

Contrary to Popular Belief, Refs are People Too! Personality and Perceptions of Officials

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Study 1 investigated the personality characteristics of volleyball, hockey, and wrestling officials and compared the domain scores to a contrast group of non-officials and to the norms of the NEO Five-Factor Inventory (NEO-FFI). Results showed that there were no differences among these groups on any of the five factors. Officials reported average ratings on all domains, except for an above average score on Extraversion. Study 2 used a modified version of the NEO-FFI in order to investigate athletes' and fans' perceptions of officials. Results showed that athletes rated officials significantly less favorably on all domains of personality. The discrepancies between officials' self-report ratings and athletes' perceptions of officials suggests that poor treatment of officials may be due to pervasive negative attitudes towards officials outside of the sporting context.

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Officials are crucial for the smooth functioning of sport at all levels of competition. According to Glegg and Thompson (1993), the official is the essential third dimension of an athletic contest, with the players and coaches constituting the first and second respectively. However, an uneasy relationship tends to exist between game participants and officials as historically they have viewed each other as a source of constant aggravation (Dickson, 2002). Anecdotally, there are recorded cases of players and coaches physically assaulting officials, throwing equipment at officials, yelling abuse, and screaming profanities. Reasons for such behaviour and disrespect are unclear, yet research on officials over the last two decades has been sparse.

Despite their essential role, recent reports have found that officials are dropping out at an alarming rate. VanYperen (1998) estimated the turnover rate among Dutch volleyball referees to be approximately 20%, while Forbes and Betts (2003) reported that the Canadian Hockey Association loses approximately 30% of its 33,000 registered officials annually and, in turn, must spend about \$500,000 yearly in training new officials. The majority of research on officials has therefore focused on issues related to stress and burnout.

In one of the first studies in this area, Taylor, Daniel, Leith, and Burke (1990) investigated perceived stress, psychological burnout, and paths to turnover intentions among 1,269 registered soccer officials. Participants completed a self-report survey related to stress and burnout at both the beginning and end of the soccer season. Results showed that younger respondents tended to report more burnout, suggesting that older referees had developed better coping resources, such as more confidence and assertiveness. The study also found that evaluative aspects of officiating (such as fear of failure) related most strongly to feelings of burnout. In addition, the mismatch between expected and perceived appreciation and recognition also appeared to contribute to burnout. The researchers suggested that players, coaches and spectators are perhaps more likely to evaluate referees negatively rather than positively and that perceptions of negative evaluation may contribute to burnout and turnover intentions.

In a similar study, Goldsmith and Williams (1992) investigated perceived stressors for football and volleyball officials. They found that 'fear of failure' led to the most perceived stress, and that 'verbal abuse' was also a high contributor to stress. However, football officials also perceived greater stress than volleyball officials for the 'fear of physical harm' factor. This would lead one to suggest that violence toward officials is perceived as more likely to occur in full-contact sports.

A number of other studies have investigated stress and burnout among officials across a variety of sports such as baseball and softball (Rainy, 1995), American and Australian basketball (Anshel & Weinberg, 1995; Rainey & Winterich, 1995) and rugby (Rainey & Hardy, 1997; Rainey & Hardy, 1999). Consistent with previous research, there are four stress factors (fear of

failure or performance concerns, fear of physical harm, interpersonal conflict and time pressure) that have emerged consistently among studies of officials. Interestingly, while all of the studies have consistently reported these stress factors, officials generally rate the quantity or effect of them as being only mild to moderate. Thus, it appears that contrary to what the attrition rates might imply, officials do not at least report experiencing high levels of stress. However, since the majority of this research has sampled currently active officials, it is possible that these officials possess characteristics that differentiate them from their counterparts who dropped out.

Research investigating the personality characteristics of officials dates back almost three decades. Sinclair (1975) investigated the personality characteristics of nationally rated Canadian male volleyball officials using the California Psychological Inventory. He found that these men appeared to be functioning effectively both socially and intellectually and possessed a higher degree of dominance, persistence, social initiative, and a capacity for independent thinking and action than does the average population. When comparing the most experienced versus least experienced volleyball officials, Sinclair (1975) also found that the more experienced officials tended to show more leadership, were more outgoing, enthusiastic and persuasive, and communicated more effectively. They also appeared to be more thorough, tolerant, tactful, and resourceful than their juniors. Fratzke (1975) reported that officials as a whole were more outgoing and adventuresome than the general population of men, that outstanding male basketball officials were more confident and sensitive to social demands, and had significantly more experience than the average officials.

Several other studies have taken a more sociological perspective and investigated the profiles and motivations of officials for entering what some individuals would refer to as a "masochistic" role (Purdy & Snyder, 1985). These studies have found that most officials are male, between 30 and 40 years old, and are mostly either professionals or teachers. When asked their primary reasons for officiating, Purdy and Snyder (1985) reported that basketball officials rated "overall enthusiasm for sports" and "challenge and excitement" as their first and second responses. In a study of intercollegiate football officials, Ittenbach and Eller (1988) reported that personality profiles echoed those of other studies with an emphasis on leadership qualities. These researchers also concluded that officials are motivated by a genuine interest in working with other people. Similarly, Furst (1991) investigated patterns of initial entry and continuity in collegiate sports officiating and found that most officials began officiating to "stay involved in the sport," "to give something back" and "for the love of the sport". When asked why they continued officiating, most responses were related to positive social relationships or a commitment to the sport.

Thus, research to date indicates that sport officials generally possess favourable personality traits, are motivated by mostly altruistic values, and begin and remain involved in officiating for social and interpersonal reasons. The question remains then: why are officials generally perceived in such a negative light?

Dickson (2002) sought opinions from referees, assistant referees, supervising referees, players, and coaches to assess the proficiency of soccer referees in executing competencies essential to elite soccer refereeing. All groups rated officials on a list of 37 refereeing competencies in terms of evaluation and importance. Results revealed that competencies related to rules and decision-making processes were the most discrepant among the groups, with players and coaches rating the importance high and officials' competence low. It is therefore apparent that players and coaches bring a different perspective to the assessment of referee proficiency.

In a study of the development of athletes' conceptions of sport officials' authority, Rainey, Santilli and Fallon (1992) examined the relation between cognitive development and willingness to argue among baseball players. Their results demonstrated that players' reports that they would argue with parents and umpires was related to age, cognitive development, and conceptions of obedience and legitimacy. The authors surmise that the tendency to argue increases as the perceived inviolability of authority diminishes with increasing age, cognitive sophistication, or both. If these interpretations are accurate, conflicts between players and umpires are, to some extent, an unavoidable consequence of the cognitive development of players.

As players develop cognitively, it is also possible that they are able to differentiate between pervasive personality and role-related behaviour. Because the rules and mores of society are often excused in the sporting context, coaches and players do not necessarily identify their own game-behaviour as representative of their personality. For example, a coach who is otherwise very agreeable might argue with an official as a delay strategy (i.e. situation-specific behaviour) or a "really nice" basketball player might intentionally foul another player if the momentary benefit outweighs the consequences. In either case, behaviour "on and off the court" is deemed unrelated. Are players and fans willing to extend the same courtesy to officials? When studying wrestling officials, Smith (1982, as cited by Goldsmith & Williams, 1992) noted that "In most everyday life situations, no matter how angry or upset you are with someone, the mores of sociability require that you show some consideration (towards other people)...No such rules seem to apply to relationships with a referee." (p.114).

The purpose, therefore, of Study 1 was to examine the personality characteristics of officials in non-contact (volleyball), contact (hockey), and an individual sport (wrestling) using the five-factor model of the NEO-FFI in order to investigate whether there were differ-

ences among officials in these different sports. It was hypothesized that hockey officials would report higher Extraversion and lower levels of Neuroticism, Agreeableness, Openness and Conscientiousness due to the culture of the sport and the physical proximity of the officials to the players. It was also hypothesized that scores on each domain would approach normality as sports moved toward less contact formats.

The purpose of Study 2 was to investigate the perceptions of officials' off-the-court personalities as rated by athletes and fans using a modified version of the NEO-FFI. Here, the question under investigation was: do athletes and fans generalize their unfavourable attitudes toward officials *as persons*? It was hypothesized that athletes and fans would rate officials less favourably on all five personality domains.

Study 1

Method

Participants. A total of 33 male officials agreed to participate (12 wrestling, 10 hockey and 11 volleyball) in the study. The officials' mean age was 32.19 ($SD = 12.98$), they had an average of 12.21 ($SD = 9.89$) years of officiating experience with the majority being certified at Level 3 in their sport (of 4 levels). A contrast group of non-officials was also included. These were 89 male and female kinesiology students who received points toward their class grade for participating. (Results of an independent t-test indicated that there were no significant differences between the male and female responses on the NEO-FFI, therefore the data was grouped together for all further analyses).

Instruments. All officials completed a background questionnaire consisting of age, sex, occupation, the number of years involved in officiating, participation as a player in the sport, whether they officiated any other sports, and their top two reasons for officiating. Both officials and non-officials completed the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992). This is a 60-item self-report inventory measuring the five personality domains of Neuroticism (N), which is a measure of emotional stability; Extraversion (E), a measure of sociability; Openness (O), which measures one's openness to experience or imagination; Agreeableness (A), a dimension of interpersonal affiliation; and finally Conscientiousness (C), which concerns the processes of planning and organizing.

Table 1*Descriptive Statistics of Officials' Self-Report Scores on the NEO-FFI by Sport*

Domain	Sport	N	Mean	Std. Deviation
Neuroticism	Wrestling	12	15.67	6.68
	Hockey	10	10.90	7.09
	Volleyball	11	16.45	8.26
	Contrast	89	17.24	7.76
Extraversion	Wrestling	12	32.75	6.18
	Hockey	11	36.45	5.18
	Volleyball	11	33.91	2.84
	Contrast	89	33.40	5.53
Openness	Wrestling	12	26.50	6.87
	Hockey	11	25.36	5.66
	Volleyball	9	27.56	7.92
	Contrast	89	26.16	5.42
Agreeableness	Wrestling	12	31.83	6.56
	Hockey	11	29.27	4.86
	Volleyball	11	32.09	4.53
	Contrast	87	33.36	5.83
Conscientiousness	Wrestling	11	31.45	5.45
	Hockey	11	36.64	4.67
	Volleyball	11	36.45	8.00
	Contrast	88	32.95	6.36

Results and Discussion

Table 1 shows the means and standard deviations for each of the groups on all five personality domains. Results of a one-way ANOVA for each of the personality domains revealed that there were no group differences among any of the sports on any of the personality factors. An overall alpha of .05 with a Bonferroni adjustment to .02 was used for each analysis. Results showed that Neuroticism was non-significant $F(3, 118) = 2.10, p = .103$; Extraversion was non-significant $F(3, 119) = 1.17, p = .324$; Openness was non-significant $F(3, 117) = .25, p = .859$; Agreeableness was non-significant $F(3, 117) = 1.83, p = .146$ and Conscientiousness was non-significant $F(3, 117) = 2.30, p = .081$.

A second analysis was then undertaken collapsing across sports to compare the groups of officials versus non-officials. Despite the age and demographic differences between the officials and the contrast group of kinesiology students, this comparison was considered appropriate for two main reasons. First, research shows that personality is generally stable over time (Leibert & Spiegler, 1994). Therefore, it is unlikely that the approximately 10 year age difference between the groups would be relevant. Second, both groups consisted of sports enthusiasts who presumably share a number of personality characteristics. Any differences may be attributed to their status as an official or a non-official.

With alpha set at .02, results revealed no differences on any of the domains between the officials and the non-officials. For Neuroticism $F(1, 120) = 3.08, p = .082$; for Extraversion $F(1, 121) = .71, p = .401$, for Openness $F(1, 119) = .044, p = .834$, and for Conscientiousness $F(1, 119) = 2.10, p = .150$.

Results did not support the first hypothesis as volleyball, wrestling, and hockey officials did not differ among each other on any of the personality domains of the NEO-FFI. It was also found that officials did not differ from non-officials. However, it was possible that the contrast group of kinesiology students was actually too similar to the officials, as these individuals are also sport-minded people who are involved in athletics at some level. Because the NEO-FFI also contains norms generated from over 1000 participants, we felt that it was appropriate to compare the mean officials' scores on the NEO-FFI with the chart of norms for each personality domain. Results of this comparison showed that officials fell into the average ranges on all personality domains with the exception of Extraversion, for which the officials rated themselves in the 'high' range (see Figure 1) This finding is in accordance with the previous literature which found that officials are consistently rated higher on personality traits that reflect an extraverted and outgoing nature.

In general, these findings suggest that officials are just like 'regular' people. They do not seem to possess any outstanding characteristics that would make them resilient to the "slings and arrows" of verbal abuse and other stress factors that previous researchers have outlined.

However, anecdotal evidence suggests that officials are *perceived* as less favourable than 'regular' people, at least in the sporting context. The purpose of Study 2 was to investigate whether this negative perception exists, and more importantly, whether officials are thought to possess negative personality characteristics outside of the sporting venue.

Study 2

Method

Participants. The officials' data from Study 1 was included in Study 2. For this study, participants also included 40 male intercollegiate level athletes of the same sports, namely 19 volleyball players, 11 hockey players and 10 wrestlers. The athletes' mean age was 23.07 years ($SD = 7.17$) and they reported being involved in their sport an average of 11.43 years ($SD = 8.10$). In addition, data was collected from 125 "fans" consisting of undergraduate kinesiology students with a mean age of 21.38 years ($SD = 3.62$). These students were all self-identified sport enthusiasts of various sports enrolled in Introductory Sport Psychology at UNB. They received bonus points in their class for participating in the study.

Instruments. Participants completed a brief background questionnaire along with a modified version of the NEO-FFI. This consisted of the existing items of the NEO-FFI altered from "I" to read "Most Officials". For example, the item "I often feel inferior to others" was changed to "Most officials often feel inferior to others" and "I really enjoy talking to people" was changed to "Most officials really enjoy talking to people." The response format was unchanged from the original version.

Procedure. Athletes were asked to complete the modified NEO-FFI with an image of the typical official of their sport in mind. Therefore volleyball players were asked to respond to how they perceive typical volleyball officials, hockey players were to respond with an image of a typical hockey referee, and so on. The fans were not asked to report on any specific sport (since there was a range of sport interest in the class) and were instead asked to report on a typical referee of any sport.

Table 2*Descriptive Statistics of Scores on the NEO-FFI for Category*

Domain	Category	N	Mean	Std. Deviation
Neuroticism	Athletes	43	24.02	6.14
	Officials	33	14.48	7.53
	Fans	126	24.61	4.95
	Contrast	89	17.24	7.76
Extraversion	Athletes	44	26.18	3.46
	Officials	34	34.32	5.08
	Fans	125	27.66	4.05
	Contrast	89	33.40	5.53
Openness	Athletes	43	23.60	2.07
	Officials	32	26.41	6.64
	Fans	125	23.43	2.92
	Contrast	89	26.16	5.42
Agreeableness	Athletes	42	23.55	6.01
	Officials	34	31.09	5.42
	Fans	125	23.73	4.89
	Contrast	87	33.36	5.82
Conscientiousness	Athletes	43	28.42	5.18
	Officials	33	34.85	6.49
	Fans	125	30.30	5.00
	Contrast	88	32.95	6.36

Results and Discussion

The self-report referee data on the NEO-FFI was compared to the athletes' and fans' responses on the modified NEO-FFI. Table 2 shows the mean scores for each group on each personality domain. Results of a one-way ANOVA for each personality domain revealed that there were significant differences among the groups on each personality factor using an alpha of .02. Specifically, for Neuroticism, $F(3, 287) = 38.19, p = .0001$; for Extraversion $F(3, 288) = 47.14, p = .0001$; for Openness $F(3, 285) = 9.770, p = .0001$; for Agreeableness $F(3, 284) = 66.55, p = .0001$; and for Conscientiousness $F(3, 285) = 11.87, p = .0001$.

Post-Hoc Results. Because the overall results were statistically significant, a Tukey HSD post-hoc test was then conducted to investigate the specific group differences. The results showed that for Neuroticism, there was no difference between the officials or the contrast group of kinesiology students ($M = 14.48, M = 17.24$), however these groups did differ from the athletes and fans ($M = 24.02, M = 24.61$), which were not different from each other. Thus, these results indicate that athletes and fans rate officials significantly higher than officials rate themselves on expressiveness of emotionality. Because neuroticism is often considered an unfavourable trait (especially among male sports participants), this finding suggests that officials are rated rather unfavourably on this domain.

Results on Extraversion found a similar pattern in group results in that athletes and fans did not differ from each other ($M = 26.18, M = 27.66$) while both groups differed from officials and the contrast group, which were not different from each other ($M = 34.32, M = 33.40$). Interestingly, here the athletes and fans rated the officials much lower on extraversion than officials rated themselves. Given that officials are consistently considered higher on extraversion than is the normal population, this evaluation is particularly intriguing. Again, assuming that a high extraversion rating is a desired quality among sport participants, these officials were not rated very favourably on this domain.

An examination of the Openness domain revealed the same pattern of group results, with athletes and fans ($M = 23.60, M = 23.43$) rating officials significantly lower on this domain than officials and the contrast group rated themselves ($M = 26.41, M = 26.16$). Considering that openness to experience and imagination are also favourable traits, once again officials are not perceived in a very positive light.

The same result was found with regard to Agreeableness as athletes and fans ($M = 23.55, M = 23.72$) rated officials ($M = 31.09$) on this interpersonal trait. Given that officials often enter into officiating for social and interpersonal motivations, this result is also troubling.

Finally, group comparisons on Conscientiousness indicated that athletes and fans did not differ from each other ($M = 28.42, M = 30.30$), and fans and contrast group scores also did not differ ($M = 32.95$), however all of these ratings were significantly lower than officials' self

report ratings ($M = 34.85$). Thus, even on measures of planning and organization, which are presumably key functions of a sports official, referees are not perceived very favourably by athletes or fans. Also, the finding that athletes who rated officials of their own sport and fans who were instructed to consider a typical official of any sport did not produce different scores suggests that both groups possess a unitary unfavourable image of a typical referee, regardless of sport.

MANOVA Results. In order to investigate whether there were any group differences by sport, we included only the data from the athletes and officials, since these groups were affiliated with one of the three sports only. A Multivariate Analysis of Variance procedure was conducted in order to test a main effect of category (athlete versus official), a main effect of sport (volleyball, hockey, or wrestling) and their interaction. Table 3 shows the means and standard deviations for each category by sport.

Main Effect of Category. Results for a main effect of category were consistent with the univariate results already reported and were significant using Pillais test, $F(5, 60) = 27.22, p = .0001$. As previously discussed, this indicates that athletes rated officials significantly lower than officials rated themselves on every domain of the NEO-FFI, except for Neuroticism where athletes rated officials significantly higher.

Main Effect of Sport. Results of a main effect of sport were also significant using Pillais test $F(10, 122) = 2.04, p = .034$, therefore contrast effects were examined in order to specify the differences among sports. Results showed a significant difference between volleyball and wrestling $F(5, 60) = 2.48, p = .041$ indicating a reliable difference across domains. An examination of the means reveals that volleyball was rated higher on four of the five personality domains, with Openness as the exception. The contrast of volleyball compared to hockey was also significant $F(5, 60) = 2.56, p = .036$ with volleyball scoring higher on all five domains. Finally, the contrast of hockey compared to wrestling was not significant $F(5, 60) = 1.10, p = .367$. In summary, collapsing across category and averaging across domains, volleyball scored significantly higher than both hockey and wrestling, which were not different from each other.

Interaction Effects. Finally, results of the 2×3 MANOVA also revealed a significant interaction with Pillais test $F(10, 122) = 2.15, p = .025$. A test of the simple main effects revealed that athletes rated officials significantly different within wrestling $F(5, 60) = 7.50, p = .0001$; athletes rated officials differently within hockey $F(5, 60) = 18.28, p = .0001$; and athletes rated officials differently within volleyball $F(5, 60) = 5.33, p = .0001$. This significant interaction can probably be explained by the fact that the greatest discrepancy between officials and athletes' ratings can be seen within hockey. Interestingly, in this sport, higher official self-report ratings on Neuroticism, Extraversion and Conscientiousness were accompanied by lower ratings by athletes on those same domains.

Table 3*Descriptive Statistics for Category by Sport on the NEO-FFI*

Domain	Category	Sport	N	Mean	Std. Deviation
Neuroticism	Athletes	Volleyball	19	21.37	3.79
		Hockey	11	29.09	8.07
		Wrestling	10	22.50	4.60
	Officials	Volleyball	9	17.56	8.82
		Hockey	10	10.90	7.09
		Wrestling	11	15.36	6.92
Extraversion	Athletes	Volleyball	19	27.58	2.57
		Hockey	11	24.09	3.51
		Wrestling	10	26.10	3.67
	Officials	Volleyball	9	34.22	2.99
		Hockey	10	37.30	4.60
		Wrestling	11	32.82	6.48
Openness	Athletes	Volleyball	19	23.74	1.66
		Hockey	11	23.46	2.51
		Wrestling	10	23.20	2.15
	Officials	Volleyball	9	27.56	7.92
		Hockey	10	25.70	5.85
		Wrestling	11	26.64	7.19
Agreeableness	Athletes	Volleyball	19	26.95	6.39
		Hockey	11	19.18	3.87
		Wrestling	10	21.40	3.47
	Officials	Volleyball	9	32.44	4.45
		Hockey	10	29.20	5.12
		Wrestling	11	32.09	6.82
Conscientiousness	Athletes	Volleyball	19	31.53	3.76
		Hockey	11	25.82	4.07
		Wrestling	10	27.70	5.10
	Officials	Volleyball	9	36.33	8.59
		Hockey	10	37.00	4.76
		Wrestling	11	31.46	5.45

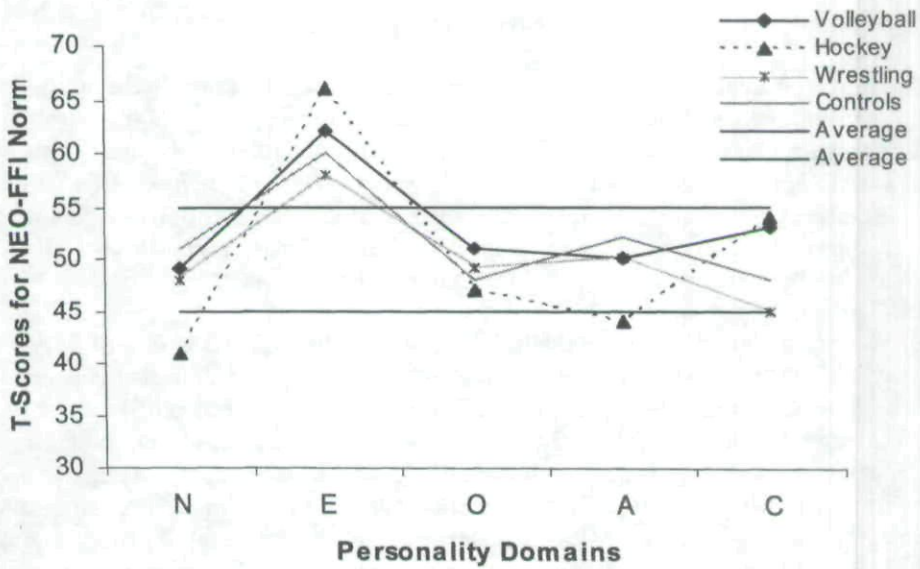


Figure 1. Plot of officials' self reports on each domain of the NEO-FFI compared to the norms.

General Discussion

The results of Study 1 revealed that contrary to our hypothesis, there were no differences on the self-report personality ratings on the NEO-FFI among officials in volleyball, hockey, or wrestling, and that these the officials as a group did not differ from either a contrast group of kinesiology students or from the average range of the NEO-FFI norms. An exception was on the personality domain of Extraversion, where officials rated themselves higher than average as compared to the NEO-FFI norms. This finding that officials do report higher rates of extraversion has been found in numerous other studies (e.g. Sinclair, 1975; Fratzke, 1975; Ittenbach & Eller, 1988).

Because different studies have used different personality measures it is difficult to directly compare the results with past research. However, these results show that in general, referees are just like "average" people. This lends support to the suggestion of Taylor et al., (1990) that currently active officials might use effective coping strategies to combat the stress and burnout that other average people might experience if subjected to the same pressure and negative treatment involved in officiating. Furthermore, given that the majority of stress and burnout is experienced by younger, less experienced officials (Taylor et al.; Goldsmith & Williams, 1992) it is possible that these newer, also average individuals who lack such coping strategies choose to quit officiating, thus contributing to the high rates of turnover.

The results of Study 2 supported our second hypothesis as the perceptions of athletes and fans of officials' personality were less favourable across all of the personality domains as compared to officials' self-report ratings. This suggests that athletes and fans hold fairly pervasive negative attitudes about referees as the NEO-FFI assesses general personality and is not sport-specific. In this sense, the negative evaluations of officials reported by Dickson (2002) and Wann, Matcalf, Brewer, and Whiteside (2000) can be extended to include general personality traits whereby athletes and fans assume that officials are highly neurotic, not very extraverted, not open to experience or imaginative, and not very agreeable or conscientious as a group. While these evaluations held across sports, it was also apparent that the greatest discrepancy in ratings existed within hockey. For this sport, the more favourably officials rated themselves on Neuroticism, Extraversion, and Conscientiousness, the less favourably they were rated by athletes.

One explanation for these results is related to the oft cited Fundamental Attribution Error (Ross, 1977): that one's own negative behaviour is often attributed to situational variables while the behaviour of others is attributed to stable personality characteristics. It may be that this cognitive bias extends to the sport context such that the behaviour of coaches and athletes – considered the essential first and second dimensions – is excused by the culture of

the sport, but official's behaviour is perceived to be a function of his/her stable personality. When the inevitable friction arises periodically between these parties, the 'role' behaviour of the coach and the 'role' behaviour of the official serve to strengthen these misconceptions, leading to increased friction and more ingrained negative attitudes. For example, a coach may argue with an official over a call and justify his or her behaviour according to a strategy or game tactic. The official may respond by standing his/her ground on the call more emphatically, as the role of a good official includes not being unduly influenced by the behaviour of a coach. The coach (and athletes) might perceive the official's behaviour as evidence that he/she is inflexible or disagreeable; failing to take into account the situation that he/she was put into. The next time that this referee is involved in a match with this team, similar exchanges might take place that serve to strengthen the prevailing attitudes.

This explanation is consistent with research conducted by Wann, Carlson, & Schrader (1999) on hostile and instrumental aggression among sport spectators. Hostile spectator aggression involves violent actions that are motivated by anger with the goal of harming another person. Instrumental spectator aggression refers to actions intended to harm another person with the goal of achieving a result other than the victim's suffering. Hostile aggression tends to be reactive while instrumental aggression tends to be proactive (Wann, Schrader, & Carlson, 2000).

In their 2000 study, Wann et al. found that participants were more likely to direct their aggression toward officials than the opposition and that this aggression was more likely to be hostile than instrumental. Interestingly, the highest level of aggression was the hostile aggression reported by the hockey spectators. The authors speculate that this type and level of aggression towards officials underscores the stressful nature of sport officiating as hostile aggression would heighten officials' anxiety about being the target of such malice, anger, and cruelty (Berkowitz, 1993).

Using the current framework, hostile aggression might result from spectators' attribution bias; fans assume that the behaviour of officials is due to their negative personality characteristics and so they react with hostility towards them. Meanwhile, fans use more instrumental aggression toward the opposition because they perceive the opposition's behaviour as situation-specific.

An implication of this interpretation is that athletes, coaches, and fans should be made aware of their attributions, in part by increasing the interaction between players, coaches and officials outside of the game situation. Similar to the recommendations made regarding group prejudice (Berry, Kalin, & Taylor, 1997) as these groups get to know each other in a social context, they will be more understanding of each other's role behaviour during the game. With fewer altercations come more enjoyable interactions and lower attrition rates among officials.

While we believe that the results of this study are valid, there are alternate explanations for the findings. It is possible that the discrepancy between the scores for officials and athletes is due to officials bolstering their ratings of themselves. In this sense, athletes may be completely accurate in their assessment while officials may have exaggerated their own personality traits in order to appear more favourable than they actually are. However, this possibility is doubtful given the results of Study 1; that is, that officials scored in the average range on all domains except Extraversion, which has been a consistent finding. It is more likely that if this group was going to try to appear better than they are, they would have produced better than average scores on more than one domain.

Second, it should be recognized that while we attempted to equate the measures as much as possible for comparison purposes, we did compare self-versus-other reports of personality in Study 2. It is possible that consistent with a common finding in social psychology, participants might have rated themselves higher than they would rate others, no matter who the other group was. Perhaps future research should include a control 'other' group, such as other athletes in the same sport, in order to eliminate the self-other bias. However, given that the athlete versus official discrepancies were so large and pervasive across all domains, it is more likely that they did represent a real difference in perception.

Third, it is possible that demand characteristics did come into play in this study, as there was no deception regarding the nature of the investigation. Athletes and fans might have assumed that the investigators wanted negative images of officials, and reported them as such. Future research should attempt to eliminate this possibility by including reverse demand characteristics (such as presenting oneself as an official who wants to show that officials are great). However, the possibility of demand characteristics is a realistic confound in almost all psychological research.

One of the shortcomings of our study was that we did not assess the attributions of spectators during the sporting events, but rather considered kinesiology students as "sport fans". Future studies concerned with spectator behaviour should be context-specific, possibly by using the methods similar to Wann et al. (2000). Research might investigate whether spectator behaviour toward officials is dependent on the type of sport (team or individual), as well as the outcome of the game.

A second shortcoming was that we investigated male officials and male athletes only. This was because there were not enough female officials for analysis in this study; however future research should attempt to investigate a) the personality characteristics of female officials; b) how female athletes perceive these officials and c) how male athletes perceive female officials. Given our explanations regarding role-related behaviour, it would be very interesting to see how females are perceived in such gender-discrepant roles.

Finally, while it is evident from anecdotal reports and this study that athletes and fans hold negative attitudes toward officials, future research should investigate the perceptions of officials towards coaches and athletes. It may become apparent that both groups are guilty of the fundamental attribution error and that interventions are necessary from both directions.

Conclusion

The results of this study indicate that volleyball, wrestling, and hockey officials all possess the same degree of personality characteristics as the normal population. However, they are perceived by athletes and fans as being deficient in all of the domains of Extraversion, Openness, Agreeableness and Conscientiousness, while possessing an excess of Neuroticism. Because officials are an integral part of sport at all levels of competition, addressing these negative attitudes and correcting such misperceptions should help to curb the increasing and alarming rates of burnout and turnover among referees.

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