

This article was downloaded by: ["Queen's University Libraries, Kingston"]

On: 09 May 2015, At: 18:09

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Journal of Applied Sport Psychology

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/uasp20>

### Interdependence and Social Identity in Youth Sport Teams

Mark W. Bruner<sup>a</sup>, Mark Eys<sup>b</sup>, M. Blair Evans<sup>c</sup> & Kathleen Wilson<sup>d</sup>

<sup>a</sup> Nipissing University

<sup>b</sup> Wilfrid Laurier University

<sup>c</sup> Queen's University

<sup>d</sup> California State University Fullerton

Accepted author version posted online: 03 Feb 2015. Published online: 03 Feb 2015.



CrossMark

[Click for updates](#)

To cite this article: Mark W. Bruner, Mark Eys, M. Blair Evans & Kathleen Wilson (2015): Interdependence and Social Identity in Youth Sport Teams, *Journal of Applied Sport Psychology*, DOI: [10.1080/10413200.2015.1010661](https://doi.org/10.1080/10413200.2015.1010661)

To link to this article: <http://dx.doi.org/10.1080/10413200.2015.1010661>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms &

Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

## Interdependence and Social Identity in Youth Sport Teams

MARK W. BRUNER

*Nipissing University*

MARK EYS

*Wilfrid Laurier University*

M. BLAIR EVANS

*Queen's University*

KATHLEEN WILSON

*California State University Fullerton*

The degree to which team members believe that they rely on one another to perform successfully and achieve collective outcomes may relate to perceptions about the extent that they integrate the group within their own identity. This study examined the relationship between interdependence and social identity among 422 high school team sport athletes. Youth completed measures of task and outcome interdependence, as well as social identity. Multilevel analyses revealed that higher perceptions of outcome interdependence at an individual and team level predicted greater social identity. Results highlight the role of outcome interdependence on athletes' perceptions of social identity in sport teams.

Approximately 75% of Canadian youth engage in organized sport with the majority doing so in a team setting (Canadian Fitness and Lifestyle Research Institute, 2012). Researchers have begun to examine how the identities youth form through their membership on sport teams—their social identities—influence adolescent cognitions and behavior (Bruner, Boardley, & Côté, 2014). Current understanding of social identity in sport is guided by social identity theory (SIT; Tajfel & Turner, 1979) and a multidimensional conceptualization of social identity (Bruner, Dunlop, & Beauchamp, 2014). Cameron (2004) proposed and tested a three-factor model of social identity, including (a) ingroup ties, perceptions of similarity, bonding, and belongingness with other group members; (b) cognitive centrality, the importance of being

---

Received 9 September 2014; accepted 18 January 2015.

Address correspondence to Mark W. Bruner, School of Physical and Health Education, Nipissing University, 100 College Drive, Box 5002, North Bay, Ontario, P1B 8L7 Canada. E-mail: markb@nipissingu.ca

a group member; and (c) ingroup affect, the positivity of feelings associated with group membership. Drawing on this conceptualization of social identity, a recent study investigated the relationship between the three dimensions of social identity and moral behavior in a sample of high school athletes (Bruner et al., 2014). Adolescents who held greater perceptions of ingroup affect with their sport team early in the season reported engaging in more prosocial behavior toward teammates (e.g., encouraging a teammate) at the end of the season (Bruner et al., 2014).

Given the identified developmental benefits of enhanced social identity, it is important to consider the factors that may influence the extent that young athletes develop social identities related to the sport teams to which they belong. Some research has examined the influence of the coach on social identity with an elite adult sample in sport (De Backer et al., 2011), yet other research examining how the dynamics of the group influence social identity has been limited to experimental work conducted in the laboratory and field setting with nonsport groups (e.g., summer camp groups; Sherif, Harvey, White, Hood, & Sherif, 1961). Although there are many unique features of sport environments that may influence social identity, the perceived interdependence of the setting may warrant consideration. Sport teams are inherently united in the fact that they include some degree of social interdependence, as members rely on one another to complete a shared task (e.g., advancing a ball up the field of play) and to achieve collective outcomes (e.g., winning or losing a game; Evans, Eys, & Bruner, 2012). However, not every team member will perceive that structure in the same way (Van der Vegt, Emans, & Van de Vliert, 1998). Perceptions of interdependence may vary and are distinguished according to the degree that members feel they rely on others to perform (i.e., task interdependence) and how members feel teammates influence personal outcomes as well as shared outcomes across the whole team (i.e., outcome interdependence; Johnson & Johnson, 2005). Indeed, members of work groups who feel that they rely on other members to achieve personal outcomes and perform collective tasks interact prosocially with teammates (Van der Vegt et al., 1998).

In the youth sport context, Bruner, Hall, and Côté (2011) revealed that adolescent athletes perceiving greater outcome interdependence with teammates reported more positive youth developmental experiences within their sport team. In a similar vein, stronger feelings that one relies on other group members might relate to perceptions about the extent that they integrate the group within their own personal identity. This postulate is supported by decades of educational psychology research revealing that children placed in cooperative and interdependent learning environments: (a) develop interpersonal attraction to other group members, (b) support other members, and (c) are motivated to perform well (see Johnson & Johnson, 2009). Understanding the relationship between interdependence and identity is, thus, vital for exploring the potential to structure sport team environments as an ideal foundation for forming social identities. The purpose of this study was to examine the relationship between interdependence and social identity in youth team sport athletes. In the current study, we hypothesized that enhanced perceptions of outcome interdependence would positively predict social identity.

## METHOD

### Participants

Four hundred twenty-two adolescent athletes ( $M_{age} = 15.7$ ,  $SD = 1.3$ , 37% female) from 35 high school sport teams ( $k = 10$  volleyball,  $k = 14$  basketball,  $k = 3$  soccer,  $k = 3$  ice hockey,  $k = 2$  American football,  $k = 2$  rugby,  $k = 1$  lacrosse) in Canada volunteered to participate in this study (see Table 1). On average, the teams included 12.1 members ( $SD = 5.8$ ) and were classified as integrated teams with all members being task interdependent

**Table 1**  
**Participant Demographics by Sport**

Sport	No. of teams	No. of male teams	No. of female teams	No. of total participants	No. of male	No. of female
Volleyball	10	2	8	86	15	71
Basketball	14	12	2	139	118	21
Soccer	4	0	3	54	0	54
Ice Hockey	3	3	0	43	43	0
Football	2	2	0	60	60	0
Rugby	2	2	0	28	28	0
Lacrosse	1	0	1	12	0	12
Total	35	21	14	422	264	158

Note.  $N = 422$ .

to a similar extent (Evans et al., 2012), with the exception of two football teams considered segmented in nature—teams with members who weren't always required to interact with one another in competition.

## Measures

### *Interdependence perceptions*

Task and outcome interdependence were assessed using an adapted sport-specific interdependence measure (Bruner et al., 2011). The scale is composed of 10 items previously adapted from organizational psychology (Van der Vegt, Emans, & Van de Vliert, 1998, 2001) to reflect athletes' perceptions of team tasks (e.g., "I depend on teammates or other athletes I practice with to perform well"; four task interdependence items) as well as how team members influence pursuit of individual and collective outcomes (e.g., "It benefits/hinders me when my teammates or athletes with whom I practice attain their goals"; six outcome interdependence items). Participants responded on a Likert-type scale with anchors of 1 (*strongly agree*) to 5 (*strongly disagree*) for task interdependence items, and a scale ranging from 1 (*completely hinder*) to 5 (*completely benefit*) for outcome interdependence. The reliability of the Task and Outcome Interdependence subscales was assessed and found to be acceptable ( $\alpha = .79$  and  $.84$  for Task and Outcome Interdependence, respectively). The factorial validity of the measure was evaluated and found to be adequate.<sup>1</sup> Adequate reliability and factorial validity of the measure have been demonstrated with a youth sample (Bruner et al., 2011).

### *Social identity*

Social identity was assessed using a sport-adapted measure, originally developed by Cameron (2004). The measure includes 12 items to evaluate the three dimensions of social identity (four items each) including ingroup ties (e.g., "I have a lot in common with other members in this team"), cognitive centrality (e.g., "In general, being a team member is an

<sup>1</sup>Confirmatory factor analysis of the interdependence data supported the factorial validity of the adapted interdependence measure,  $\chi^2(34) = 33.57, p = .48$ ; comparative fit index (CFI) = 1.00, root mean square error of approximation (RMSEA) = 0.00, 90% confidence interval (CI) [0.000, 0.035], standardized root mean square residual (SRMR) = 0.03. The data also demonstrated adequate factorial validity for the adapted social identity measure,  $\chi^2(47) = 192.19 (p < .05)$ ; CFI = 0.90, RMSEA = 0.086, 90% CI [0.073, 0.098], SRMR = 0.083.

important part of my self-image”), and ingroup affect (e.g., “Generally, I feel good when I think about myself as a team member”). The items were answered using a Likert-type scale, anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). The reliability was assessed and found to be acceptable for Ingroup Ties ( $\alpha = .79$ ), Ingroup Affect ( $\alpha = .77$ ), and Cognitive Centrality subscales ( $\alpha = .67$ ; Nunnally & Bernstein, 1994). The factorial validity of the measure was evaluated and found to be adequate (see Footnote 1). Previous research using the same measure has demonstrated adequate reliability and factorial validity with a youth sample (Bruner et al., 2014).

### Procedure

Ethical approval was attained from the lead author’s ethics review board and participating school boards. Approximately 80 coaches from three school boards were invited to participate in the study through presentations at coaching and school board athletic meetings. Participants were recruited from high school teams of interested coaches. Informed consent was obtained from each of the participants and the parents of those participants younger than age 18. Participants completed a questionnaire prior to, or after, a scheduled practice at the end of the regular season. Regular seasons were 3 to 4 months (i.e., 12–16 weeks) in length.

### Analyses

The scores on each subscale of interdependence and social identity were summed and an average score computed. Descriptive and bivariate statistics were calculated for the study variables. Multilevel analyses were performed for each of the three dimensions of social identity with task and outcome interdependence entered at Level 1 and team means for task and outcome interdependence entered at Level 2. The multilevel analyses were conducted using hierarchical linear modeling software (HLM7; Raudenbush, Bryk, Cheong, Congdon, & du Tolt, 2011). Using a multilevel modeling approach allowed the researchers to account for the young athletes being nested within their respective high school sport teams. Restricted maximum likelihood was used to estimate the models. First, a null model was computed for each of the social identity dimensions to determine the level of independence. Next, a model was specified with task and outcome interdependence entered on the individual level (Level 1) centered around the team average (group-mean centered). Group-mean centering was used to account for the young athletes being nested within their high school sport teams (group environment; Enders & Tofighi, 2007). On Level 2, the team means for both task and outcome interdependence were grand-mean centered and included on the intercept. The use of grand-mean centering at Level 2 establishes a meaningful zero point on the scales (Enders & Tofighi, 2007). In the main analyses, we compared the random and fixed slopes. If the random slopes were not significant, then the slopes were fixed. Assumptions for the multilevel models including normality, independence, and variance of the Level 1 and 2 residuals were evaluated for each model of the social identity dimensions.

## RESULTS

Descriptive and bivariate statistics of the mean scores are presented in Table 2. Assumptions of multilevel analysis were evaluated and the assumptions were met for task interdependence, ingroup ties, and cognitive centrality. There was evidence of skewness for the residuals of outcome interdependence and ingroup affect. The analyses were repeated with transformed variables and the pattern of the results was similar. As such, the untransformed findings are presented for ease of interpretation.

**Table 2**  
**Descriptive and Bivariate Statistics**

	<b>M</b>	<b>SD</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Ingroup ties	5.48	1.08	—	.42**	.56**	.13**	.38**
2. Cognitive centrality	4.91	1.02		—	.50**	.20**	.34**
3. Ingroup affect	5.94	.96			—	.20**	.49**
4. Task interdependence	2.98	.88				—	.31**
5. Outcome interdependence	4.00	.77					—

Note.  $N = 422$ . All  $ps < .01$ .

To determine if there was group-level variance in social identity, a null model was run for each of the three dimensions of social identity (ingroup ties, cognitive centrality, ingroup affect) without any predictors (task and outcome interdependence). The null model partitioned the variance into individual-level (Level 1) within team variance, and group-level (Level 2) between team variance. The resulting intraclass correlations (ICCs) were .10 (ingroup ties), .01 (cognitive centrality), and .07 (ingroup affect), implying that between 1% and 10% of score variability can be attributed to team-level variability. Young athletes who were on the same team shared some similarity in their perceptions of social identity.

**Table 3**  
**Coefficients for Interdependence Predicting Social Identity for Model 1**

<b>Fixed effects</b>	<b>In-group ties coefficient (SE)</b>	<b>Cognitive centrality coefficient (SE)</b>	<b>In-group affect coefficient (SE)</b>
<b>Level 1</b>			
Intercept	5.48 (0.06)**	4.90 (0.04)**	5.94 (0.05)**
Task interdependence	0.06 (0.04)	0.13 (0.07)	0.06 (0.05)
Outcome interdependence	0.48 (0.08)**	0.37 (0.08)**	0.51 (0.08)**
<b>Level 2</b>			
Task interdependence mean	-0.48 (0.23)*	0.05 (0.16)	-0.13 (0.17)
Outcome interdependence mean	0.95 (0.21)**	0.57 (0.19)**	0.79 (0.18)**
<b>Random effects</b>			
Level 1 ( $r$ )	0.92	0.93	0.61
Level 2 ( $u_0$ )	0.08	0.001	0.04
TINT ( $u_1$ )			0.02
OINT ( $u_2$ )			0.12
<b>Pseudo <math>R^2</math></b>			
Overall	15.0%	12.0%	—
Level 1	13%	10%	—
Level 2	37%	93%	—
ICC	0.10	0.01	0.07
-2*log likelihood	1193.47	1173.61	1036.15

Note. Level 1:  $Social\ Identity_{ij} = \beta_0 + \beta_1 (Task\ interdependence\ mean) + \beta_2 (Outcome\ interdependence\ mean) + r$ ; Level 2:  $\beta_0 = \gamma_{00} + \gamma_{01} (Task\ interdependence\ mean) + \gamma_{02} (Outcome\ interdependence\ mean) + \mu_0$ ;  $\beta_1 = \gamma_{10}$ ;  $\beta_2 = \gamma_{20}$ ; Group mean centered variables are italicized, grand mean centered are underlined. TINT = Task interdependence; OINT = Outcome interdependence; ICC = Intraclass correlation.

\* $p \leq .05$ . \*\* $p \leq .01$ .

Table 3 summarizes the results for the models. For the ingroup ties and cognitive centrality dimensions of social identity, the slopes for both task and outcome interdependence were fixed, given that the random slopes were not significant. The slopes for task and outcome interdependence in predicting ingroup affect were identified as random, as the calculated chi-square value based on the difference in the deviance statistic (log-likelihood) for the random versus the fixed models was found to be greater than the critical chi-square value.

Model 1 included task and outcome interdependence as Level 1 variables and team task and outcome interdependence as Level 2 variables predicting each of the social identity dimensions. At the individual level (i.e., Level 1), higher perceptions of outcome interdependence significantly predicted greater social identity, with significant coefficients for ingroup ties ( $b = .48, p < .01$ ), cognitive centrality ( $b = .37, p < .01$ ), and ingroup affect ( $b = .51, p < .01$ ). Task interdependence at the individual level did not predict any of the social identity subscales. Similarly, at the team level (i.e., Level 2), means for outcome interdependence predicted greater social identity with ingroup ties ( $b = .95, p < .01$ ), cognitive centrality ( $b = .57, p < .01$ ), and ingroup affect ( $b = .79, p < .01$ ) all being significant. As such, teams and individuals that had higher perceptions of outcome interdependence reported greater identification with the team. Task interdependence at the team level did not predict cognitive centrality and ingroup affect but significantly predicted ingroup ties ( $b = -.48, p < .05$ ).<sup>2</sup> Interdependence accounted for variance at both the individual and team levels, which ranged from 12% (cognitive centrality) to 15% (ingroup ties). As the model for ingroup affect had a significant random slope, no variance was calculated.

## DISCUSSION

The purpose of this study was to examine perceptions of interdependence and social identity in youth team sport athletes. Results revealed that athletes who perceived higher outcome interdependence reported stronger social identity in terms of ingroup ties, cognitive centrality, and ingroup affect. These results were consistent at individual and team levels. Collectively, the findings support the study hypothesis and highlight the potential for young team members' social identity to be formed, to some extent, in relation to beliefs about how they rely on teammates for shared and individual outcomes. Consistent with postulates of social identity theory (Tajfel & Turner, 1979), we expect that some of this relationship is formed on the tendency for individuals perceiving shared outcomes to establish firmer boundaries defining the in- and outgroup and take pleasure from belonging to their team.

These results were particularly notable in conjunction with the relative absence of task interdependence as a significant individual and group-level predictor. In support of the current findings, task interdependence perceptions appear less relevant than outcome interdependence perceptions regarding both the prediction of youth developmental outcomes (Bruner et al., 2011) as well as perceptions of cohesion (Evans & Eys, 2015). On one hand, this may signal at a conceptual level that task interdependencies may be influential only to the extent that they promote outcome interdependence. From a more practical perspective, however, the present

---

<sup>2</sup>Given the negative direction of the beta, we suspected that this finding was a result of a suppressor variable (Tabachnick & Fidell, 2007). As such, we reran the multilevel analysis with only task interdependence entered as a predictor at Level 2. The findings confirmed our suspicion as the beta for team task interdependence was positive ( $b = .14$ ) and no longer significant, implying that one of the other variables was serving as a suppressor variable leading to the significant negative relationship (Tabachnick & Fidell, 2007).



findings may also have been due to the consistent competitive environments of all the team sports (e.g., all participants shared similar task interdependencies), so examining recreational or individual sport team environments may yield different results.

Given that this is the first study to examine the relationship between interdependence and social identity, there are a number of avenues of future research. First, although previous literature led to an assumption that perceptions of interdependence will influence social identity, the cross-sectional design of the current study precludes causal statements. Provided that it is plausible that the degree to which one identifies with their group influences their perceptions of interdependence, a longitudinal design assessing both perceptions would further our understanding of the direction of this relationship. A second area of future work should involve longitudinally comparing perceptions of group processes of participants on sport teams with other extracurricular activities as well as youth not involved in any activities. Although there has been growing interest in longitudinally examining extracurricular participation with positive academic, psychological, and behavioral outcomes (e.g., Frederick & Eccles, 2006), researchers have yet to compare youth perceptions of group constructs (and their correlates) across developmental settings. Third, it may be beneficial to conduct qualitative research with young athletes to probe deeper into factors that determine whether team members feel that others hinder or benefit their own outcomes. Finally, following from the evidence accrued through the previous suggestions for future research, another direction would be to investigate the effectiveness of a team-building intervention for coaches to enhance outcome interdependence and social identity. Team building has been identified as a popular, effective psychological intervention designed to enhance group dynamics in sport (Bruner, Eys, Beauchamp & Côté, 2013). One popular team-building approach in sport is the use of individual and collective goal setting. Perhaps such approaches are beneficial because the interventions more firmly establish the importance and affective benefits of group membership including outcome interdependence and social identity. However, this suggestion awaits further research.

In line with perceptions of whether teammates benefit or hinder personal outcomes, team sports often inherently involve some aspect of competition among members (e.g., members fighting for playing time). The current article lends support for the proposition that perceptions of mutual benefit may be particularly important in contexts that include this type of intrateam competition. Unless these competitive relationships are framed as being beneficial for each member (e.g., constructive competition; Murayama & Elliot, 2012), then outcome interdependence might decrease to the point that it will harm not only personal developmental outcomes (Bruner et al., 2011), but also the thoughts, feelings, and sense of belonging associated with the team. Given their vital role in establishing and maintaining the team environment, coaches could foster strong social identities and cooperative behaviors by emphasizing outcome interdependence.

## REFERENCES

- Bruner, M. W., Boardley, I., & Côté, J. (2014). Social identity and prosocial and antisocial behavior in youth sport. *Psychology of Sport and Exercise, 15*, 56–64. <http://dx.doi.org/10.1016/j.psychsport.2013.09.003>
- Bruner, M.W., Dunlop, W., & Beauchamp, M.R. (2014). A social identity perspective on group processes in sport and exercise. In M.R. Beauchamp & M. A. Eys (Ed.), *Group dynamics in exercise and sport psychology* (2nd ed., pp. 38–52). New York, NY: Routledge.
- Bruner, M.W., Eys, M.A., Beauchamp, M. & Côté, J. (2013). Examining the origins of team building in sport: A citation network and genealogical approach. *Group Dynamics: Theory, Research and Practice, 17*, 30–42. <http://dx.doi.org/10.1037/a0030114>

- Bruner, M. W., Hall, J., & Côté, J. (2011). Influence of sport type and interdependence on the developmental experiences of youth male athletes. *European Journal of Sport Science, 11*, 131–142. <http://dx.doi.org/10.1080/17461391.2010.499969>
- Cameron, J. E. (2004). A three-factor model of social identity. *Self and Identity, 3*, 239–262. <http://dx.doi.org/10.1080/13576500444000047>
- Canadian Fitness and Lifestyle Research Institute (2012). *2011 Kids CANPLAY. Bulletin 4: Participation in organized physical activity and sport*. Ottawa, Ontario, Canada.
- De Backer, M., Boen, F., Ceux, T., De Cuyper, B., Høigaard, R., . . . Vande Broek, G. (2011). Do perceived justice and need support of the coach predict team identification and cohesion? Testing their relative importance among top volleyball and handball players in Belgium and Norway. *Psychology of Sport and Exercise, 12*, 192–201. <http://dx.doi.org/10.1016/j.psychsport.2010.09.009>
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: a new look at an old issue. *Psychological Methods, 12*, 121–138. <http://dx.doi.org/10.1037/1082-989X.12.2.121>
- Evans, M. B., & Eys, M. A. (2015). Collective goals and shared tasks: Interdependence structure and perceptions of individual sport team environments. *Scandinavian Journal of Medicine and Science in Sports, 25*, e139–e148. <http://dx.doi.org/10.1111/sms.12235>
- Evans, M. B., Eys, M. A., & Bruner, M. W. (2012). Seeing the “we” in “me” sports: The need to consider individual sport team environments. *Canadian Psychology, 53*, 301–308. <http://dx.doi.org/10.1037/a0030202>
- Fredricks, J. A., & Eccles, J. S. (2006). Is extracurricular participation associated with behavioural outcomes: concurrent and longitudinal relations. *Developmental Psychology, 42*, 698–713. <http://dx.doi.org/10.1037/0012-1649.42.4.698>
- Johnson, D. W., & Johnson, R. T. (2005). New developments in social interdependence theory. *Genetic, Social, and General Psychology Monographs, 131*, 285–358. <http://dx.doi.org/10.3200/MONO.131.4.285-358>
- Johnson, D.W., & Johnson, R.T. (2009). An educational psychology success story: social interdependence theory and cooperative learning. *Educational Researcher, 38*, 365–379. <http://dx.doi.org/10.3102/0013189X09339057>
- Murayama, K., & Elliot, A. J. (2012). The competition–performance relation: A meta-analytic review and test of the opposing processes model of competition and performance. *Psychological Bulletin, 138*, 1035–1070. <http://dx.doi.org/10.1037/a0028324>
- Nunnally, J. C., & Bernstein, I. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Raudenbush, S., Bryk, A., Cheong, Y. F., Condon, R. T., & du Tolt, M. (2011). *HLM 7: Hierarchical linear & nonlinear modeling*. Lincolnwood, IL: Scientific Software International.
- Sherif, O., Harvey, B., White, J., Hood, W., & Sherif, C. (1961). *Intergroup conflict and cooperation: the robbers cave experiment*. Norman, OK: University Book Exchange.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W. Austin (Ed.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks-Cole.
- Van der Vegt, G., Emans, B., & Van de Vliert, E. (1998). Motivating effects of task and outcome interdependence in work teams. *Group and Organization Management, 23*, 124–143.
- Van der Vegt, G. S., Emans, B. J., & Van de Vliert, E. (2001). Patterns of interdependence in work teams: A two-level investigation of the relations with job and team satisfaction. *Personnel Psychology, 54*, 51–69. <http://dx.doi.org/10.1111/j.1744-6570.2001.tb00085.x>