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Theoretical analysis of referee bias in youth hockey

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A THEORETICAL ANALYSIS OF REFEREE BIAS IN YOUTH HOCKEY

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ABSTRACT

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This research addressed the issue of youth hockey referee bias demonstrated throughout 286 CCYHL Squirt A and C league games and the 2009-2010 CDYHL Squirt B league season games. Structural functionalism, cognitive dissonance, and exchange theory were used to explain a probable rationale for biased referee behavior. A *T*-test revealed a mean of .012, suggesting penalty calls were equalized during squirt level hockey games (age 9 through 10). A logistic regression analysis was incorporated to uncover predictable patterns of penalty calls made by referees based on penalty differential, score difference, and home team lead. Findings indicate that teams with the least amount of penalties had a 69.26 percent chance of incurring the next penalty disadvantage. Score differential seemed to have no effect on penalty patterns except in a situation of home team lead where the probability of receiving the next penalty increased to 57.39 percent. Findings of this research seemed to dismiss any away-team bias. In fact, this research showed support for the opposite; home teams actually obtained more penalty calls than away-teams. Considering penalties were equalized and a predictable penalty calling pattern was established, it seemed fitting that youth hockey referees' officiating decisions were biased. The implications of this research clearly identifies that players and coaches could modify their strategies and play to improve their team's chances of winning a hockey game according to the equalization penalty results.

Equalization of penalties is also of great concern for referees. Intervention in the training process of referees is warranted to remove bias in officiating.

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CHAPTER I

INTRODUCTION

Sports participation is common throughout human history. Sports are thought to encourage a vast number of societal skills and norms valuable to the development of society's youth including teamwork, fitness, competition, endurance, rules, goal setting/attainment, self-esteem, correction of error, fair-play, and ethics. In upholding such valuable skills and norms, it is the charge of the sporting official to enforce rules while ensuring equal treatment between competing teams. However, a sporting official making in-game decisions based on personal bias or social pressure is problematic in the development of youth playing sports. The importance of youth socialization through athletics leads to the following assertion: in a manifestation of fairness, youth hockey referees tend to equalize penalties.

This research examined the 2009-2010 season of Squirt B, Continental Divide Youth Hockey League (CDYHL) hockey games. In addition, the research mutually included the Squirt A and C divisions of the Colorado Competitive Youth Hockey League (CCYHL) from the 2008-2009 hockey season games. Assessing the contrast of penalties distributed to each team per game allowed an analysis of the fairness of penalty-calling. Findings in youth hockey suggested that while referees appeared to be fair, such attempts led to an equalizing bias. To date, no research specifically analyzes youth

hockey referees and few research studies are documented in the arena of sporting official bias.

CHAPTER II

REVIEW OF LITERATURE

Sociological Perspective of Referees and Officials

Culture is gained through the understanding of "values," which are aspired to during human existence and development (Henslin 2007). Sports are a distinctive culture that can be separated into two types: individual (golf, gymnastics, swimming) and team (football, soccer, basketball, baseball, hockey and many others). Each sport has a distinct set of norms or rules governing the behavior of its members. Also, each sport incorporates roles and titles for members such as players, coaches, referees, parents, forward, defense, and spectators. By enforcing the rules of a particular sport, referees fulfill their duty to socialize youth players. This enforcement of game expectations socializes youth by reinforcing the idea that life, like sport, comes with a set of rules. Authority figures such as judges, police, and referees all have the same obligation to enforce the norms of society without bias to maintain social order. If authority figures are not fair in assessing the same behavior, then people would not properly learn acceptable behavior. The main purpose of a youth hockey official is to be a teacher. Such individuals socialize members of the culture to the rules of the game (USA Hockey Inc. 2010). However, humans are prone to make mistakes. If a referee misjudges one call, then a make-up call for the opposite team is still not justified (Hammond 2008).

Two wrongs do not make a right in the socialization process. Ethical consideration is of the utmost importance when teaching a new generation how to "play by the rules" as this ability will influence proper function and adjustment to a culture or society. Regardless, the goal of youth hockey referees is to prove that life is not fair and make-up classes happen in the game of life too.

Consistent with structural functionalism, a referee performs both "manifest function," aimed objectives and "latent function," off-target objectives in making correct calls (Merton and Nisbet 1971). For example, "roughing" during a hockey game is unacceptable especially at youth levels; if such is the case, a referee is obligated to call a penalty. The actual penalty call embodies a manifest function as "roughing" is against the rules of the hockey game and a referee's primary duty is to uphold the rules of the game. A latent function exists, however, and is exemplified by the referee fulfilling his or her duty to uphold the group culture and properly socialize youth. The "roughing" penalty dealt by one player onto another is an act of "deviance" or defiance, which threatens the structure and functionality of hockey (Merton and Nisbet 1971). If a referee does not act to sanction deviance in a fair manner, then the structure risks becoming a "dysfunction" which severs the connection between culture and social actions (Merton and Nisbet 1971). Likewise, a referee must not call a penalty that does not take place. The same ethical consideration should be used when judging a home team player verse an away team player. There should be no difference found between home and away teams when analyzed by video tapes of on-ice officials in the National Hockey League (NHL) (Dennis, Caron, and Loughead 2002). A referee is one component to the composition of

the youth hockey structure. If the referee makes too many mistakes, then the structure is no longer functional.

Rationalization of Referees and Officials

Blau and Schwartz (1964) posits that costs and benefits are considered before "rationally motivating" individuals to make social exchanges. Exchanges occur between referees and all members of the sports culture. Referees and players, referees and coaches, referees and parents, and referees and spectators all engage in exchange. In soccer, 15.5 percent fewer fouls are called on the home team than the away team (Nevill, Balmer, and Williams 2002). The referee makes fewer foul calls for the home team, presumably in the hopeful exchange of less criticism from spectators. Another facet of exchange theory is the rule of "reciprocity" (Blau and Schwartz 1964). Reciprocity is the idea of an equal exchange between two or more parties. For example, a person might give a grocery store a dollar in exchange for a loaf of bread if both parties view the exchange as fair. Perhaps the coaches and players know that while at home they may enjoy the benefits of fewer infractions than the away team. They also know that this advantage will disappear as they travel to play at a competitor's venue. According to exchange theory, a reciprocal advantage for both teams exists in such an instance.

The home team in soccer receives extra stoppage time if behind in score, less if ahead, but no difference in time if the score is lopsided (Garicano, Palacios-Huerta, and Prendergast 2005). Once again, an exchange is shown between multiple actors in the game. In order to uphold the conditions of social exchange theory, the exchange taking place must be "fair" (Blau and Schwartz 1964). Even though the actual action of home team bias is not fair, the referee must derive an equal benefit from the exchange.

Exchange may come in many forms such as fan affiliation with the home team or in financial compensation. If home team favoritism leads to no benefit for the referee, then a referee would be hard pressed to continue participation in the exchange.

Social-Psychological Perspective on Referees and Officials

According to Festinger (1964), people are motivated by cognitive dissonance. Cognitive dissonance is the sensation of strain on a person's brain holding two competing thoughts, ideas, or norms. Humans tend to want to reduce strain by excessively agreeing with one particular cognition over another and justifying the significance of the decision (Aronson 2004). In a study conducted by Boyko, Boyko, and Boyko (2007), crowd noise at soccer games increased referee uncertainty in subjective calls, leading to a bias in yellow and red cards awarded to the away team. However, Boykos' research (2007) did not find any preferential treatment in objective calls such as goals scored. In the case of Boykos' study, referees in all probability were experiencing cognitive dissonance, validated by the crowd's response to the on-field decision.

In a similar study on National Collegiate Athletic Association (NCAA) basketball, Anderson and Pierce (2009) found the team with the most fouls was least likely to incur the next foul, equaling out the foul count. Referees experience dissonance between a team with a high foul count and an attempt to be unbiased, leading to good rationale for equalization of foul calls to maintain a fair game. The team leading in points also has an increased probability of receiving the next foul call (Anderson and Pierce 2009). Once again, the referees' endeavor is to teach fairness; equalizing the game through foul calls supports preferential cognition of one over another. Anderson and

Pierce (2009) found a significant bias against the away team. When a visiting team leads in scores, the likelihood of acquiring the next foul is 70 percent.

No data have been collected that focus on the existence of mercy bias committed by hockey referees in an attempt to be fair. This study investigated the equalization of penalties to see if bias was apparent and intervention was warranted in referee training and game calling execution. Most importantly, this research added to the applied value of sociological and social-psychological theory.

Score sheet data from the squirt CDYHL and CCYHL hockey leagues were used in this study to observe and identify patterns in biased penalty calls. Specifically, this research project asked the following research questions:

Q1 Is there a higher probability that penalties will be issued to the youth hockey team with the least amount of penalties, unless there is a severely lopsided score?

Q2 Do hockey teams in the lead have a higher probability of receiving the next penalty?

Q3 Is there a penalty bias against the visiting team and an advantage for the home youth hockey team except in the case of a blow-out lead?

Q4 Is there a predictable pattern in which penalties are issued to youth hockey teams?

CHAPTER III

METHOD

Measurement of Variables

This study examined if a relationship existed between the number of penalties called and the order in which penalties occurred in youth hockey games. This study also controlled for the severity of both types of penalties--minor and major. Minor penalties incur fewer penalized *minutes* than major penalties, so the difference in severity might be notable for penalty sequencing. However, after collecting the data from all three leagues, there were no major penalty infractions represented in the data set as a whole. Therefore, only minor penalties were committed in all hockey games. It was hypothesized that difference in score, sequence of penalties, and game location were indicators in predicting which team was more likely to incur the next penalty. Included in the data (explained in further detail below) were home and away teams, current score, the team receiving penalty sanctions, specific team in league, and when the penalty occurred in the game course.

Sample

The data included all games played by the Squirt B Continental Divide Youth Hockey League (CDYHL) teams in the 2009-2010 hockey season, and the Squirt A and C Colorado Competitive Youth Hockey League games in 2008-2009. The Squirt age division (9 and 10 year olds) was chosen specifically because previous studies examined

NCAA Division I and professional athletes. As skill levels differ among Squirt teams, sampling different skill levels removed the possibility of skill level affecting penalty progression and bias. The CCYHL Squirt A league is comprised of 12 teams: each play 20 to 23 games within their seasons and a league total of 96 games. In the Squirt B CDYHL division, nine teams play 16 games exclusively against each other, totaling 72 league games. Each team plays eight home games and eight away games. The Squirt C CCYHL league contains 11 teams playing 20 to 23 games against each other for a league total of 117 games. All league samples included the entire population of games for the youth hockey league and in the case of the CDYHL, equally represented teams on home ice. By examining the entire population of games, generalizations about each youth hockey league become more robust and hold more validity.

All data for this CDYHL and CCYHL study were extracted from the box scores gathered from www.pointstreak.com. This website compiles all score sheet data after every youth hockey game has been completed. An example of the box score data for each league is provided in the appendixes: Appendix A is an illustration of a CCYHL Squirt A box score, Appendix B provides a picture of a CDYHL Squirt B box score, and Appendix C is a graphic of a CCYHL Squirt C box score. According to Patrick Miller (Greeley Youth Hockey League Pointstreak.com administrator) (2010), information about particular hockey games is entered by home team administrators within a given hockey organization and the data are checked at the end of every game by attending referees for accuracy. In addition, each league has an administrator who makes any necessary changes to data posted on the website (Miller 2010). Pointstreak.com employs

the use of some built-in checks and balances ensuring game data are as precise and truthful as possible at all times.

Data Analysis

Two statistical tests were applied to the data in order to analyze the hypotheses. All 286 Squirt games had the penalty differential calculated at the end of each game. A *T*-test was used to compare the mean of penalty difference (pendiff) with that of the expected. If the mean was close to zero, that would support the equalization of penalties. Alternatively, a mean that positively deviated from zero represented more penalties for the home teams or a negative deviation corresponded to more penalties for the away teams.

Next, score differential, penalty differential, and home lead were set in a logistic regression to test the probability of the next penalty call being designated to a particular team. The dependent variable was "dep" (representing penalties on the home team)--where 0 represented a penalty charged to the away team and a 1 represented a penalty charged to the home team. The first independent variable ("pen_diff") represented the total number of home penalties minus the away penalties before the current penalty was issued. If the number of home penalties surpassed that of the visiting team, the number would be represented by a positive number. The "pen_diff" variable was integrated further into a dummy variable. One dummy variable ("hm_lead") referred to the home team winning the game at the time the penalty occurred, which was coded 1 for ahead in score and 0 for tie or trailing in score. The finally independent variable used was "score_net," which represented the score of the game. Positive numbers represented the

amount of points scored by the home team and negative numbers represented the points scored by the away team.

Procedures

Data were retrieved from Pointstreak.com CDYHL and CCYHL Squirt A, B, and C schedule pages and then coded for entry into SPSS. The schedule pages had all box score information because all games in the 2008-2009 and 2009-2010 seasons had already taken place. Data collection began upon obtaining approval from the University of Northern Colorado Institutional Review Board (IRB).

Previous research of NCAA basketball foul bias using box score data analysis was effective in studying referee bias in this research (Anderson and Pierce 2009). This research served as a pilot study for examining sports-officiating bias because the literature review established such procedures for referee bias research. However, this study was reorganized to fit youth hockey as opposed to college and professional sports.

The data should be highly valid, considering the checks and balances accounted for Pointstreak.com described in the sampling section. Numerous advantages existed when using Pointstreak.com as a secondary data source: a reduction in costs typical of other research techniques, availability of data through an open and free web-based location, and a high level of reliable data (as mentioned previously).

While the advantages associated with using Pointstreak.com as a tool in research augmented the efficiency of this investigation, all research suffers disadvantages of some sort. This research was not exempt of disadvantages. There were a few notable disadvantages to using a web-based data source for any research. One drawback related to the fact that youth hockey game data were not collected for the specific purpose of

researching referee bias. The Pointstreak.com data collection was instead intended to record the results of youth hockey games for public viewings. Additionally, analyses performed with the pointstreak.com data were limited to the original collection. Finally, in ideal research, an investigator would have access to referee identifiers needed to track referees and their respective penalty calling behavior. Unfortunately for this research, there were too many referees to contribute to any consistent pattern. Thus, such data were removed prior to the analysis and thus disregarded within this research.

CHAPTER IV

RESULTS

The first simple *t*-test showed a mean of .012 indicating two different ideas (see Tables 1 and 2). First, penalties were extremely close to being exactly equalized (mean of zero) throughout each hockey game (see Figure 1). Second, since the mean was a positive number, the home teams in the youth hockey games actually received more penalties than the away teams. According to exchange theory, a reciprocal advantage for both teams existed in such an instance indicating a positive bias for away teams. Due to the bias favoring the visiting team, this research failed to reject the null hypothesis because the hypothesis was "no difference" and found that a penalty bias against the away team and an advantage for the home youth hockey team did indeed exist. The notion of home team favoritism might be dismissed for this population.

Table 1. One-Sample Statistic of Total Penalties for Home and Away Teams

	N	Mean	Std. Deviation	Std. Error Mean
net_penalties	1275	.0102	1.72407	.04828

Table 2. One-Sample Test of Total Penalties for Home and Away Teams

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
net_penalties	.211	1274	.833	.01020	-.0845	.1049

Test Value = 0

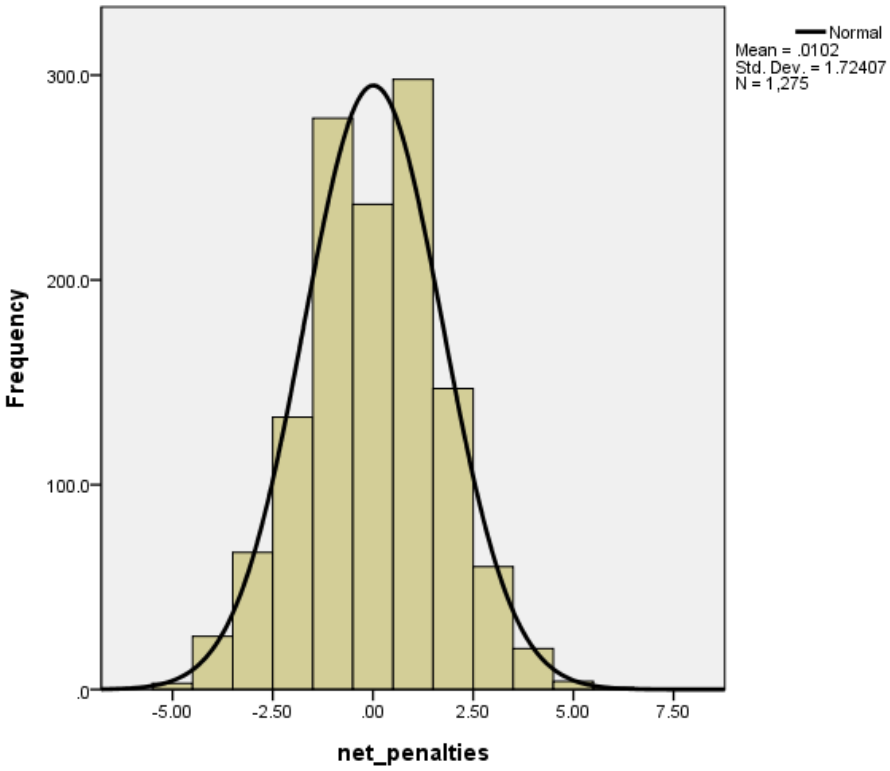

Figure 1. The Mean and Standard Deviation of Penalty Differential.

Consistent with the previous findings of the initial *t*-test, the first hypothesis suggested that a higher probability of penalties was issued to the youth hockey team

holding the fewest penalties unless there was a severely lopsided score. It seemed logical that referees would equalize penalties in the case of a lopsided score, as a mercy bias, to improve the losing team's chances of scoring with a player advantage. Running a logistic regression model improved the predictability of penalty called in Squirt youth hockey games from 50.4 percent to 75.5 percent. The model fits very well and the omnibus tests of model coefficients all had a significance level of 0.00 (see Table 3). Knowing that the model fits well was encouraging as it allowed for confidence in the predictor variables in the equation. The variable "pen_diff" placed penalty call difference in chronological order for each game in the data set. The logistic regression model produced an Exp (B) of 2.253 with a significance level of 0.00 (see Table 4). Exp (B) is an indication of a variables change in odds falling into the "Yes" category. Odds ratio goes from 0 to 1 and assists in prediction of future events. An odd ratio of 1 would be consistent with a prediction of 50 percent. This means the team with the least amount of penalties has a 69.26 percent chance of incurring the next penalty disadvantage. The null hypothesis was rejected for the first hypothesis. There is a higher probability that penalties were issued to youth hockey teams holding the fewest amount of penalties.

Table 3. Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	388.468	3	.000**
	Block	388.468	3	.000**
	Model	388.468	3	.000**

**Significant at 1% level

The second hypothesis suggested that the hockey teams in the lead had a higher probability of receiving the next penalty. "Score_net" consisted of a chronological running total of the score differential for each game in the data set. With a significance level of .063, the variable was approaching significance. However, the Exp (B) was only 1.019 (see Table 4) and would have left the predictability about that of a coin toss. It is safe to contend that based on score differential alone, "score_net" had little if any effect on penalties called. While the variable "score_net" did not improve penalty predictability, it did indicate that referees penalty decisions were not influenced by the current game score. However, when the variable of "hm_lead" was placed into the logistic regression model, predictability of penalties based on the home team leading the game improved. The significance level of .042 for "hm_lead" was acceptable at the .05 level. The odds ratio for "hm_lead" was Exp (B) 1.347 and improved predictability to 57.39 percent, e.g., when the home team led in scores, the chance they would incur the next penalty infraction occurred 57.39 percent of the time. The second hypothesis rejected the null hypothesis for home team leads but failed to reject the null hypothesis for away team leads. The third hypothesis failed to reject the null due to the fact that penalties were almost perfectly equalized with home teams actually receiving more penalties regardless of game score.

Table 4. Predictability of Penalty Differential, Score Differential, and Home Lead

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	pen_diff	.813	.051	257.863	1	.000**	2.255
	score_net	.019	.010	3.448	1	.063	1.019
	hmlead	.297	.146	4.105	1	.043*	1.345
	Constant	-.103	.084	1.493	1	.222	.902

a. Variable(s) entered on step 1: pen_diff, score_net, hmlead.
* Significant at 5% level
** Significant at 1% level

Finally, hypothesis four suggested that there was a predictable pattern in which penalties were issued to youth hockey teams. The most predictable pattern was that penalties were equalized, especially when the home team was leading and had the least amount of penalties. The research rejected the null hypothesis for hypothesis four based on "pen_diff" and "hm_lead." Surprisingly, score differential had no predictable pattern, i.e., the odds ratio was about 1.00 or a predictability of 50.0 percent. There was still a large amount of predictability pattern error as can be examined in the following chapter.

CHAPTER V

DISCUSSION

This research analyzed 286 CCYHL Squirt A and C league games, and CDYHL Squirt B 2009-2010 league games from box score archival data to assess youth hockey referee bias. Results noticeably suggested either conscious or unconscious referee bias throughout Colorado Squirt hockey leagues games in the 2009-2010 seasons. Most conspicuously was the equalization of penalties. Given that the team with the least amount of penalties prior to a penalty call was 69.26 percent more likely to sustain the next penalty, a substantial indicator of the presence of referee bias seemed to exist in youth hockey. This result is congruent with previous research conducted on NCAA basketball (Anderson and Pierce 2009). However, the finding that 57.39 percent of home teams incur penalties when they are in the lead seems to be inconsistent with previous research (Nevill et al. 2002). According to previous research, home and away teams should have an increase predictability of foul calls based on score differential (Anderson and Pierce 2009), although that appeared to be both statistically insignificant and predictably insignificant. In addition, despite the score having no effect on referee penalty predictability, that meant referees were not biased based on game score. This discussion section examines referee bias implications, application of sociological and social-psychological theories, and further research and triangulation of youth hockey referee bias.

Implications

The implications of referee bias leading to the equalization of penalties are noteworthy for youth hockey coaches, players, and referees. First, a coach can expect that the penalty calls in any given game are going to be equalized at some point. This means coaches should put an extra emphasis on scoring during penalty advantages when leading in the penalty count, as the coach should expect that his or her team is highly likely to incur the next penalty disadvantage. On the other hand, a coach can feel somewhat comfortable in knowing they will more than likely benefit from a penalty advantage at some point later in the game if they had been leading in penalty disadvantages. Second, players can change their style of play to be more aggressive when leading in penalty calls because they would be less likely to be issued a penalty by the referee. Players could also tone down aggressive play when trailing in penalty calls to avoid any penalty infraction. This research made clear the concept that players and coaches could modify their strategies and play to better their team's chances of winning a hockey game. Third, equalization of penalties is of great concern to referees. Intervention in the training process of referees is necessary to remove the bias in officiating.

The implications of the home team leading bias in collecting the next penalty call were negligible. As a home player or coach, you would not strategize to maintain a tied score or losing score just to make sure you did not obtain the next penalty disadvantage. Furthermore, the predictability of the odds ratio improved from 50.0 percent to 57.39 percent. As far as coaching and playing strategy, home team lead bias had no effect. The reason is if a team is winning a hockey game either home or away, that team would not

want to give the other team a penalty advantage. A player advantage due to a penalty gives the opponent a better chance of tying the game or closing the score differential between teams. If the predictability was greater, then there might be greater concern for coaches and players. However, if the home team was leading the game in both score and penalty count, it would be a wise decision for players and coaching staff to strategize a less aggressive play on the ice.

Application of Sociological and Social-Psychological Theories

From a sociological perspective, the idea and importance of values were outlined prior to the study. Both USA Hockey (2010) and Dennis et al. (2002) contend that a referee's duty is to uphold the rules of the game, no matter the situation. This means a penalty is a penalty and a non-penalty is a non-penalty. According to USA Hockey, youth referees are supposed to be secondary agents of socialization by teaching the game of hockey (USA Hockey 2010). The equalization of penalties based on penalty differential is problematic and threatens the structure of hockey. This dysfunction is most troubling for players and coaches but could also affect parents and fans. What is the big deal if a penalty is equalized? Players might get the idea that certain levels of aggression or actions are acceptable in youth hockey and may lead to serious injury or application of such aggression in other situations. Parents, coaches, and spectators may encourage foul play among malleable youth minds that may lead to deplorable hockey violence. It is of the upmost importance for both safety and reputation of the game of hockey that any bias is removed from the game even if the bias is equalizing penalties in an attempt to be fair.

Transitioning to the social-psychological theory of cognitive dissonance (sensation of strain on a person's brain holding two competing thoughts, ideas, or norms),

it seems logical that referees would have internal conflict between actual penalties and non penalties. It is extremely unlikely, given all the different teams in the three different leagues when matched against one another, that each team would display the same level of aggression, foul play, and infractions in order to equalize penalties calls at the end of games. A more practical explanation lies in Festinger's (1964) proven theory of cognitive dissonance. Referees tend to want to reduce strain by excessively agreeing with the cognition of penalty differential over actual game infractions and justify the significance of the decision with fair or equal treatment of each team (Aronson 2004). In addition to cognitive dissonance, exchange theory plays well into the equalization of penalties. Spectators, parents, players, and coaches understand that referees will give near equal advantages and disadvantages to both home and away sides. The exchange is reciprocal, and further sets both sides at ease prior, during, and after a contest. Cognitive dissonance and exchange theory may be beneficial in explaining youth hockey referee behavior when calling penalties.

It is noteworthy that more than one possible rationale exists to explain the trends elucidated in this paper. The most plausible rationale is due to the fact that youth referees with the least experience start refereeing at the Squirt level. Less experienced referees are more prone to bad penalty calls and misjudgments. Another possibility is that players and coaches are adjusting to game situations (McGuire, Courneya,Widmeyer, and Carron 1992). Given that most Squirt hockey players are in their first few years of playing hockey, player adjustment to the game situation seems improbable. Another possibility has to do with the idea of flow. Flow is based on the amount of stoppages in the game either for penalties or minor infractions like off-sides or icing. A referee may be more or

less inclined to go with the flow of the game, which could have an effect on penalty distribution. The best way to improve upon explanations for the phenomenon of youth hockey referee bias is to triangulate the study with further qualitative research.

Further Research and Triangulation of Youth Hockey Referee Bias

Qualitative research needs to be conducted in two ways. First, referees need to be interviewed about the possibility of cognitive dissonance, make-up calls, misjudgments, and experience level. Second, videotaping youth hockey games and analyzing game content with highly trained referees for level of correctness in penalty calling would be another beneficial form of additional qualitative research. By triangulating further research with both quantitative and qualitative, referee bias and the exact cause of bias may be further documented and analyzed.

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APPENDIX A

EXAMPLE OF CCYHL SQUIRT A BOX SCORE DATA

HOME : Littleton Squirt A

#	NAME
G33	[redacted]
G31	[redacted]
4	[redacted]
8	[redacted]
9	[redacted]
10	[redacted]
11	[redacted]
13	[redacted]
14	[redacted]
15	[redacted]
16	[redacted]
18	[redacted]
19	[redacted]
25	[redacted]
40	[redacted]
80	[redacted]
87	[redacted]

Pointstreak.com

Colorado Amateur Hockey Association

Division: **Squirt A**
Rink: Ice Ranch NHL

Date: Sat, Sep 26, 2009
Time: 09:35 a.m.

	1	2	3	TOTAL
Home	1	4	6	**11**
Away	0	0	0	**0**

TOTAL SHOTS	
Home	**51**
Away	**7**

HOME SCORING

#	P	TIME	G	AST	AST2	GT
1	1	1:05	13			
2	2	4:58	13			PP
3	2	6:42	80	87		
4	2	7:12	10			
5	2	7:34	11	15		
6	3	1:36	25			
7	3	4:41	11	15	10	PP
8	3	6:38	25	16		
9	3	7:33	13			
10	3	10:13	80			SH
11	3	11:50	13	87		

AWAY SCORING

#	P	TIME	G	AST	AST2	GT

HOME PENALTIES

P	#	OFFENSE	MIN	START
1	25	Slashing	2	8:52
2	4	Body Checking	2	5:43
3	9	Interference	2	8:28

AWAY PENALTIES

P	#	OFFENSE	MIN	START
2	7	Body Checking	2	2:49
2	41	Holding	2	6:31
3	5	Hooking	2	1:37
3	22	Hooking	2	3:38

HOME GOALIE STATS

NAME	MIN	SHOTS	SAVES
33 [redacted]	36	7	7

COACH SIGNOFF

H. COACH -

X

AST. COACH -

X

REF - [redacted]

X Game Verified

LINE1 - [redacted]

X

LINE2 -

X

AWAY: DU Squirt A

#	NAME
G93	[redacted]
G2	[redacted]
3	[redacted]
5	[redacted]
7	[redacted]
8	[redacted]
14	[redacted]
16	[redacted]
22	[redacted]
38	[redacted]
41	[redacted]
45	[redacted]
52	[redacted]
87	[redacted]

AWAY GOALIE STATS

NAME	MIN	SHOTS	SAVES
93 [redacted]	36	51	40

COACH SIGNOFF

H. COACH -

X

AST. COACH -

X

APPENDIX B

EXAMPLE OF CDYHL SQUIRT B BOX SCORE DATA

HOME : Pubelo

#	NAME
G31	[redacted]
6	[redacted]
21	[redacted]
33	[redacted]
34	[redacted]
35	[redacted]
40	[redacted]
47	[redacted]
48	[redacted]
52	[redacted]
66	[redacted]
99	[redacted]
HC	[redacted]
AC	[redacted]

HOME GOALIE STATS

NAME	MIN	SHOTS	SAVES
31 [redacted]	36	14	12

COACH SIGNOFF

H. COACH - [redacted] (I3)

X

AST. COACH - [redacted] (I2)

X

Pointstreak.com

Colorado Amateur Hockey Association

Division: **Squirt B**
Rink: Pueblo Plaza Ice Arena

Date: Sat, Nov 14, 2009
Time: 10:15 a.m.

	1	2	3	TOTAL
Home	0	2	2	4
Away	0	1	1	2

TOTAL SHOTS	
Home	22
Away	14

HOME SCORING

#	P	TIME	G	AST	AST2	GT
1	2	2:50	35			PP
2	2	6:21	6	48		
3	3	4:42	34	48	6	
4	3	7:09	48	6	34	

AWAY SCORING

#	P	TIME	G	AST	AST2	GT
1	2	2:29	18	22		SH
2	3	3:02	2	22	28	

HOME PENALTIES

P	#	OFFENSE	MIN	START
1	6	Body Checking	2	5:34
2	48	Hooking	2	8:34

AWAY PENALTIES

P	#	OFFENSE	MIN	START
2	44	Interference	2	0:46
3	6	Body Checking	2	9:33

REF - [redacted]	LINE1 - [redacted]	LINE2 -
X Game Verified	X	X

NOTES no notes entered for this game

AWAY: Steamboat

#	NAME
G76	[redacted]
2	[redacted]
6	[redacted]
8	[redacted]
16	[redacted]
18	[redacted]
20	[redacted]
22	[redacted]
28	[redacted]
30	[redacted]
32	[redacted]
36	[redacted]
44	[redacted]
48	[redacted]
50	[redacted]
HC	[redacted]
AC	[redacted]
AC	[redacted]
AC	[redacted]

AWAY GOALIE STATS

NAME	MIN	SHOTS	SAVES
76 [redacted]	36	22	18

COACH SIGNOFF

H. COACH - [redacted]

X

AST. COACH - [redacted]

X

APPENDIX C

EXAMPLE OF CCYHL SQUIRT C BOX SCORE DATA

HOME : Foothills Squirt C

#	NAME
G30	[redacted]
G34	[redacted]
3	[redacted]
8	[redacted]
9	[redacted]
13	[redacted]
14	[redacted]
38	[redacted]
44	[redacted]
48	[redacted]
52	[redacted]
71	[redacted]
80	[redacted]
88	[redacted]
98	[redacted]

Pointstreak.com

Colorado Amateur Hockey Association

AWAY: CSAHA Squirt C

#	NAME
G50	[redacted]
G88	[redacted]
13	[redacted]
21	[redacted]
22	[redacted]
26	[redacted]
30	[redacted]
76	[redacted]
80	[redacted]
87	[redacted]
HC	[redacted]
AC	[redacted]
AC	[redacted]
MG	[redacted]

Division: **Squirt C**
Rink: The Edge Ice East

Date: Sun, Oct 04, 2009
Time: 01:00 p.m.

	1	2	3	TOTAL
Home	1	1	0	2
Away	1	2	2	5

TOTAL SHOTS	
Home	22
Away	26

HOME SCORING

#	P	TIME	G	AST	AST2	GT
1	1	5:49	3	48		
2	2	1:48	98	34		

AWAY SCORING

#	P	TIME	G	AST	AST2	GT
1	1	0:20	76			
2	2	9:52	22			
3	2	11:35	22	13		SH
4	3	4:41	76			
5	3	8:24	22			

HOME PENALTIES

P	#	OFFENSE	MIN	START
3	14	High Sticking	2	4:41

AWAY PENALTIES

P	#	OFFENSE	MIN	START
2	87	Tripping	2	10:11

HOME GOALIE STATS

NAME	MIN	SHOTS	SAVES
30 [redacted]	36	26	21

AWAY GOALIE STATS

NAME	MIN	SHOTS	SAVES
50 [redacted]	36	22	20

COACH SIGNOFF

H. COACH -

X

AST. COACH -

X

COACH SIGNOFF

H. COACH - [redacted]

X

AST. COACH - [redacted]

X

REF - [redacted]

X Game Verified

LINE1 -

X

LINE2 -

X

NOTES no notes entered for this game