate Athletic Association. Division II and III schools provide slightly different environments for their student-athletes – theoretically, these schools are more likely to focus on academics than athletics. Unlike varsity sports, collegiate intramural and club sports are not regulated by the National Collegiate Athletic Association or a similar intercollegiate athletic association. Athletes participating in intramural and club athletics receive little financial aid from their schools. Nevertheless, they still may be facing pressures to win from their coaches. Validating the CSOS for these subgroups of athletes will allow for further addressing the problem of unethical conduct among student-athletes.

In sum, this study focused on validating the CSOS for use with student-athletes participating in Division I team sports. The results supported construct and criterion validity and reliability for the CSOS. The CSOS provides an opportunity to measure athletes' conduct toward opponents that targets two competing mindsets of sports play: winning at all costs or losing with grace, and it can be used to measure sport conduct toward opponents of varsity student-athletes. Findings confirmed that athletes who define success upon personal improvement and task-mastery are more likely to engage in sportsmanship and less likely to engage in gamesmanship; whereas athletes who define success upon comparisons with the performance of others are less likely to engage in sportsmanship and more likely to engage in gamesmanship and instrumental aggression. Nevertheless, future research is needed to further validate the CSOS.

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