

**MEASUREMENT OF PROSOCIAL AND ANTISOCIAL BEHAVIOR
AMONG YOUTH EQUESTRIAN COMPETITORS**

By

Karen L. Waite

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Kinesiology—Doctor of Philosophy

2014

ABSTRACT

MEASUREMENT OF PROSOCIAL AND ANTISOCIAL BEHAVIOR AMONG YOUTH EQUESTRIAN COMPETITORS

By

Karen L. Waite

According to the American Horse Council (2005), there are approximately 9.2 million horses in the United States. Contrary to popular belief, more horses are shown (i.e., compared to one another in various classes of conformation or skill) than raced. While the number and scope of studies of competitive equestrian activity is limited, the general areas of concern in equestrian sport parallel those in more traditional sports. Based on a survey conducted at a Michigan State University Extension workshop on horse show ethics, the top five ethical concerns pertaining to horse shows were matters of sportsmanship, horse welfare issues, violations of rules and regulations, concerns about fair judging, and parenting issues (Skelly, Heleski, Tomlinson, Zanella, & Waite, 2005). There is a disconnect, however, between the often held belief that participation in competitive equine activity teaches sportsmanship and the fact that the equine industry is calling for improvements in sportsmanship behavior and animal treatment at horse shows. Therefore, the research objectives of this dissertation were to (a) quantify the incidence of aggressive riding behaviors of youth horse show participants, (b) quantify the conflict, stress, and frustration behaviors of the horses they ride, and (c) determine the relationship between aggressive riding and horse behavior. The objectives of the second study were to (a) develop a preliminary scale for measuring prosocial and antisocial behavior in equestrian sport and (b) to verify the psychometric properties of such a scale. The first study examined the frequency with which aggressive riding was used in a youth cloverleaf barrel race, and questioned the belief that the use of aggressive riding techniques, considered by some to be poor sportsmanship, would

result in a horse running faster, thus improving final run time. These data suggest that across all horse and rider teams studied, there was wide variation in the employment of aggressive riding tactics, but there was no relationship between aggressive riding technique and final run time.

There were small but significant relationships between the use of aggressive riding technique and conflict/stress/irritation behaviors displayed by the horse, however. The second study focused on developing a preliminary scale to define and measure sportsmanship in competitive youth equestrian events. The research protocol in this study used an approach developed by Kavussanu and Boardley (2009), while keeping with the views of Vallerand, Deshaies, Cuerrier, Brière, and Pelletier (1996), who suggested that “athletes should be in a prime position to identify the nature of the sportsmanship concept” (p. 91). The development of the Prosocial and Antisocial Behavior in Equestrian Sport (PABES) scale described in this dissertation went further in that it also included the perspectives of horse judges and show managers, parents of equestrian competitors, and coaches, trainers, and 4-H leaders. This process resulted in a noteworthy start in the development of the scale; however, further work is needed to develop items to appropriately measure the construct of “respect for the horse.” In addition, any modified scale should be retested with a sample of youth participating at introductory or 4-H levels, which may improve the fit of the model overall. Given the broad scope of age, competitive experience level, and differences in discipline, future tools to measure sportsmanship in equestrian sport may start with a common, respect-based definition, but will need to focus on specific aspects of a specific discipline or audience to develop a valid instrument.

“You’re not working on the horse, you’re working on yourself.” – Ray Hunt
Dedicated to Candy, Cindy, Patsy, Truman, and Chip,
for all that you’ve taught me about horses *and* myself.

ACKNOWLEDGEMENTS

I would first like to thank my advisor, Dr. Martha Ewing, for her unceasing support, patience, and willingness to take on an unorthodox graduate student. I was very fortunate to find an advisor who understood and encouraged my goals, and who was also willing to mentor a student who could not pursue a degree full time. Finally, she even has a soft spot for horses, which made everything just that much easier. Her guidance and friendship is greatly appreciated, and words probably will never do that appreciation justice.

I would also like to thank my committee members for their support throughout my program. Dr. Dan Gould, for challenging and encouraging me at every step along the way. Dr. Camie Heleski, for convincing me that I really could “do this,” for always asking thought-provoking questions, for helping me to guard my time and (try to) stay focused, and for her friendship throughout the years. Dr. Janice Swanson, for inspiring me to pursue my interest in animal behavior and welfare from a unique and different perspective, and for always supporting me as a supervisor, mentor and friend.

I also fully recognize that nothing I have accomplished in the past 18 years would have been possible without the love and support of Tim, who has made it easy to pursue every dream I’ve had during that period. I truly am who I am because of you, Tim, and I can’t thank you enough. I also have to thank my mom, who has laid all of the groundwork for everything I have been able to accomplish, and whose love, support and sense of humor inspire me daily. Thank you, too, to Mary Ann and Bill Davis for providing me with the encouragement and opportunity to start showing horses again, and for allowing us to purchase the farm, which provided inspiration to keep forging ahead when things got rough.

In addition to my family, I have to thank my “work family” for making the pursuit of a doctorate a possibility. Carla McLachlan, you make every day enjoyable, and your friendship is a key part of my life for which I am extremely thankful. You are indeed my “very best good friend.” Taylor Fabus, as I’ve told you before, part of this degree was earned by you because I never would have been able to complete it without your willingness to take on additional responsibilities, and your sense of humor always keeps me going. Thank you so much. Special thanks also to John (and Pam) Shelle for your inspiration, encouragement, and support through the years. You have had such a positive impact on so many lives, and while I can’t imagine an MSU Animal Science Department without you in it, I will do my best to carry on your philosophy for as long as I am able. Paula Hitzler, I also thank you for your friendship, and for your willingness to ask the hard, thought-provoking questions. Brian Nielsen, Julie Chapin, and Tom Coon, thank you, too, for all of your encouragement and support. Finally, I would also like to thank Karen Plaut and Margaret Benson for being my professional mentors throughout the years, even after you left for other schools.

TABLE OF CONTENTS

LIST OF TABLES	ix
LIST OF FIGURES	xi
CHAPTER 1: INTRODUCTION	1
Nature of the Problem	1
Sportsmanship	4
Statement of the Problem	6
CHAPTER 2: REVIEW OF THE LITERATURE	8
Introduction	8
Sportsmanship and Traditional Sport Participation	8
Definitions of Sportsmanship	9
Sportsmanship and Sport Attrition	10
Sport and Character Development	12
Theoretical Frameworks of Sportsmanship Behavior	18
Social Learning Theory	18
Kohlberg's Theory of Moral Development	19
Social Cognitive Theory	21
Measuring Sportsmanship Behavior	24
Sportsmanship and Competitive Equestrian Activity	33
Gaps in the Literature	39
CHAPTER 3: STUDY ONE: QUANTIFYING AGGRESSIVE RIDING BEHAVIOR OF YOUTH BARREL RACERS AND CONFLICT BEHAVIORS OF THEIR HORSES	41
Introduction	41
Methods	42
Participants	42
Procedure	42
Gate Scoring	45
Statistical Methods	46
Results	46
Interrater Reliability	46
Descriptive Statistics	47
Correlations	48
Evaluation by Ranked Final Run Time	50
Discussion	53

CHAPTER 4: STUDY TWO: THE DEVELOPMENT OF A PRELIMINARY SCALE MEASURING PROSOCIAL AND ANTISOCIAL BEHAVIOR IN EQUESTRIAN SPORT ...68	
Phase One: Development of a Preliminary Scale Measuring Prosocial and Antisocial Behavior in Equestrian Sport.....68	
Methods.....68	
Participants.....68	
Procedures.....69	
Pilot Test.....69	
Phase Two: Measurement of Factor Structure and Reliability70	
Methods.....70	
Participants.....70	
Procedures.....71	
Statistical Analyses71	
Results.....71	
Descriptive Statistics.....71	
Exploratory Factor Analysis72	
Confirmatory Factor Analysis.....76	
Six-Factor Model—Full Sample.....76	
Reliability.....77	
Six-Factor Model—18 to 26 Years of Age.....77	
Three-Factor Model—Full Sample.....78	
Three-Factor Model With Prosocial Horse Treatment Removed79	
Phase Three: Measurement of Discriminant and Concurrent Validity82	
Methods.....82	
Instruments.....83	
Task and Ego Orientation in Sport Questionnaire83	
Interpersonal Reactivity Index.....84	
Results.....84	
Discussion.....87	
CHAPTER 5: CONCLUSIONS90	
APPENDICES95	
Appendix A: MSU Institutional Review Board Approval Letter96	
Appendix B: MSU Animal Use Form Exemption.....97	
Appendix C: Process for the Development of a Preliminary Scale Measuring Prosocial and Antisocial Behavior in Equestrian Sport.....98	
Appendix D: Youth Horse Show Behavior Questionnaire: 34-Question Version100	
Appendix E: Initial IRB Application Approval.....110	
Appendix F: Part II: Task and Ego Orientation in Sport Questionnaire.....111	
Appendix G: Part III: Interpersonal Reactivity Index.....113	
REFERENCES115	

LIST OF TABLES

Table 1. Cloverleaf Barrel Race Ethogram.....	44
Table 2. Gate Scoring Description.....	45
Table 3. Interrater Reliability of Gate Score and Horse or Human Behavior.....	47
Table 4. Time, Gate Score, Behavior Ranges, and Means	48
Table 5. Correlations Between Average Final Run Time and Behavior	49
Table 6. Correlations Between Horse and Rider Behaviors	50
Table 7. Comparison of Gate Score and Mean Horse Behaviors by Ranked Run Time	51
Table 8. Comparison of Mean Human Behaviors by Ranked Run Time	52
Table 9. Analysis of Variance With Repeated Measures for Horse Behavior by Ranked Run Time	54
Table 10. Analysis of Variance With Repeated Measures for Human Behavior by Ranked Run Time	55
Table 11. Multiple Comparisons, Human Behavior by Ranked Run Time.....	56
Table 12. Horse Showing Organizations Participated in Over the Past Two Years.....	72
Table 13. Exploratory Factor Analysis of 34 PABES Items, Hypothesized Constructs, and Factor Loadings.....	73
Table 14. Confirmatory Factor Analysis—Six-Factor Models.....	77
Table 15. Confirmatory Factor Analysis—Three-Factor Models.....	78
Table 16. Confirmatory Factor Analysis—Three-Factor Models, Prosocial Horse Removed.....	79
Table 17. PABES Items, Factor Loadings (FL), and Error Variances (EV) for Full Sample, Three Factor Model.....	80
Table 18. Hypothesized Relationships Between Subscales Used to Determine Concurrent and Discriminant Validity.....	83

Table 19. Descriptive Statistics of the PABES, TEOSQ, Perspective Taking, and Empathy Subscales.....	85
Table 20. Relationships Between PABES Subscales and Content Validity Scales for the Full Sample.....	86
Table 21. Relationships Between PABES Subscales and Content Validity for the 18- to 26-Year-Old Sample	87

LIST OF FIGURES

Figure 1. Cloverleaf Barrel Race Pattern (Michigan 4-H Youth Development, 2011)	42
---	----

CHAPTER 1

INTRODUCTION

Nature of the Problem

According to the American Horse Council (2005), there are approximately 9.2 million horses in the United States. Horses are predominantly used for recreational purposes, with one popular category of use being competitive events.

Contrary to popular belief, each year more horses are shown than raced—approximately 2.7 million to 845,000, respectively. (In general, being “shown” means the horses are compared to one another in various classes of conformation or skill.)

Unlike many traditional sports, which focus on a specific game or type of competition, showing horses in the United States provides a large variety of opportunities both by discipline and equine breed. Each discipline and breed has developed its own requirements and traditions and as a result the show world is divided into many segments. For example, the U.S. Equestrian Federation (USEF), which identifies itself as the “national governing body for equestrian sport,” represents nine national and eight international show disciplines and 11 specific breeds (U.S. Equestrian Federation, 2011). In general, the USEF is largely recognized as the organization representing traditional English-style disciplines (including jumping, eventing, and dressage) and fine or society horse breeds (including Arabians, Morgans, and Saddlebreds).

The predominant organization for horses shown in a more western or “stock” style is the American Quarter Horse Association (AQHA), which is the largest breed association in the United States. Although the AQHA officially represents the interests of a single breed, the American Quarter Horse, several other stock-type breed organizations (including the American Paint Horse Association, the Appaloosa Horse Club, and the Palomino Horse Breeders

Association) regard the AQHA as an industry leader. Stock-type breeds are those originally developed for traditionally American, western-style activities involving speed and working with cattle (Evans, Borton, Hintz, & VanVleck, 1990). With time, an expansive set of events has been created showcasing the abilities of these horses, which are also commonly used in rodeos and in gymkhana, or timed games on horseback (Michigan 4-H Youth Development, 2011).

People of a variety of ages and skill levels participate in horse shows, including youth and adult amateurs, as well as professional trainers. Although there is little scientific literature explaining people's motivation for showing horses, it is likely that some of their reasons are similar to those described in more traditional sports. Several studies have found three consistent reasons for sport participation: developing or demonstrating physical competence, attaining social approval and acceptance, and enjoying the sport experience (Weiss, 2004). Similarly, Smith, Swinker, Comerford, Radhakrishna, and Hoover (2006) conducted a survey of 982 youth involved in 4-H, AQHA, the United States Pony Club, and National High School Rodeo Association activities, finding that the majority reported that "having fun with the horse" was very important to their involvement in youth horse programs. In addition, "taking care of the horse," "being able to get the horse to do what is wanted," "keeping safe while working with the horse," and "learning new skills" were all considered to be "very important" by the majority of respondents. Saunders-Ferguson, Barnett, Culen, and TenBroeck (2008) also found that participation in a six-day, residential horse camp increased the self-esteem of youth aged 12 to 18, further suggesting similarities in motivation between equestrian activities and more traditional sports.

In a summary of 75 years of sports psychology research, Weiss and Gill (2005) found that certain themes emerged over time, including: sportsmanship and moral development; social

development and significant others; self-perceptions; attitudes and motivation; emotion, arousal, and anxiety; and competition and achievement orientations. While the number and scope of studies with respect to competitive equestrian events has been limited, the general areas of concern in equestrian sport parallel those in more traditional sports. Hedstrom and Gould (2004) presented critical issues in youth sport research for the Citizenship through Youth Sports Alliance. These topics included the benefits of youth participation, youth sport coaching, health and safety in youth sport, involvement, participation and dropout, talent development and sports specialization, and the role of parents in youth sport. The equestrian community is concerned about somewhat similar matters, based on a survey conducted at a Michigan State University (MSU) Extension workshop on horse show ethics attended by horse owners, trainers, judges, 4-H volunteer leaders, and parents ($n = 45$). This survey determined that the top five ethical concerns pertaining to horse shows were matters of sportsmanship, horse welfare issues, violations of rules and regulations, concerns about fair judging, and parenting issues (Skelly, Heleski, Tomlinson, Zanella, & Waite, 2005). The top three of these ethical concerns (sportsmanship, horse welfare issues, and violations of rules and regulations) address matters of health and safety for both exhibitor and horse. Providing further support for the idea that these issues are indeed matters of national concern in competitive equine sport, the AQHA introduced a stewards program in 2010. Approved stewards are expected to address issues of “the humane treatment of horses, as well as enforcement of safety issues and consistent adherence to breed rules for all exhibitors” at sanctioned AQHA shows (Reynolds, 2010, p. 582). This recognition of respect for the rules encompasses a portion of a larger definition of sportsmanship in the traditional sport literature.

Sportsmanship

Sportsmanship has been described as “an intense striving to succeed, tempered by commitment to a ‘play spirit’ such that ethical standards will take precedence over strategic gain when the two conflict” (Shields & Bredemeier, 1995). Gano-Overway, Guivernau, Magyar, Waldron, and Ewing (2005) suggested that sportsmanship “. . . taps an athlete’s identity to respect the game (i.e., follow the rules and obey officials), treat others with respect, and respect one’s self (i.e., put forth one’s best effort to make the contest fair and challenging for self and others) while avoiding the winning-at-all-cost attitude” (p. 4). While these definitions refer to more traditional sports, instances of poor sportsmanship occur in competitive equestrian activity as well, and may be tied to horse welfare issues. When an exhibitor becomes frustrated with his or her performance in the arena, his own teammate, the horse, may be the recipient of physical aggression such as jerking on the reins (and therefore the horse’s mouth); excessive use of the leg, whip or spur; or some combination of these behaviors. Anecdotal examples of poor sportsmanship in competitive equestrian activities include the use of illegal performance-enhancing drugs, harsh training methods, aggressive riding techniques, and the encouragement of such behaviors. One frequent example of aggressive riding seen in gymkhana events is young exhibitors (who may be encouraged in their actions by adults) striking or excessively spurring a horse to encourage it to go faster. Such behaviors would be cause for disqualification in most other events. While the intention may not be poor sportsmanship, the question remains as to whether the use or encouragement of aggressive riding is appropriate behavior on the part of the youth exhibitors or the encouraging adults.

Bandura (1973) stated that “attempts to define a concept essentially represent an invitation for a stroll through a semantic jungle” (p. 2), and the concept of aggression, or

aggressive riding, is no exception. For the purposes of this discussion, it is important to be clear about how aggression and aggressive riding are defined, as it is unlikely that injuring their horse is the goal of riders employing such techniques. It is more likely that riders are demonstrating a form of instrumental aggression as opposed to hostile or injurious aggression. “Instrumental aggression, which is aimed at securing extraneous rewards other than the victims’ suffering, is distinguished from hostile aggression, the sole aim of which is presumably to inflict injury on others” (Bandura, 1973, p. 3). For the balance of this dissertation, the assumption will be made that instrumental aggression is being employed by those riders choosing to ride aggressively, with the intended consequence being increased speed in horses, and subsequently, improved times and subsequently higher placing in the event.

Interestingly, there is research to suggest that these human behaviors actually have the opposite effect on the desired outcome. A study by Evans and McGreevy (2011) investigating the use of the whip and subsequent performance in Thoroughbred racing found that horses reached their highest speeds when no whip was used, and that increased whip use was in fact not a predictor of superior placing at the end of the race. Regardless of intent, whip use may not only cast an unfavorable light on equestrian sport, but may be ineffective, which is contrary to traditionally held equestrian beliefs. In addition, moral questions are raised with regard to character development, as well as animal welfare and treatment, when youth are encouraged by adults to engage in aggressive riding techniques. As previously stated, aggressive riding could actually cause a horse to slow down, or at least not speed up which is contrary to the desired response. Harsh treatment could also influence horse behavior in other ways, such that the horse “tells a story” of the rider’s sportsmanship behavior, even if the individual reports that he or she is in fact learning good sportsmanship as a result of participation. In the short term, horses ridden

aggressively may demonstrate conflict, stress, and frustration behaviors similar to those demonstrated by therapeutic riding horses and described by Kaiser, Heleski, Siegford, and Smith (2006) such as head tossing, tail wringing, bucking, or backing up. Over time, an aggressively ridden horse may learn that the show arena is not a pleasant place to be, and may refuse to enter it. Anecdotal evidence suggests that horses who fight entering the gate present a danger to both their riders and those around them, exhibiting behaviors such as bolting, rearing, and on extreme occasions, flipping over. No work has actually quantified the incidence of this behavior, or the impact of using aggressive behaviors on the outcome of youth events, however.

While preliminary research has been done to investigate the impact of competitive equestrian activity on life skills acquisition and youth development, the vast majority of these studies have primarily been self-reporting in nature and do not follow any particular theoretical approach. In addition, there appears to be a disconnect between reports that character development (sportsmanship, respect, etc.) occurs as a result of participation in competitive youth equine activities and the fact that the industry as a whole has concerns about poor sportsmanship behavior and, subsequently, animal welfare. There is certainly room in the literature for a more comprehensive investigation of the role that showing horses plays on character development and the impact that competitive equestrian activity has on both animal welfare and the human–animal bond.

Statement of the Problem

There appears to be a disconnect between the belief that participation in competitive equine activities increases or improves sportsmanship and the fact that the equine industry is calling for improvements in sportsmanship behavior and animal treatment at horse shows. Research in the area of sport behavior and motivation at horse shows is extremely limited, and

further investigation may provide clues and possible solutions to industry concerns. Therefore, the research objectives of the first study of this dissertation are to (a) quantify the incidence of aggressive riding behaviors of youth horse show participants, (b) quantify the conflict, stress, and frustration behaviors of the horses they ride, and (c) determine the relationship between aggressive riding and horse behavior.

The objectives of the second study are to (a) develop a preliminary scale for measuring prosocial and antisocial behavior in equestrian sport and (b) to verify the psychometric properties of such a scale. With this information, it may then be possible to develop and test interventions for improving sportsmanship behaviors at competitive equine events.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

As in traditional sport, there is a commonly held belief in equestrian sport that participation develops good character and life skills in young people, with the development of positive sportsmanship often mentioned as a primary benefit of such involvement. At the same time, there are concerns regarding animal treatment and poor sportsmanship in equestrian sport. This review will investigate the sportsmanship literature in both traditional and equestrian sport, as well as the current theoretical and psychometric aspects of sportsmanship.

Sportsmanship and Traditional Sport Participation

The Physical Activity Council (2012) reported that more than 217 million Americans aged 6 years and older participate in at least one sport or physical activity. These statistics also suggest that approximately 84% of youth aged 6 to 17 years participate in some form of sport or physical activity, confirming the importance of such endeavors in American life. Despite the apparent consensus regarding sport participation as a priority, there seems to be less agreement about the benefits or value of sport participation. For some, participation in youth sport is a sure means by which to develop positive character, but for others, youth sport represents the opposite. In the words of Eitzen (1988), “Sport has the potential to ennoble its participants and society. Athletes strain, strive and sacrifice to excel. But if sport is to exalt the human spirit, it must be practiced within a context guided by fairness and humane considerations” (p. 27). Similarly, Shields, Bredemeier, LaVoi, and Power (2005) suggested that some believe the “youth sport world [is] populated by children who cheat, fight, and disrespect opponents and officials, by coaches who encourage such behaviors, and by parents and fans who scream vulgarities at

players, coaches, and officials” (p. 1). There is no question that the character traits that may be developed through sport participation, often referred to as sportsmanship, are a topic of much societal discussion and debate both in the United States, and globally. “Of all the virtues cited that sport supposedly fosters, sportspersonship is perhaps the most frequently cited” (Shields & Bredemeier, 1995). Finding a common definition of the term sportsmanship—good or bad—however, is another issue.

Definitions of Sportsmanship

Despite its popularity as a proposed virtue of sport participation, and while it seems like a fairly simple concept, defining sportsmanship through the literature is a rather complicated process. One basic dictionary definition of sportsmanship is “conduct (as fairness, respect for one’s opponent, and graciousness in winning or losing) becoming to one participating in a sport” (Sportsmanship, n.d.). While this definition provides an excellent entry point, it fails to identify many of the key characteristics and relationships of sportsmanship, and further, why sportsmanship is important at all. Clifford and Feezel (1997) proposed a multithemed definition that addresses several common characteristics of sportsmanship, which include respect for opponents, respect for teammates, respect for officials, respect for the game, and respect between players and coaches. In addition, Clifford and Feezel suggest that good sportsmanship requires a balance between the frivolity of play and the seriousness of competition, and that when poor sportsmanship arises, it is often as a result of being either too serious or not serious enough about the sporting endeavor. Finding this balance of seriousness and play, and given the potentially differing interpretations of where such balance lies, may result in differing opinions as to what constitutes good sportsmanship, however.

In a similar vein, Gano-Overway et al. (2005) suggested that sportsmanship “taps an athlete’s identity to respect the game (i.e., follow the rules and obey officials), treat others with respect, and respect one’s self (i.e., put forth one’s best effort to make the contest fair and challenging for self and others) while avoiding the winning-at-all-cost attitude” (p. 4). Both this definition of sportsmanship and that of Clifford and Feezel (1997) highlight the importance of respect for self and others, as well as for the traditions or *spirit of the game*. But some would argue that the true spirit of the game, or point of sport, is in fact to win, suggesting that anything less than a complete effort to win would actually be disrespectful to the game, or even societal values. May (2001) suggested for example, that “In America, we value success through competition; and as long as we have this value, we can expect our youth sports to reflect the contradictions inherent in reconciling values of competing to win with values of sportsmanship” (p. 388). It is very difficult to separate social contexts from individual ones, and it may be that the societal focus on winning has led to the exclusion of consideration for personal ethical behavior, referred to by May (2001) as the “constant contradiction between ideals of sportsmanship and winning” (p. 374). Others would suggest the possibility of an even more insidious outcome for those frustrated by the contradiction; that youth are leaving sport.

Sportsmanship and Sport Attrition

Petlichkoff, as cited in Fraser-Thomas, Cote, and Deakin (2008), reported that as many as two-thirds of youth aged 7 to 18 years leave sport annually, with the dropout rate being particularly high in adolescence. Sport attrition is an extremely complex process that occurs for a variety of reasons. In a retrospective study of withdrawal from youth sport over a period of 10 years, Butcher, Lindner, and Johns (2002) distributed questionnaires to 1,387 Grade 10 students (666 females, 721 males; average age 15.1 years) regarding participating in and dropping out of

sport. The authors reported that 94% had withdrawn from at least one sport, with the dropout rate increasing as grade level increased. Of those dropping out, however, 70% began participation in one or more new sports. To add to the complexity of youth sport attrition, Butcher et al. (2002) reported significant differences in reasons for dropout between dropout types (based on years and level of sport participation), program type, grade level, and gender. Regardless of the complexity, however, the primary reasons given for withdrawal were “lack of enjoyment,” followed by “other nonsport activities,” and “other sports.” This study is one of a few that looked at dropout over a long period, as opposed to a cross section or moment in time, and it provides especially valuable information and support for the fact that “other activities” may become more important to young people as they grow older. This particular study does not actually delve into what constitutes “lack of enjoyment,” and clearly, this will vary by individual. In some cases, it is possible that “lack of enjoyment” may also be connected to matters of sportsmanship or lack thereof. Indeed, other reasons identified for sport attrition have been identified as “lack of fun, issues with the coach, time commitment required, lack of playing time, *overemphasis on winning*, and greater interest in other activities” (Weiss, 2004, p. 225). Similarly, Gould 1987) as cited in Butcher et al. (2002) reported that “conflicts of interest and interest in other activities have been found to be the most consistently cited motives for sport withdrawal, while negative motives such as lack of playing time, *overemphasis on competition*, boredom, *competitive stress*, dislike of the coach, and no fun have been rated as major motives by a smaller number of former participants” (p. 67) [emphasis added]. While negative behaviors that parallel definitions of sportsmanship are not the most common reason that the majority of youth leave sport, sport behavior is an extensively discussed topic that some researchers (and many popular press writers) suggest is actually the *main* reason youth should drop out of sport or never get involved

in any competitive activity (Kohn, 1986). While the potential for sport attrition is a serious matter, we know that the majority of youth do not leave sport for reasons related to sportsmanship; however, some do. There are ethical and moral development issues that make sport behavior a much larger cause for concern, however.

Sport and Character Development

One of the most frequently cited reasons for sport participation is the belief that sport “builds *character*,” which is defined as “the mental and moral qualities distinctive to an individual” (Character, n.d.). In fact, a Google search of the question “Does sport build character?” yields 223,000,000 results, suggesting that this is an extremely popular question in the media. Unfortunately, there appears to be little agreement on the answer to the question, either in the media or research literature, which is also extensive. In the words of Shields, Bredemeier, LaVoi, and Power (2005), “The playing fields of youth sports are populated neither by angels nor devils, but human beings who often act well, but who sometimes do not” (p. 1). Unfortunately, it is often the negative behaviors that receive the most attention, or even exploitation, in the form of widespread media coverage or local gossip. Few studies have actually attempted to quantify the actual incidence of positive or negative sportsmanship behavior; however, one extensive line of research related to sport and moral development is that of Shields and Bredemeier (1995) who stated, “The main difference between sport and everyday life is that moral experience is condensed and exposed in sport. We believe this makes it a valuable context for moral education” (p. 2).

Shields and Bredemeier (1995) made the point that those holding the view that sport creates good character typically present concepts such as the development of teamwork, fairness, self-control, courage, and persistence as evidence of such character development. At the same

time, however, few studies provide unequivocal support for such development, and even fewer support the concept that these traits carry over into daily life outside of sport. One notable exception is a study by Petitpas, Van Raalte, Cornelius, and Presby (2004), in which they investigated the Play It Smart program which was developed to “take advantage of the intrinsically motivating and voluntary nature of sport participation” (p. 327), while also developing relationships between program participants and coaches. The Play It Smart program was pilot tested with 252 student-athletes playing football at four high schools in three inner city locations. Investigators found that program participants’ grade point averages increased from 2.16 to 2.54 over a two-year period, which also demonstrated an increase over the school average of 2.25. The SAT scores also were higher than those of the general student body, at 829.86 and 801.67, respectively, and 98% of participating seniors graduated from high school on time (Petitpas et al., 2004). While the pilot test evaluation suggested that the Play it Smart program may be beneficial in developing academic success in participants, it is important to recognize that there was no control group and that all participants were males involved in football. In addition, this particular study focused on academic achievement, which does not necessarily represent moral or character development specifically.

Another study comes closer to examining sport as a means by which to truly develop positive character that extends beyond the sporting experience. In a program known as The First Tee, designed specifically to teach life skills through golf (M. R. Weiss, 2008), researchers have found evidence of positive youth development. In the first year of the study, investigators used a combination of focus groups and individual interviews of 95 youth (aged 11 to 17 years), 26 coaches, and 24 parents to determine what life skills participants learned, how those life skills were taught and whether they transferred to other areas of life. More than 90% of youth

participants showed a transfer of life skills learned in the golf program into other areas of life, such as school and home. Using the information gleaned from the qualitative study, researchers then developed a quantitative tool to evaluate life skills transfer in year 2, which was administered to 700 youth participants. Weiss (2008) reported that “youth in The First Tee compared favorably to those in other activities on most dimensions characterizing life skills transfer, life skills in the activity context, and the Nine Core Values” (p. 442) of the program, which are honesty, integrity, respect, responsibility, courtesy, sportsmanship, confidence, judgment, and perseverance. This study is one of a few that actually evaluated life skills transfer from sport participation, supporting the concept of true positive youth development through sport. These studies did not support the notion that simply participating in sport will develop good character, however, but that “character development is a function of specially designed curricula and influenced by significant adults and peers, and individual factors such as moral reasoning and cognitive developmental level” (Weiss, 2008, p. 437). In addition, sportsmanship was identified as one of nine values, as opposed to being used as a broader term.

While these studies suggested that sport might develop good character under the right conditions, there is also work investigating the causes of the opposite outcome, that is, that sport participation has a negative influence on character development. For example, Kavussanu, Seal, and Phillips (2006) examined the frequency of prosocial and antisocial behavior in 313 male youth soccer players via both self-reporting and videotape analysis. Prosocial behavior was defined as “voluntary behavior intended to help or benefit another individual or group of individuals,” and “antisocial behavior was defined as voluntary behavior intended to harm or disadvantage another individual or group of individuals” (p. 328). The results suggested that antisocial behaviors such as late tackles, body checking, or provoking another player were

observed more frequently than prosocial behaviors such as helping an opponent up or congratulating an opposing player. While this study focused on one sport (soccer) and one gender (males) it is unique in that it does quantify actual behaviors that were witnessed, as opposed to relying on retrospective self-reporting.

In a broader effort to determine the perceived frequency of both good and poor sport behaviors, a survey of young athletes ($n = 803$) involved in 10 different sports, as well as their parents ($n = 189$) and coaches ($n = 61$) was conducted (Shields et al., 2005). Youth participants ranged in age from 9 to 15 years, with 416 males and 375 females included in the study. Athletes were involved in basketball, soccer, baseball or softball, football, volleyball, track, swimming, hockey, lacrosse, and wrestling, and the convenience sample represented three geographic regions including the east (Philadelphia, PA), the midwest (South Bend, IN), and the west coast (San Francisco, CA). The parent sample included 48 males and 133 females, with 8 failing to indicate gender, and the coach sample included 47 males and 13 females, with 1 respondent failing to indicate gender. The survey tool focused on ethical behavior and related attitudes that may occur in youth sport by participants, spectators, parents, and coaches. Good sport conduct was addressed by the questions in the survey, along with themes of cheating, aggression and disrespect, and surveys were modified slightly based on the specific group. The survey was primarily designed such that respondents were asked if they (or others) had engaged in or were perceived as likely to engage in specific behaviors, and if so, how frequently these behaviors had occurred (once or twice, a few times or often).

Based on the results (Shields et al., 2005) of the young athlete surveys, the majority did not admit to having engaged in ethically questionable behavior when involved in sport, although affirmative responses ranged from 9% to 38%, suggesting that some in fact have behaved

unethically. It is possible that survey respondents knew that the “correct” response was more positive behavior, and, therefore they chose the most desirable response as opposed to the truth; however, that is always a potential issue with self-reporting. The largest percentage of youth (38%) admitted “trying to get back at an opponent,” while 31% indicated that they “argued with a ref or sport official,” and 27% “acted like a ‘bad sport’ after a loss” (p. 47). These numbers do suggest that there are ethical concerns in youth sport, although of those youth admitting to questionable behavior, the majority (55% to 71%) indicated that they engaged in such behavior “once or twice.” Youth were also asked how many of their teammates were likely to engage in ethically questionable behavior during athletic activity, with these questions being speculative in nature, not asking what youth had actually witnessed. Interestingly, while youth admitted to engaging in ethically questionable behaviors, they did not believe that their teammates would do so, or that at least only a small percentage would be so inclined. As one example, 31% of youth admitted to arguing with a sport official, while only 9% believed that their teammates would. It would be interesting to know how youth would perceive the hypothetical behavior of their opponents, as opposed to their teammates.

Sportsmanship behavior is not limited to those on the field or in the arena, and truthfully, it may be that parents, coaches, and spectators demonstrate more poor sportsmanship behavior than the young athletes they support. Shields et al. (2005) reported that between 0% and 14% of parents indicated that they had engaged in poor sportsmanship behavior, with the largest number (14%) indicating that they had yelled loudly at or argued with a referee or sport official, followed closely by parents indicating that they had angrily criticized their child’s sport performance. These results were again self-reported, and interestingly, there was only one question that addressed the youth perspective of parent behavior. In response to the statement “my parents get

angry with me when I don't play or do well," a total of 15% "somewhat agreed" or "strongly agreed," which is in keeping with the parent response to the same question.

When coaches responded (Shields et al., 2005) to eight items designed to address sportsmanship behavior, a relatively high percentage admitted loudly arguing with a referee or official (42%), or angrily yelling at a player for making a mistake (36%), although, as with both the youth and parent self-reported responses, the majority admitted doing so "once or twice." When youth were asked to report on the behaviors of coaches, it is interesting to note that the percentage of responses were quite similar to those reported by the coaches themselves. Forty-eight percent of youth (42% of coaches) stated that the coach had "angrily argued with a sport official", and 35% of youth (compared to 36% of coaches) indicated that the coach had angrily yelled at a player for making a mistake (Shields et al., 2005, p. 50). Even more interesting is the fact that 91% of parents surveyed "disagreed" or "strongly disagreed" that the coach angrily yells at the team, an issue that had both one of the most common responses from coaches (36%) and the most agreement between youth and coaches (35% and 36% respectively).

These authors (Shields et al., 2005) presented information that provides research-based evidence that negative sportsmanship behaviors occur with enough frequency in youth sport to be a concern. Although much of the study was self-reported, the individuals involved in the study admit to having personally behaved in an ethically questionable manner at times. While the percentages may be viewed as infrequent to some, when you consider that there were 803 youth in 10 different sports, when 38% admit, for example, to having tried to get back at an opponent, that amounts to 305 young people. Similarly, when 31% admit to arguing with a referee or sport official, that represents approximately 249 youth. It is easy to see why the media become somewhat fixated on incidences of poor sportsmanship, and it is also clear that sportsmanship

behavior in youth sport involves more than just the young athletes. Finally, these data provided support for the fact that participation in youth sport may not be producing positive moral development to the degree it could or should. Several theoretical approaches have been used to investigate why youth sport may not always produce the positive outcomes often associated with it.

Theoretical Frameworks of Sportsmanship Behavior

Several approaches have been used in an attempt to better understand and evaluate the concept of sportsmanship through a theoretical lens. Some of the most predominant theoretical foundations include those that describe moral development and moral reasoning, including Social Learning Theory, Kohlberg's Theory of Moral Development, and Social Cognitive Theory.

Social Learning Theory

The predominant focus of social learning theorists is observable behavior. In the words of Shields and Bredemeier (1995), "the focus of social learning theorists are the learning principles that define how behavior is acquired, maintained, modified, or extinguished through the contingencies operating in the social environment" (p. 39). Proponents of social learning theory have suggested that all behaviors, including those that demonstrate positive or negative sportsmanship, are learned in the same way that all social behaviors are learned: through direct reinforcement and observational learning (Williams & Gill, 2000). "The more rudimentary mode of learning, rooted in direct experience, results from the positive and negative effects that actions produce. When people deal with everyday events, some of their responses prove successful, while others have no effect or result in punishing outcomes. Through this process of differential reinforcement, successful forms of behavior are eventually selected and ineffectual ones are

discarded” (Bandura, 1977, p. 17). Some critics have suggested that this particular internalization approach is inadequate when it comes to moral development in that it fails to take into account the agency of the human, instead positing that individuals are driven by nonrational forces, that morality depends only on social norms, and that moral learning is based on the means by which “moral norms and prosocial behavioral propensities are internalized” (Shields & Bredemeier, 1995, p. 137).

Kohlberg’s Theory of Moral Development

Taking into account the criticism of internalized approaches to moral development, others have chosen to focus on more of a constructivist approach, which holds that “the person and the environment are coparticipants in the construction of meaning, and neither can be reduced to the other” (Shields & Bredemeier, 1995, p. 49). Kohlberg’s Theory of Moral Development represents the predominant representation of the constructivist approach to moral development research, and the cornerstone of this theoretical viewpoint is that the reasons producing or motivating the behavior are what determine whether an act is moral. In short, “Kohlberg’s theory rests on the claim that what makes a particular act moral is the reason motivating it” (Shields & Bredemeier, 1995, p. 50). These reasons are potentially grounded in four specific orientations: normative order, utility consequences, justice or fairness, and ideal-self. The normative order orientation refers to the operational rules and roles of a situation, while utility consequences determine the moral act based on the positive or negative consequences that result from a decision. Justice or fairness characterizes the moral act in relationship to “liberty, equality, reciprocity, and contract” (Shields & Bredemeier, 1995, p. 52). Finally, the ideal-self involves the moral act from the perspective of the actor as someone who is good, or who has a conscience. Any one of these orientations could provide a place from which to make decisions in sport.

However, Kohlberg's view was that the justice orientation was the most appropriate place from which to make moral decisions (Shields & Bredemeier, 1995).

The constructivist portion of Kohlberg's view is based in the fact that "Kohlberg hypothesized an invariant, culturally universal six-stage sequence of moral development" (Shields & Bredemeier, 1995, p. 53). Kohlberg's theory is rather complex; however, the general framework encompasses the perspective from which moral decisions are made. The levels through which individuals hypothetically progress are the concrete individual perspective, the member-of-society perspective, and the prior-to-society perspective. Each level subsequently supports specific degrees of morality, which include the preconventional, conventional, and postconventional stages. In the preconventional stage, moral decisions are made from an egocentric perspective, with little understanding of social rules or norms. In the conventional stage, moral decisions are made based on social norms. Finally, in the postconventional stage, moral decisions are made "by applying a universal moral principle that is valid regardless of social context" (Shields & Bredemeier, 1995, p. 53).

Kohlberg's theory has been evaluated, modified, cited, and in some respects, criticized extensively. For some, his methodology was questionable in that he relied on only a few moral scenarios to establish the theory (Bandura, 1986), and that the emphasis the theory places on justice neglects to consider matters of care and responsibility, thus neglecting the perspectives of women (Shields & Bredemeier, 1995). Haan, as described in Weiss (2004) has also proposed a theory of moral development that describes a more interactional, yet five-stage model, which includes three broad categories of assimilation, accommodation, and equilibration for moral development to occur. Bandura (1986) has further suggested, however, that "a major problem

with sequential typologies is that people hardly ever fit them” (p. 490), and that there are a variety of social interactions and influences that contribute to moral development.

Social Cognitive Theory

In the 1980s, Bandura proposed an alternate learning theory that also allows for the consideration of moral development. Social cognitive theory postulated that “people are neither driven by inner forces, nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (Bandura, 1986, p. 18). “The social portion of the terminology acknowledges the social origins of much human thought and action; the cognitive portion recognizes the influential causal contribution of thought processes to human motivation, affect, and action” (Bandura, 1986, p. xii). In short, people learn, and modify their behavior both through methods of internal processing and external influence. While not a constructivist or serial approach, social cognitive theory incorporates several basic capabilities, which include symbolizing, forethought, vicarious, self-regulatory, and self-reflective capabilities. Through the development of these capabilities, people are thus endowed with the ability to make decisions, including those that may be moral or ethical in nature (Bandura, 1986).

Symbolizing capability represents the ability of humans to conceptualize potential experiences and test them through rational thought via the use of symbols. In this way they do not automatically have to go through the potentially dangerous or even fatal “trial and error” process that other animals use as part of learning. Through symbolizing capabilities “people usually test possible solutions symbolically and discard or retain them on the basis of estimated outcomes before plunging into action” (Bandura, 1986, p. 18). Further, “through the medium of

symbols, they can communicate with others at almost any distance in time and space” (Bandura, 1986, p. 18). Bandura does point out, however, that even with symbolizing capabilities people make faulty choices based on incomplete or incorrect information, misunderstandings about their environment, or failure to consider all consequences of a particular choice (Bandura, 1986).

The capacity for forethought is the second capability considered in social cognitive theory. Forethought capability involves the regulation of decisions or behaviors through means other than environmental interaction or past experience. Forethought involves advanced consideration of the consequences of potential choice of action, and may also incorporate goal setting and other means of future planning. “By representing foreseeable outcomes symbolically, people can convert future consequences into current motivators and regulators of foresightful behavior” (Bandura, 1986, p. 19).

Vicarious capability represents the fact that humans often learn not just through symbolism and forethought, but via observation. Bandura suggests “virtually all learning phenomena, resulting from direct experience, can occur vicariously by observing other people’s behavior and its consequences for them.” Through this process, individuals can again avoid relying on trial and error, especially when making mistakes may be dangerous, by observing those who have already learned and can successfully perform the skill. More advanced skills such as language can also be learned through modeling. Bandura reminds us that both television and the Internet also play a role in observational learning, not previously considered through most other psychological theories. He writes, “as a result, they give insufficient attention to the increasingly powerful role that the symbolic environment plays in present day human lives. Indeed, in many aspects of living, televised vicarious influence has dethroned the primacy of direct experience. Whether it be thought patterns, values, attitudes, or styles of behavior, life

increasingly models the media” (Bandura, 1986, p. 20). While not specifically mentioned by Bandura, this may also include current forms of social media including Facebook, LinkedIn, Instagram, SnapChat, Twitter, and the like.

Self-regulatory capability allows for the human ability to make decisions based on internal standards, as opposed to simply making them based on the standards of others. Once people develop personal standards, they evaluate their actions against those standards, and may modify future decisions. Further, “by arranging facilitative environmental conditions, recruiting cognitive guides, and creating incentives for their own efforts, people make causal contributions to their motivation and actions” (Bandura, 1986, p. 20). Through this capability, Bandura addresses the concerns of his critics that learning is based solely on external influence, suggesting that “self-regulatory functions are fashioned from, and occasionally supported by, external influences” (Bandura, 1986, p. 20).

The final capability recognized and defined by Bandura is that which, in his words, makes us uniquely human: “If there is any characteristic that is distinctively human, it is the capability for reflective self-consciousness. This enables people to analyze their experiences and to think about their own thought processes. By reflecting on their varied experiences and on what they know, they can derive generic knowledge about themselves and the world around them” (Bandura, 1986, p. 21). It is self-reflective capability that is critical in matters of moral development and sportsmanship behavior, in that humans can reflect on their own behavior and the behaviors of others, and make decisions about what behaviors they will choose to exercise in the future, thus using all of their capabilities to learn new skills and beliefs, including that of sportsmanship.

The capabilities described by Bandura's social cognitive theory provide an additional framework from which to understand how moral conduct is regulated, including that of moral conduct in sport (Boardley & Kavussanu, 2008). Bandura suggested that individuals experience particular emotions depending on whether their behavior has positive or negative consequences for others, and that those emotions may regulate future conduct, "whereby motivation is reduced for behaviours that result in negative affect but is increased for conduct that results in positive affect. However, although these emotions may regulate moral action, people still engage in immoral acts" (Boardley & Kavussanu, 2008, p. 1507). Through the use of eight psychosocial operations, Bandura labels mechanisms of moral disengagement. It may be possible to explain why individuals may be able to engage in immoral acts without negative emotion, thus decreasing the likelihood that negative affect will regulate future conduct and allowing them to continue to behave in immoral or inhumane ways (Boardley & Kavussanu, 2008).

Measuring Sportsmanship Behavior

Solomon posited that "Shields and Bredemeier (1995) created a threefold definition. They proposed that morality in sport is related to character, fairplay, and sportpersonship" (p. 459; in Weiss & Gill, 2005). Given the complexity of both character and matters of fairplay, the balance of this review will focus exclusively on the concept of sportsmanship. While the development of sportsmanship through sport participation is a topic of much discussion, some believe that "research continues to suffer from a lack of good instrumentation and a commonly accepted definition" (Shields & Bredemeier, 1995, p. 187). Since that statement, several tools have been created using various theoretical approaches in an effort to provide more depth to the study of sportsmanship and moral decision-making and behavior in sport.

In an effort to develop agreement with regard to the nature of sportsmanship and ultimately a definition derived from athletes themselves, Vallerand, Deshaies, Currier, Brière and Pelletier (1996) distributed a questionnaire to 1,056 athletes aged 10 to 18 years ($M = 14.8$) participating in seven sports: track and field, hockey, gymnastics, volleyball, badminton, swimming, and basketball. Approximately the same number of males ($n = 563$) and females ($n = 492$) were represented, with an equal number from each sport. The questionnaire was designed to determine whether athletes felt that described situations related to the concept of sportsmanship using a 4-point scale ranging from 1 (not related at all to the notion of sportsmanship) to 4 (greatly related to the notion of sportsmanship). A factor analysis was conducted on 21 items, and “results revealed the presence of five factors with eigenvalues greater than 1 and explaining 50% of the variance” (Vallerand et al., 1996, p. 93). The five factors identified are (a) respect and concern for commitment toward sport participation, (b) a negative approach toward sport (including a win at all costs attitude), displays of temper after losing, etc., (c) an emphasis on respect and concern for rules and officials, (d) respect for the social conventions found in sport, and (e) the emphasis on respect and concern for one’s opponent. The authors identified several implications as a result of this process, the first being that the findings represent an “ecologically valid definition of sportsmanship” that is multidimensional, and that represents a “core tendency toward the respect of and the concern for the sport environment, the rules, and its participants (coaches, teammates, referees and officials, and the opponents), and a concomitant avoidance of a negative win-at-all costs approach toward participation in sports” (Vallerand et al., 1996, p. 93). The authors also suggested that the advancement of sportsmanship research requires moving beyond the concept of justice proposed by Kohlberg, given that based on these results, a multidimensional sportsmanship model likely includes justice, as well as concern and respect for

others, social conventions, and oneself. Finally, the authors proposed and developed a multidimensional tool to measure sportsmanship based on the definition proposed in the current study, which will be discussed shortly (Vallerand et al., 1996, p. 96). While the results of the current study do establish a multidimensional definition of sportsmanship, it is important to recognize that there were limitations to the study in that the population only included young French-Canadian athletes, as opposed to coaches and parents, and individuals who were participating at low to average levels of competition. It may be that representatives of other ages, cultures, or competitive levels would ultimately propose a somewhat different definition of sportsmanship. Likewise, some sports may have unique contributors to the competition that influence different dimensions of sportsmanship, such as the horse in competitive equestrian activities.

Based on the sportsmanship definition defined above, Vallerand and his colleagues developed the Multidimensional Sportpersonship Orientations Scale (MSOS; Vallerand et al., 1996). These authors used an approach that they state is neither based in social learning nor in structural-developmental theory, but instead in a “social-psychological approach to sportpersonship” (Vallerand, Brière, Blanchard, & Provencher, 1997, p. 197). Based on the definition of sportsmanship developed from their previous work (Vallerand et al., 1997), a list of items was created representing behavioral elements of sportsmanship, with 20 items prepared for each of the five sportsmanship dimensions identified. Content validity was then verified by two sports psychology professionals not involved in the project, and as a result 13 items were assigned to each sportsmanship dimension. Fifteen athletes aged 12 to 16 years then completed the 65-item version of the MSOS, and items were clarified based on the input of the youth athletes. Finally, 132 athletes from various sports completed the preliminary tool and a factor

analysis was conducted, by which the five best items in each subscale were kept, leading to a 25-item MSOS (Vallerand et al., 1996). The 25-item MSOS was completed by 362 youth athletes (211 boys and 151 girls), with a mean age of 14.4 years, along with five hypothetical scenarios representing the athletes' intent to behave in accordance with each of the proposed sportsmanship dimensions. Athletes represented six sports: badminton, basketball, hockey, swimming, track and field, and volleyball. A confirmatory factor analysis (CFA) was then conducted, and internal consistency of the MSOS subscales verified. Finally, test-retest correlations over a 5-week period were evaluated to determine temporal stability.

The authors (Vallerand et al., 1997) reported that the results of the CFA of the proposed MSOS confirm a five-factor model of sportsmanship. Further, the factors showed internal consistency scores ranging from .71 to .86, with the exception of the Negative Approach subscale, which had a Cronbach's alpha of .54. The authors suggested that the "first four subscales showed adequate reliability, whereas that of the Negative Approach subscale should be investigated further" (Vallerand et al., 1997). The mean test-retest correlation was .67, ranging from .56 to .76 with the Negative Approach subscale again showing the lowest correlation at .59 (Vallerand et al., 1997, p. 200). Although the MSOS is considered to be a valid and reliable instrument in general, the lack of internal consistency and test-retest reliability of the Negative Approach subscale represents the primary criticism of the MSOS (Vallerand et al., 1997). "The authors characterize the subscale as reflecting a 'win at all costs' orientation, but the five items constituting the subscale seem to reflect neither this orientation nor any other coherent perspective" (Bredemeier & Shields, 1998, p. 262).

Lee, Whitehead, and Ntoumanis (2007) subsequently developed a scale to more closely examine negative or antisocial attitudes in youth sport. The scale, called the Attitudes to Moral-

Decision-Making in Youth Sport Questionnaire (AMDYSQ), uses both qualitative and quantitative approaches within a social-psychological theoretical framework. The authors' initial approach involved conducting 11 focus groups with 50 male ($n = 24$) and female ($n = 26$) athletes aged 11 to 17 years from schools in southern England. The focus groups explored the attitudes and experiences of young athletes toward unethical behavior in sport. From this qualitative process, the authors conducted a content analysis that resulted in 189 possible questionnaire items falling into five frequently mentioned categories: "personal conduct, cheating, fairplay, gamesmanship, and attitudes towards winning" (Lee et al., 2007, p. 374).

After the questionnaire items were reviewed by a panel of experts with experience in developing surveys for children, the pool was reduced to 56 items, which were randomly placed in a Likert-style questionnaire. The questionnaire began in part with the following statement: "In the list below there are some things that people have said about cheating and fairplay in sport" (Lee et al., 2007, p. 374). This format allowed the researchers to assess the level of youth agreement with each statement. The survey was completed by 435 (males $n = 240$, females $n = 195$) young athletes aged 11 to 16 years ($M = 14.46$, $SD = 1.20$). Exploratory Factor Analysis (EFA) was then completed to evaluate factor structure, with items loading greater than .30 examined, but those loading greater than .40 preferred (Lee et al., 2007, p. 375). The initial EFA produced 15 factors, explaining 59.1% of the variance; however, nine factors had three or fewer items, making them impractical for use. Analysis of the scree plot showed three major factors with eigenvalues greater than 2.4, and three ranging from 1.4 to 2.4. As a result a second EFA was conducted with six factors extracted, which ultimately explained 39.7% of the variance. These factors seemed to represent practical significance for future use, in that items seemed to cluster around relevant constructs representing ethical attitudes in sport. Subsequently, EFAs

were conducted and evaluated to further distill the items into a final three-factor structure that the authors believed represented Acceptance of Cheating, Keeping Winning in Proportion, and Acceptance of Gamesmanship. These items were placed in random order into a new 15-item, three-factor questionnaire that was administered to 218 athletes (males $n = 113$, females $n = 105$) aged 11 to 16 years ($M = 12.45$, $SD = .85$), and a CFA was conducted to verify the final model.

Using several indicators of fit, Lee et al. (2007) reported that the initial model was unacceptable, and they hypothesized that this was due to both the phrasing of some of the items related to gamesmanship and the lower mean age of this set of participants. Given that gamesmanship had not previously been measured in the literature, the authors felt it was important to include the construct in any final model, therefore additional items were added and the tool retested with 1,126 young athletes (males $n = 566$, females $n = 546$, unclassified $n = 14$) aged 11 to 16 years ($M = 13.48$, $SD = 1.18$). In addition, gender invariance and “mean differences in ethical attitudes as a function of gender, age, competitive level, and type of sport” (Lee et al., 2007, p. 380) were also evaluated. As a result, the authors statistically substantiated a revised, gender invariant three-factor model of the AMDYSQ, finding interesting differences based on gender, age, and sport in respect to attitudes toward moral decision-making. Females, younger athletes, and those involved in individual sports were less accepting of gamesmanship and cheating than were males, older athletes, and team sport athletes. The acceptance of gamesmanship was also reportedly higher for those athletes involved in higher competitive levels, and keeping winning in proportion was more important to females than males (Lee et al., 2007, p. 380).

The development of the AMDYSQ by Lee et al. (2007) described a process of psychometric tool development that is extensive yet creative in its approach. The authors suggest

that the tool “accesses different facets of sportpersonship than those measured by the MSOS (Vallerand et al., 1997) in that it specifically addresses two essentially antisocial attitudes: The Acceptance of Cheating and of Gamesmanship, while also including a prosocial scale: Keeping Winning in Proportion.” The AMDYSQ could be used in conjunction with the MSOS to further flesh out the negative aspects that the MSOS fails to adequately address, although it is important to remember that the AMDYSQ and MSOS were developed in different countries with different youth populations, which could present a potential limitation to this method. Further, despite the extensive work described by Lee et al. (2007), the specific sports involved in the development of the AMDYSQ are never described.

In attempting to address some of the shortcomings of the measurement of sportsmanship mentioned previously, Kavussanu and Boardley (2009) used a social cognitive theoretical framework to develop a tool to measure prosocial and antisocial behavior in multiple English sports, including soccer, netball, hockey, rugby, and basketball. Contrary to Kohlberg’s Theory of Moral Development, which suggests that it is the individual’s motivation that matters, social cognitive theory subscribes to the concept that “in judging behavior, the consequences of the act for others rather than the motives of the actor should be the overriding consideration” (Kavussanu & Boardley, 2009. p. 98). Measuring prosocial and antisocial behaviors allows for the consideration of both proactive and inhibitive morality, which supports Bandura’s belief that moral reasoning allows for both the avoidance of negative behavior and the performance of positive behavior, as opposed to simply refraining from bad behavior (Kavussanu & Boardley, 2009). *Proactive behaviors* are defined as those voluntary behaviors performed with the intention of helping or benefiting another. *Antisocial behaviors* represent those performed with the intention of putting another at a disadvantage, or of harming them (Kavussanu & Boardley,

2009). By examining both prosocial and antisocial behaviors, a fuller picture and “a better appreciation of the social conduct that takes place in sport” (Kavussanu & Boardley, 2009, p. 99) is elucidated.

To develop the Prosocial and Antisocial Behavior in Sport Scale (PABSS) scale, the authors first provided the definitions of prosocial and antisocial behavior to coaches ($N = 12$) and players ($n = 25$) of the five sports under consideration. The coaches and players were then asked to provide as many behaviors as possible within each category that they had observed in their sport (Kavussanu & Boardley, 2009). Seven sport scientists familiar with the sports in question then removed infrequent or repetitive behaviors, and the list was reduced to a total of 68 behaviors. This list was then pilot tested with collegiate level athletes ($N = 29$) using a scale designed to determine how frequently the athletes had participated in the behaviors, using a Likert-type scale ranging from 1 (*never*) to 5 (*very often*). These data were used to identify behaviors that occurred moderately often as opposed to very frequently or infrequently ($2 < M < 4.5$), and subsequently 43 items were retained. Content validity was then assessed by six sports psychology professionals to determine whether items represented the intended prosocial or antisocial behavior, and nine items were removed at this stage, resulting in a final scale of 34 items considering prosocial behavior toward teammates ($n = 7$) and opponents ($n = 4$), as well as antisocial behavior toward teammates ($n = 6$) and opponents ($n = 17$) (Kavussanu & Boardley, 2009). The scale was subsequently tested with male ($n = 658$) and female ($n = 555$) athletes ranging in age from 12 to 64 years ($M = 21.97$, $SD = 5.47$) participating in soccer ($n = 307$), netball ($n = 179$), hockey ($n = 350$), rugby ($n = 204$), or basketball ($n = 173$). An EFA and a CFA were conducted, resulting in a four-factor model with two factors representing prosocial behavior and two representing antisocial behavior. The final scale consisted of 20 items, and the model

showed good fit with invariance across sex and sport (Kavussanu & Boardley, 2009).

Additionally, discriminant validity was established by comparing the subscales of the tool presumed to measure different constructs and confirming that they were not highly correlated. Comparing its subscales to established tools used to measure empathy, task orientation, and ego orientation proved concurrent validity of the PABSS (Kavussanu & Boardley, 2009).

Kavussanu and Boardley (2009) reported that although the PABSS is “a valid and reliable instrument to measure prosocial and antisocial behavior in sport” (p. 114), limitations to the use of the PABSS include the fact that the scale was constructed with input from participants in five specific sports; therefore, the authors suggest that it should be used only in those specific sports. Further, while the development of the PABSS reveals “a multidimensional hierarchical construct,” other dimensions of prosocial and antisocial behavior in sport may exist that need to be further verified. The authors also suggested that the scale needs to be further validated, perhaps through the comparison of behaviors reported by athletes and observed by others such as coaches or peers. Finally, the authors suggested value in using the tool to assess changes in prosocial and antisocial behavior as a result of experimental interventions designed to increase prosocial and decrease antisocial behavior (p. 114).

The mixed results in regard to whether sport builds character, and specifically enhances positive behaviors including sportsmanship, may be due in part to the mixed use of terms within the sport literature such as character, life skills, moral development and finally, sportsmanship. Further, many studies that do consider sportsmanship view it through the lens of aggression and moral development, with the rare focus on prosocial behavior. While each of these terms has a unique definition, they are often used interchangeably, which makes it challenging to compare results across studies or to make generalizations, despite the fact that some researchers have

made a focused and ongoing effort specifically on sportsmanship. If there is little agreement within academic literature as to whether sport develops sportsmanship, it is little wonder that there is also question in the media with regard to whether this occurs, and to what degree. The evidence regarding sportsmanship behavior in equestrian activity is even less clear, despite being widely identified by those involved in the sport as a topic of concern.

Sportsmanship and Competitive Equestrian Activity

As with more traditional sports such as soccer and football, showing animals may also provide a unique context for examining matters of moral development and life skill acquisition, although few studies have specifically examined these topics as they relate to equine activity. Arnold and Nott (2010) shared that 257 Oregon 4-H horse and pony project volunteer leaders completed an online survey rating the extent to which participation in the 4-H horse program helped youth develop specific life skills. The highest-ranking items were confidence, responsibility, passion, and empathy for animals. The results reported by Arnold and Nott stated that 62% of Oregon 4-H horse and pony project volunteer leaders believed competition to be “very” or “extremely” important, and that “sportsmanship was rated as the top item that competition helps youth to develop, followed closely by developing patience, goal setting, and coping with disappointment.” While this information provides a valuable addition to the literature, a prominent limitation of this study is that no clear definitions of life skills or sportsmanship were provided; therefore, respondents relied on their own definition of the concepts, which would likely vary from individual to individual.

Through a Likert-type survey mailed to youth participants in the Pennsylvania 4-H Horse Program, the American Quarter Horse Youth Association, the U.S. Pony Clubs, and the National High School Rodeo Association, Smith et al. (2006) found that youth ($n = 329$) involved in 4-H

and other equine organizations reported that they “often” use life skills related to decision making, communicating, goal setting, and problem solving. Further, the authors described a significant positive relationship ($r = .501, p < .01$), and suggested that 25% of youths’ life skills development can be attributed to the development of horsemanship skills (Smith et al., 2006). While there may be truth to this statement, it may also be a result of selection bias, which is to suggest that those young people who are dedicated to equestrian activities may also demonstrate enhanced life skills development regardless. The authors further reported that a linear regression determined that horsemanship skills, including riding, handling, safety, health, management, and equine nutrition, explained 25% of the variance in life skills development. This study does not include a control group, nor does it ask questions about other activities that youth may be involved in that may play a role in life skills development, and once again, it relies on self-reporting as opposed to observation or other types of reporting. While the data provided an interesting contribution to the literature, it is important to keep in mind that a significant correlation does not indicate causation; therefore, it is difficult to assess from this study whether this is a result of participation in equine activities. Future studies are needed to provide a more solid case about the relationship between life skills development and equestrian activity.

Finally, in unpublished work evaluating youth participation in competitive state-level, multispecies events, Waite, Ondersma, Shelle, Heleski, and Kaiser (2010) conducted a mailed survey of parents and youth participants. The study obtained a response rate of 29.5% for a total of 425 youth, and found that 60% to 80% of Michigan youth participants and their parents reported an increase in youth self-confidence, goal setting, self-esteem, responsibility, and concern for animal well-being as a result of participation in a long-term animal science project that included a state-level experience such as the State 4-H Horse Show. In addition, Waite et al.

(2010) found that 60% of youth exhibitors at these events, including the State 4-H Horse Show, disagreed or strongly disagreed that they had developed a “win at all costs attitude” as a result of participation, while 23% indicated that they neither agreed nor disagreed with the statement. Interestingly, 16.7% of participants indicated that in fact they had developed a “win at all costs attitude” as a result of participation, which is cause for concern. Once again, participants were not provided specific definitions of any of these concepts but instead relied on their own definitions. Therefore while the information is valuable, it is somewhat limited. It does lend additional support, however, to the concern that participants in equestrian sport, like those in traditional sport, may not automatically develop good sportsmanship, as is often believed. Hansen, Larson, and Dworkin (2003) suggested that the pattern of learning experiences youth report as a result of sport participation may be described as “character building and character challenging” (p. 50), in that while youth report frequent learning experiences in the areas of self-knowledge, emotional regulation, and physical skills, they also experience higher rates of negative peer interaction and inappropriate adult behavior. Therefore, it may be that while young people often learn good sportsmanship through participation in traditional sport or in showing horses, doing so is not a foregone conclusion.

It does in fact appear that there is somewhat of a disconnect between the idea that participation in equestrian sport is an unquestionable means of developing good sportsmanship and what actually occurs, based on the information provided by both Waite et al. (2010) and on a survey conducted at an MSU Extension workshop on horse show ethics (Skelly et al., 2005) attended by horse owners, trainers, judges, 4-H volunteer leaders, and parents ($n = 45$). This survey determined that the top five ethical concerns pertaining to horse shows were matters of sportsmanship, horse welfare issues, violations of rules and regulations, concerns about fair

judging, and parenting issues (Skelly et al., 2005). The top three of these ethical concerns (sportsmanship, horse welfare issues, and violations of rules and regulations) address matters of health and safety for both exhibitor and horse. Providing further support for the idea that these issues are indeed matters of national concern in competitive equine sport, the AQHA introduced a stewards program in 2010. Approved stewards are expected to address issues of “the humane treatment of horses, as well as enforcement of safety issues and consistent adherence to breed rules for all exhibitors” at sanctioned AQHA shows (Reynolds, 2010). It is likely that the prosocial and antisocial behaviors in sport identified in the work of Kavussanu and Boardley (2009) and Vallerand et al. (1996) are similar as they relate to the human aspect of competitive equestrian activity; however, the impact of human behavior on the equine involved in such activities has yet to be thoroughly examined.

Anecdotal reports of incidents of poor sportsmanship behavior in competitive equestrian activities have been made and are often tied to horse welfare issues. When an exhibitor becomes frustrated with a performance in the arena, his or her own teammate, the horse, may be the recipient of physical aggression (such as jerking on the reins, and therefore the horse’s mouth, excessive use of the leg, whip, or spur, or some combination thereof). Further anecdotal suggestions of poor sportsmanship in competitive equestrian activity include the use of illegal, performance enhancing drugs, harsh training techniques, and encouraging competitors in such behavior. For example, in gymkhana events, young exhibitors may be encouraged by adults to strike or excessively spur a horse to encourage it to go faster, even though such behaviors would be cause for disqualification in many other events. No research has been published reporting the frequency of such aggressive riding techniques in this or any other competitive equine activity, however. Further, while the intention may not be poor sportsmanship, the question remains as to

whether the use or encouragement of aggressive riding is appropriate behavior on the part of youth exhibitors or the adults accompanying them. In fact, this may be an example of moral disengagement as described by Bandura, whereby “self sanctions can be disengaged from inhumane conduct “ (Bandura, 1999, p. 197) through “cognitive restructuring of inhumane conduct into a benign or worthy one by moral justification, sanitizing language, and advantageous comparison; disavowal of a sense of personal agency by diffusion or displacement of responsibility; disregarding or minimizing the injurious effects of one’s actions; and attribution of blame to, and dehumanization of those who are victimized” (Bandura, 1999, p. 197). In the case of competitive youth equestrian events, the victim may be the horse, the young rider, or both.

Clearly, “The *sine qua non* of sport is competition. The goal is to win” (Eitzen, 1988, p. 20), and this is true in equestrian sport as well. Eitzen (1988) goes on to say, however, that “to be ethical this quest to win must be done in a spirit of fairness” (p. 20), and this includes fairness to the horse. Despite the commonly held belief that whipping or spurring a horse will make it go faster, there is actually research to suggest that these types of human behaviors or aggressive riding techniques have the opposite effect. A study by Evans and McGreevy (2011) investigating the use of the whip and subsequent performance in Thoroughbred racing found that horses reached their highest speeds when no whip was used, and that increased whip use was in fact not a predictor of superior placing at the end of the race. Regardless of intent, displays of aggressive riding may not only cast an unfavorable light on equestrian sport, but they may be ineffective. In addition, questions are raised with regard to moral reasoning, as well as animal welfare and treatment, when youth are encouraged by adults to engage in aggressive riding techniques. Study

of the horse and its behavior in competitive environments could provide useful information with respect to these topics.

As previously stated, aggressive riding could actually cause a horse to slow down, or at least not speed up; both of these responses are contrary to what is desired. Harsh treatment could also influence horse behavior in other ways, to the point that the horse's behavior tells the story of the rider's unsporting behavior, even if the individual reports that he or she is in fact learning good sportsmanship as a result of participation. In the short term, horses ridden aggressively or inappropriately may demonstrate conflict, stress and frustration behaviors similar to those demonstrated by therapeutic riding horses and described by Kaiser, Heleski, Siegford, and Smith (2006), such as head tossing, tail wringing, bucking, and backing up. Over time, an aggressively ridden horse may learn that the show arena is not a pleasant place to be, and may refuse to enter. Anecdotal evidence suggests that horses who fight entering the gate (with behaviors such as bolting, rearing, and on extreme occasions, flipping over) present a danger to both their riders and the horses and humans around them. No work has been published actually quantifying the incidence of this behavior, or the impact of using aggressive behaviors on the outcome of youth events, however.

Shields and Bredemeier (1995) stated "Any moral claim is subject to scrutiny by all interested parties" (p. 50). In the case of competitive equestrian activity, this scrutiny should include examination of the horse. True sportsmanship in equestrian events, indeed in any competitive activity involving an animal, must not take a human-focused perspective exclusively, but should include a construct of respect for the animal as part of its definition. Again, "Sport has the potential to ennoble its participants and society. Athletes strain, strive, and sacrifice to excel. But if sport is to exalt the human spirit, it must be practiced within a context

guided by fairness and humane considerations” (Eitzen, 1988, p. 27). Beyond the ethical framework, one also must consider that inhumane treatment of a horse in the form of aggressive riding has the potential to be dangerous to all involved.

Gaps in the Literature

Despite several studies of the relationship between the development of life skills and participation in competitive equestrian activity (based primarily on self-reporting through invalidated surveys), there has been no ongoing line of research to date in regard to sportsmanship in competitive equestrian activity. Despite many anecdotal and research-based concerns about sportsmanship and animal welfare, there is limited data about the frequency with which aggressive riding occurs, or of the conflict behaviors displayed by the horse as a result of this riding. The development of a method and quantification of the frequency with which these behaviors occur is the starting line or jumping off point for research about sportsmanship and competitive equine welfare.

As in more traditional sport, there is no commonly held definition of what constitutes sportsmanship in competitive equestrian activity. Unlike more traditional sport, however, this is likely because work done to establish a definition of sportsmanship in competitive equestrian activity is limited or nonexistent. Modifying the work that has been done in traditional sport and basing it in a framework of social cognitive theory that includes respect for one’s equine partner would be of value to those working with competitive riders at any level. As stated previously, “in judging behavior, the consequences of the act for others rather than the motives of the actor should be the overriding consideration” (Kavussanu & Boardley, 2009, p. 98). In this case, the “other” may also include one’s equine partner. The perspective of social cognitive theory also offers a more positive and optimistic approach to defining sportsmanship in competitive

equestrian activity than do some other theoretical views, through the recognition of both proactive and inhibitive morality and the identification of prosocial and anti social behaviors, regardless of the level of one's moral development. By focusing on both the positive and negative aspects of behavior (as opposed to only the negative), riders, coaches, and trainers will have a much richer definition of competitive behavior in horse shows. Further, such a definition holds the potential to allow for the operationalization of positive sportsmanship, and avoidance of negative sportsmanship in competitive equestrian activity by practitioners in the field.

Finally, in order to establish an ongoing line of research in sportsmanship in competitive equestrian activity, a psychometrically validated tool to measure sportsmanship is required. To date, most published studies have reported on surveys that may or may not have been validated, and that explored the terms "life skills" and "positive youth development" through horses, without ever really defining the concepts or drilling down to determine the constructs that make up sportsmanship behaviors in competitive equestrian activity. With the creation of such a tool, ongoing efforts and interventions could be conducted and evaluated to hypothetically increase prosocial behavior and decrease antisocial behavior in competitive equestrian sport over the long term.

CHAPTER 3

STUDY ONE: QUANTIFYING AGGRESSIVE RIDING BEHAVIOR OF YOUTH BARREL RACERS AND CONFLICT BEHAVIORS OF THEIR HORSES

Introduction

Evans and McGreevy (2011) stated that in racing Thoroughbreds, horses actually reach top velocity when no whip is used, and that increased whip use is not related to variation in velocity or improved finish position. In gymkhana events, exhibitors are often encouraged by others to strike or excessively spur their horse to encourage them to go faster, even though such behaviors would be cause for disqualification in most other horse show events (Michigan 4-H Youth Development, 2011). Unfortunately, no work has been done to quantify the use of aggressive riding in gymkhana events. While the rider's intention may not be poor sportsmanship, the question remains as to whether use or encouragement of aggressive riding is appropriate or even effective behavior, given that it may not actually increase the horse's speed. In addition, few studies have considered the impact of rider behavior on subsequent horse behavior in the show arena. With these thoughts in mind, the objectives of this study were (a) to quantify the incidence of aggressive riding behaviors (e.g., jerking on the horse's mouth, excessive whipping, kicking, or spurring) among youth horse show participants in a timed barrel racing class, as well as the stress, conflict, and frustration behaviors of the horse, and (b) to correlate behavior counts on the part of both horse and rider with the final time of the run. The first hypothesis of the current study was that a positive correlation exists between aggressive rider behaviors and performance time, that is, as the frequency of aggressive riding techniques increases or decreases, final times will increase or decrease, respectively. The second hypothesis was that a positive correlation exists between aggressive rider behaviors and horse behaviors,

that is, as the frequency of aggressive riding techniques increases or decreases, the incidence of stress, conflict, and frustration behaviors of the horse will similarly increase or decrease.

Methods

Participants

The participants for the study were 69 youths aged 16 to 19 years, competing in the cloverleaf barrel race class at the Michigan State 4-H Horse Show. This class was chosen because it allowed for video recording of individual runs of specific horse and rider pairs. Patterns were of the same measured distance, in the same arena, with the same footing conditions (see Figure 1).

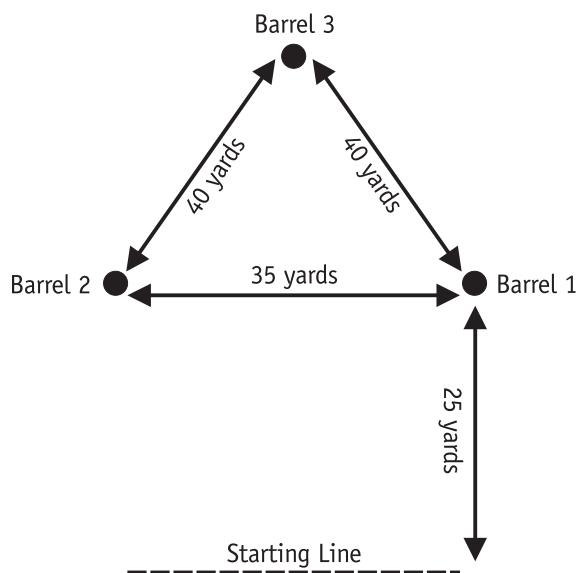


Figure 1. Cloverleaf Barrel Pattern (Michigan 4-H Youth Development, 2011).

Procedure

Permission to conduct the study was obtained from the MSU Committee on Research Involving Human Subjects and the MSU Institutional Animal Care and Use Committee

(Appendices A and B). Each horse and rider combination was videotaped using a digital video camera positioned to include the approach to the gate at the start of the run. A run was considered to have started when the horse crossed the start-finish line and was completed when the horse was stopped and the rider began to dismount. Final run times were recorded.

The videotaped run of each horse and rider was uploaded onto a password-protected computer. Three trained observers assessed horse and rider behaviors separately, recording counts of each using an ethogram of carefully defined behaviors, as described in Table 1. Training consisted of a face-to-face meeting in which observers were familiarized with the ethogram. Observers were then shown several sample video clips and practiced using the ethogram to count behaviors. Discussion was allowed during the training phase; however, observers were instructed not to communicate with one another about the video clips once the study began. Criteria for interobserver reliability of trained personnel was determined to be 65% or higher for each behavior for inclusion in statistical analyses. Hartmann (1977) suggested that “percentage agreement of 80% for trial reliability seems to have some consensus among applied behavioral researchers” (p. 113), that correlation coefficients should exceed .60, and that “the greater the variability of the target behavior the higher must be the interobserver reliability for there to be a reasonable likelihood of detecting the change produced by treatment” (p. 114). Given that the likely level of behavior variability before the study was unknown, the choice was made to select .65 as the minimum cutoff for interobserver reliability. The ethogram was developed using an ethogram of equine conflict, stress, and irritation (CSI) behaviors used in previous studies by Kaiser et al. (2006), as well as a pilot test of behaviors of horses videotaped during cloverleaf barrel race runs from an event held at the same facility during an earlier part of the year.

Table 1

Cloverleaf Barrel Race Ethogram

Behavior	Description
Head toss	Horse moves head quickly out of “neutral” position (i.e., where it is positioned the majority of the ride); oscillation; will contain some movement in medial-lateral plane
Head shake or head toss	Movement in vertical plane dorsally or ventrally; might be only nose
Ears pinned back	Ears pressed caudally against the poll area of the neck
Tail lash or swish	Dorsal-ventral movement of caudal vertebrae; movement of tail beyond that of simple rhythmic swaying of the tail; and/or circular (or medial-lateral) movement of caudal vertebrae
Pop up	Horse raises forelegs off the ground, even with hock level or lower
Rear	Horse raises forelegs off the ground, higher than hock level
Buck	Horse kicks hind legs out behind itself
Back three steps or more	Horse takes three steps or more in reverse, when asked to go forward
Back two steps or less	Horse takes two steps or less in reverse when asked to go forward
Evade	Horse moves away from rider’s cue as opposed to performing maneuver
Jerking on reins	Rider uses “excessive” force quickly applied to the horse’s mouth via the bit and reins
“Excessive” spurring	Rider uses “excessive” (more than one touch) spurring on the horse’s ribcage area to encourage horse to go faster or to punish a horse behavior that may or may not be able to be discerned
“Excessive” kicking	Rider pulls leg or legs more than 45 degrees off the side of the horse and kicks the horse in the side more than once
Tap with whip, reins or other similar equipment	Light tap with whip. Whip not raised more than 3 inches over the horse’s hip or flank
Whip with whip, reins or other similar equipment	Rider strikes horse with the whip, raising the whip more than 3 inches over the hip or flank.

Gate Scoring

Anecdotal evidence suggests that the approach to the entry gate can be a potentially dangerous time for horses, riders, and bystanders in gymkhana events, including cloverleaf barrel racing, with some horses refusing to enter the gate and other horses showing potentially dangerous avoidance behaviors. Many associations (including 4-H) have implemented rules limiting the amount of time a rider has to navigate the horse through the gate for reasons of safety to both horse and human (Michigan 4-H Youth Development, 2011). It may be that some horses have experienced a form of context-specific learning such that “through classical conditioning, the horse learns to exacerbate flight-response behaviors in certain places and contexts” (McGreevy & McLean, (2010). In an effort to evaluate horse behavior while entering the arena, trained observers also assigned each horse a gate score ranging from 1 to 3, as described in Table 2. Gate scores were evaluated from the time the horse began its approach until the time it entered and turned such that its body was parallel with the fence.

Table 2

Gate Scoring Description

Score	Description
1	Horse enters gate calmly, without issue
2	Horse seems agitated, raises head and bumps tie down (if wearing one), may jig or move up and down with a quick motion.
3	Horse is extremely agitated, pops up or rears, shakes head excessively, refuses to enter, may need assistance through gate or other means of direction. Horses do not need to do all of these behaviors to be considered a “3.”

Statistical Methods

Descriptive statistics were generated and reliability measures were used to analyze interrater agreement, using the respective procedures of SPSS 19. Those behaviors with Cronbach's alpha of less than .65 were removed from analysis. Due to the inability to separate specific behaviors, the categories of head toss and head shake were combined into one category titled head movement. Similarly, kicking and spurring were combined into one category, as were rears and pop ups. Correlations were calculated between incidence of aggressive riding and final time, as well as incidence of horse behavior and final time, with $p < .05$ considered significant for all analyses.

Results

Interrater Reliability

Interrater agreement for each gate score and evaluated horse or human behavior is described in Table 3. Criteria for interobserver reliability of trained personnel were generally high, and ranged from 0.69–0.97 with the exception of evasion at .49, therefore, evasion was removed from the analysis. Mean counts for each behavior across the three observers were then calculated and used in the subsequent analysis.

Table 3

Interrater Reliability of Gate Score and Horse or Human Behavior

Behavior	Cronbach's alpha
Gate score	0.89
Head movement	0.87
Tail swish or lash	0.94
Evade	0.49
Jerking reins	0.69
Whipping	0.98
Kicking or spurring	0.93
Rears or pop ups	0.90

Descriptive Statistics

A total of 69 horse and rider pairs completed the pattern, with three disqualified for going off pattern. Therefore, a total of 66 horse and rider pairs were included in the final analysis. Due to technical issues related to filming, 59 horse-rider pairs were included in Gate Score counts. Descriptive statistics for each behavior mean are described in Table 4. Mean horse behavior and mean rider behavior represent a combined average of incidence of all behaviors included in each respective category. Those behaviors not showing normal distribution were log transformed. The most salient points to note include the degree of variation in horse behaviors. For example, the standard deviation of tail swish or lash is greater than the mean, as is the standard deviation of rears or pop ups and hitting or whipping.

Table 4

Time, Gate Score, Behavior Ranges, and Means

Time, gate score, or behavior—horse	Range	<i>M</i>	<i>SD</i>	<i>N</i>
Time(s)	17.0–25.0	19.3	1.77	66
Gate score	1.00–3.00	1.70	.714	59
Head movement	.66–15.7	4.33	2.67	66
Tail swish or lash	0–27.0	4.51	5.04	66
Jerking reins	0–4.7	1.66	1.09	66
Hitting or whipping	0–10.0	2.44	3.00	66
Kicking or spurring	0–32.3	9.51	7.14	66
Rears or pop ups	0–11.0	.631	1.70	66
Mean total rider behavior	0.33–11.2	13.62	2.52	66
Mean total horse behavior	0.22–12.1	3.16	2.36	66

Correlations

Correlations between average final run time and behavior are highlighted in Table 5, while correlations between human and horse behaviors are described in Table 6. There were no statistically significant correlations between specific horse or rider behaviors and average final run time, although head movement and average run time approached significance ($p = .051$). Additionally, there were no statistically significant relationships between mean rider behaviors overall ($r = -0.20$, $p = 0.12$) or mean horse behaviors overall ($r = 0.12$, $p = 0.35$) and average run time.

Table 5

Correlations Between Average Final Run Time and Behavior

Behavior	Average final run time (seconds)	<i>r</i>	Significance (2-tailed)
Gate score	19.31	-.20	.120
Head movement	19.31	.25	.051
Tail swish or lash	19.31	.07	.594
Jerking reins	19.31	.18	.153
Whipping	19.31	-.09	.497
Kicking or spurring	19.31	-.20	.116
Total rider behavior	19.31	-.20	.118
Total horse behavior	19.31	.12	.353

There were small but significant relationships between mean kicking or spurring and mean rears or pop ups ($r = 0.29, p = 0.02$), mean head movement and mean tail swish ($r = 0.30, p = 0.02$), and mean rears or pop ups and mean tail swish ($r = 0.36, p = 0.003$). Approaching significance ($p = .07$) were mean gate and mean rears or pop ups. These findings suggest that horses displaying a specific conflict, frustration, or irritation behavior may also display others, and in the case of kicking or spurring on the part of the rider, horses may be prone to increased conflict, frustration, or irritation behavior. Correlations do not equate to cause and effect, but these data suggest that there is a connection between some horse and rider behaviors.

Table 6

Correlations Between Horse and Rider Behaviors

Behavior	Mean gate	Mean kicking or spurring	Mean whipping	Mean tail	Mean rear or pop up	Mean head
Mean gate	1	.05	.25*	.13	.23	.03
Mean kicking or spurring		1	-.07	.15	.30*	.06
Mean whipping			1	-.02	.11	-.04
Mean tail				1	.36** .003	.29* .02
Mean rear or pop up					1	
Mean head						1

*Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Multiple regression was also conducted with all horse and human behaviors to further examine the relationship between behavior and final run time, and produced $R^2 = .366$, $F(6, 57) = 1.367$, $p = .244$. None of the behaviors contributed to the multiple regression model, and these results again suggest that there is no relationship between horse or rider behavior and final run time, for this set of horses and riders.

Evaluation by Ranked Final Run Time

In an additional effort to determine if there were differences in horse and rider behavior based on final run time, a new variable was created through a tertiary division of the run times into the fastest third, the middle third, and the slowest third. This procedure resulted in nearly equal numbers of participants in each group. Means for each gate score, horse behavior (see

Table 7) and human behavior (see Table 8) are presented. It is interesting to note that the middle group demonstrated both numerically greater Total Horse and Total Human behaviors than the fastest and slowest groups.

Table 7

Comparison of Gate Score and Mean Horse Behaviors by Ranked Run Time

Behavior	<i>N</i>	<i>M</i>	<i>SE</i>
Mean gate			
Fast	22	1.90	0.16
Middle	22	1.83	0.14
Slow	20	1.40	0.15
Total	64	1.70	0.09
Mean head			
Fast	22	3.65	0.41
Middle	22	4.68	0.53
Slow	20	4.70	0.80
Total	64	4.33	0.34
Mean tail			
Fast	22	4.03	1.04
Middle	22	4.76	1.18
Slow	20	4.93	1.13
Total	64	4.56	0.64
Mean rear or pop up			
Fast	22	0.74	0.35
Middle	22	0.88	0.50
Slow	20	0.25	0.15
Total	64	0.64	0.22

Table 7 (cont'd)

Total horse behavior			
Fast	22	8.42	1.50
Middle	22	10.30	1.60
Slow	20	9.88	1.61
Total	64	9.53	0.90

Table 8

Comparison of Mean Human Behaviors by Ranked Run Time

Behavior	<i>N</i>	<i>M</i>	<i>SE</i>
Mean rein jerk			
Fast	22	1.32	0.19
Middle	22	1.97	0.25
Slow	20	1.72	0.27
Total	64	1.67	0.14
Mean hit whip			
Fast	22	1.91	0.59
Middle	22	3.95	0.71
Slow	20	1.17	0.45
Total	64	2.38	0.37
Mean kick or spur			
Fast	22	10.80	1.78
Middle	22	9.97	1.08
Slow	20	7.15	1.72
Total	64	9.37	0.90

Table 8 (cont'd)

Total rider behavior			
Fast	22	14.03	1.88
Middle	22	15.90	0.90
Slow	20	10.03	1.78
Total	64	13.42	0.94

Means by ranked run time were compared using a one-way Analysis of Variance (see Tables 9 and 10). Tukey HSD post hoc comparisons revealed no difference in any horse behavior considered by ranked final run time. However, there was a significant difference between Mean Hit or Whip and Total Rider Behavior by ranked final run time (see Table 11), in that those riders in the middle third delivered an average of two more whip strikes than those in the fastest third ($p = 0.046$). Riders in the middle third also delivered 2.78 more whip strikes than those in the slowest group, however. Riders in the middle third did employ significantly more instances of aggressive riding than those in the slowest third ($p = 0.030$), however, there was no difference in Total Rider Behavior between the fastest and middle third, or the fastest and slowest third.

Discussion

While there is much concern in the horse industry about sportsmanship and animal treatment, there is little information actually documenting frequency or incidence of aggressive riding behavior and how it affects horse behavior. This study is one of the first to quantify the incidence of aggressive riding behaviors in a cloverleaf barrel race, as well as the stress, conflict, and frustration behaviors demonstrated by the horse, and to examine the relationship between aggressive riding behaviors and final run time.

Table 9

Analysis of Variance With Repeated Measures for Horse Behavior by Ranked Run Time

Behavior	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Significance
Mean gate					
Between groups	3.202	2	1.601	3.373	0.041*
Within groups	28.958	61	.475		
Total	32.160	63			
Mean head					
Between groups	15.588	2	7.794	1.065	.351
Within groups	446.412	61	7.318		
Total	462.000	63			
Mean tail					
Between groups	9.819	2	4.909	.183	.833
Within groups	1635.042	61	26.804		
Total	1644.861	63			
Mean rear or pop up					
Between groups	4.526	2	2.263	.750	.477
Within groups	184.078	61	3.018		
Total	188.604	63			
Total horse behavior					
Between groups	43.063	2	21.532	.410	.665
Within groups	3203.763	61	52.521		
Total	3246.826	63			

* Significant at the .05 level.

Table 10

Analysis of Variance With Repeated Measures for Human Behavior by Ranked Run Time

Behavior	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Significance
Mean rein jerk					
Between groups	4.742	2	2.371	2.030	.140
Within groups	71.258	61	1.168		
Total	76.000	63			
Mean hit whip					
Between groups	88.864	2	44.432	5.740	.005**
Within groups	472.217	61	7.741		
Total	561.082	63			
Mean kick or spur					
Between groups	151.657	2	75.829	1.480	.236
Within groups	3125.121	61	51.231		
Total	3276.778	63			
Total rider behavior					
Between groups	372.233	2	186.116	3.528	.035*
Within groups	3217.599	61	52.748		
Total	3589.832	63			
Total horse behavior					
Between groups	43.063	2	21.532	.410	.665
Within groups	3203.763	61	52.521		
Total	3246.826	63			

*Significant at the 0.05 level. **Significant at the .01 level.

Table 11

Multiple Comparisons, Human Behavior by Ranked Run Time

Dependent variable	(I) timnrec	(J) timnrec	Mean difference (I-J)	SE	Significance
Mean gate	1	2	.030	.208	.988
		3	.497	.213	.059
	2	1	-.030	.208	.988
		3	.467	.213	.081
	3	1	-.497	.213	.059
		2	-.467	.213	.081
Mean rein jerk	1	2	-.652	.326	.121
		3	-.398	.334	.462
	2	1	.652	.326	.121
		3	.253	.334	.730
	3	1	.398	.334	.462
		2	-.253	.334	.730
Mean hit whip	1	2	-2.05	.839	.046*
		3	.742	.860	.665
	2	1	2.05	.839	.046*
		3	2.79	.860	.005*
	3	1	-.742	.860	.665
		2	-2.79	.860	.005*
Mean kick or spur	1	2	.833	2.16	.921
		3	3.65	2.21	.232
	2	1	-.833	2.16	.921
		3	2.82	2.21	.415
	3	1	-3.65	2.21	.232
		2	-2.82	2.21	.415

Table 11 (cont'd)

Total rider behavior	1	2	-1.86	2.19	.673
		3	4.00	2.24	.184
	2	1	1.86	2.19	.673
		3	5.86	2.24	.030*
	3	1	-4.00	2.24	.184
		2	-5.86	2.24	.030*

* Significant at the .05 level

These data revealed that youth riders participating in the cloverleaf barrel race at the event hit or whipped their mounts an average of 2.44 ($SD = 3.00$) times, kicked or spurred their horses an average of 9.51 ($SD = 7.14$), and jerked the reins an average of 1.66 ($SD = 1.09$) times per average run time of 19.3 s ($SD = 1.77$), respectively. The standard deviations of these behavior means indicate that there is a large amount of variation between riders, suggesting that while some riders engage in aggressive behaviors extensively, others do not. For example, the incidence counts of total rider behaviors ranged from 1 to 33.7 with a mean total rider behavior of 13.62 ($SD = 7.56$).

From a practical perspective, there are several important points to be taken from these data. First, there were no statistically significant correlations between horse or rider behaviors and time, suggesting that there was no relationship between aggressive riding behavior overall and final run time, for this set of horses. This is an exciting finding in that it refutes the commonly held belief that striking a horse improves final run time. Further, there was neither a competitive advantage nor disadvantage with the employment of the aggressive riding techniques as defined for the purpose of this study. Although these data show that the 22 horses

in the middle third of the ranked run times were subjected to more aggressive riding and did display faster run times than those in the slowest third, one should also consider this from an actual performance perspective, given that this is a competitive activity. The event studied places and publically recognizes only the top 10 horse and rider teams. Those horse and rider pairs in the middle and slowest thirds ranged from 23rd to 64th finish positions; therefore, despite beliefs commonly held by young riders and the adults who coach them, there is no practical reason to engage in aggressive riding techniques to any large extent from the perspective of social recognition. While this is not to say that a tap or two with a whip, or a kick or two with the leg may never be advantageous in restoring a horse's attention to the job at hand, or encouraging a horse to go forward, in the long term and with excessive application, horses may become dull or desensitized to a rider's aids in that "the horse has learned to respond only to strong signals as a result of poor application of either pressure or timing, or both" (McGreevy & McLean, 2010, p. 64).

Despite the fact that there was no relationship between horse and rider behavior and final time, there were small but statistically significant relationships between some rider and horse behaviors. Mean gate score, for example, was positively correlated with mean whip or hit ($r = 0.25, p = 0.046$), suggesting that gate score and the degree of horse agitation increased with an increase in number of subsequent strikes of the whip. Given that in the current study whip strikes actually occurred after the gate score was evaluated, one could postulate that the rider may habitually use the whip, and therefore the horse is in fact experiencing context-specific learning, making it more prone to agitation or a learned flight response. One cannot say this for certain, however, based on these data alone. Mean kicking and spurring were also positively correlated with mean pop ups or rears ($r = 0.298, p = 0.015$) indicating that a horse may be more likely to

pop up or rear the more a rider tends to kick or spur. In extreme cases, rearing may ultimately result in the fall of horse, rider—or in particularly dangerous cases—the fall of the horse on top of the rider. In any scenario, pop ups and rearing are wasted movements on the part of the horse and, thus, could be eliminated without affecting the team's final run time.

Finally, there were also statistically significant relationships between specific horse behaviors, including mean tail swish and pop up or rearing ($r = 0.36, p = 0.003$) and mean tail swish and mean head movement ($r = 0.30, p = 0.016$). Thus, a horse inclined to show one frustration behavior might also show others. Also, the horses in this study showed a greater incidence of CSI behavior, specifically as it relates to head movement, than horses in other studies have shown. For example, 14 horses used in a therapeutic riding program (Kaiser et al., 2006) demonstrated a mean of 0.22 to 1.86 stress-related behaviors (including but not limited to head movement) in a 2-minute observation period, as compared to the average of 4.33 incidents of head movement in an approximately 19.31-second period seen in the current study. The horses in the therapeutic riding study were involved in a noncompetitive activity conducted at a much slower pace than those in the current study, yet still displayed some behaviors that would indicate conflict, frustration, or irritation. In the same therapeutic riding study, seven horses used in an advanced riding program demonstrated a more similar rate of incidence of stress behaviors, again including but not limited to head movement, as those seen in the current study, at 2.5 to 4.3 (Kaiser et al., 2006). Once again, however, this was in 2 minutes, as opposed to the mean 19.3-second period of time in the current study. It may be that the riding techniques employed in the current study, based on the traditional belief that aggressive riding increases speed in the horse, actually increased the demonstration of CSI behaviors in the horses involved.

A final practical point to note is that despite the level of variation in occurrence, people tend to remember and fixate on behavioral extremes. The general public is becoming more interested in the treatment and life conditions of animals (Kendall, Lobao, & Sharp, 2006), and this interest may extend to competitive equestrian activities such as the one detailed here. For example, if a spectator viewed only a few cloverleaf barrel race runs, he or she could leave with a very different perspective of rider behavior. Were the person to witness riders refraining from the use of aggressive riding techniques, he or she could conclude that aggressive riding techniques are not common. Similarly, were the same spectator to witness a rider at the high end of the total behavior range, he or she might conclude that most riders do ride aggressively, which would not be positive for the show horse industry as a whole. Second, and perhaps more important, is the degree to which riders engage in this form of aggressive riding. For any rider to engage in 33 acts of kicking or spurring a horse in a run with an average time of 19.3 seconds is cause for concern from both a youth development and an animal treatment perspective.

Because of the competition involved in barrel racing, final time is important to consider when looking at rider behaviors and horse frustration behaviors. In an effort to further elucidate the relationship between final run time, incidence of aggressive rider behavior, and horse frustration behaviors, a new variable was created that grouped horses and riders by final run time into the fastest third, the intermediate third, and the slowest third. This analysis determined that there was a statistical difference between ranked time and mean hit or whip, and ranked time and total rider behavior. Riders in the intermediate third had a greater incidence of hitting and whipping (3.95 ± 0.71 , $p = 0.005$) than riders in either the fastest (1.91 ± 0.59) or slowest third (1.17 ± 0.45). This may be a result of the belief that hitting the horse may increase its velocity, which in this instance did not appear to be true. Finally, riders in the intermediate third

demonstrated a greater number of total rider behaviors (15.89 ± 0.90 , $p = 0.04$), as compared to the slowest third (10.03 ± 1.78 , $p = 0.04$), but there was no statistical difference in total rider behaviors between the intermediate and fastest third (14.03 ± 1.88). It is possible that those riders in the intermediate third believed that employing aggressive riding techniques could result in their horses finishing with times similar to those being recorded by the fastest group, and as a result were “trying harder” than those in the slower group, who may not have believed their horses had the potential to run as fast, based on previous experience.

There is anecdotal concern regarding the degree to which riders in youth gymkhana events, including cloverleaf barrel racing, use aggressive riding techniques and horses becoming stressed, agitated, and potentially dangerous when entering the arena for these events. At the same time, there is a commonly held belief that the use of aggressive riding techniques will increase the speed of a horse, and adults working with youth in equestrian activities often encourage the use of these techniques. While these data support the belief that aggressive riding is frequently used, they do not support the hypothesis that there is a relationship between final run time and use of aggressive riding technique and, therefore, a competitive advantage. There are, however, small but significant relationships between specific rider and horse behaviors suggesting that employment of such behaviors increases the potential for horses to become agitated. Again, an agitated horse is wasting energy and may experience burnout faster. Future research is warranted, and may include rider characteristics such as goal orientation and trait anxiety, which may lead to differences in aggressive riding behavior.

One limitation to the current study is that the event studied was a state-level competition, which many horses and riders had to qualify to attend, suggesting the potential for a higher level of skill than average. It may be that the sample population evaluated is not representative of

gymkhana riders at the 4-H level around the state or country; however, it does not negate the fact that aggressive riding techniques are often used and that horses demonstrated CSI behaviors in the event studied. It is possible that those horses and riders who did not qualify might demonstrate even more instances of aggressive riding than did those in the current sample, and as a result their horses might demonstrate more CSI behaviors, potentially slowing the horses down. Of course more work would need to be done to make this assertion. It is also important to note that all riders displayed at least one behavior defined as aggressive for the purposes of this study. Interestingly, gymkhana events (including the cloverleaf barrel race) are the only horse show events in which officials tolerate use of the whip to the degree shown in this study, and that is in fact currently considered legal under the rules (Michigan 4-H Youth Development, 2011).

Finally, it is important to note that the speed of a horse is based on genetic factors; management considerations such as health, nutrition, and conditioning; and riding technique, all of which may influence final run time. There will always be horses that are faster or slower than other horses. It is possible, however, that the use of aggressive riding techniques may actually make a horse slower than it would be without such techniques. This could be due to an increase in the number of CSI behaviors the horse demonstrates, the horse's desensitization to rider cues, or the refocusing of the horse's attention on the rider, instead of the finish line.

This study raises several questions for future consideration. For example, do young riders engaging in these behaviors, especially if the behaviors are tolerated or encouraged by parents or other adults, become less sensitive to issues of equine welfare through the moral disengagement process described by Bandura (1999)? Additional questions are also raised regarding the relationship between the degree to which aggressive riding behaviors are employed and respect for one's equine teammate, and for equestrian sport in general. Sportsmanship has been

described as “an intense striving to succeed, tempered by commitment to a ‘play spirit’ such that ethical standards will take precedence over strategic gain when the two conflict” (Shields & Bredemeier, 1995). If a horse has reached its maximum speed, is it ethical or fair to continue to use the whip on it? Gano-Overway et al. (2005) suggested that sportsmanship “taps an athlete’s identity to respect the game (i.e., follow the rules and obey officials), treat others with respect, and respect one’s self (i.e., put forth one’s best effort to make the contest fair and challenging for self and others) while avoiding the winning-at-all-cost attitude” (p. 4). When an exhibitor becomes frustrated with his or her performance in the arena, his own teammate, the horse, may be the recipient of physical aggression such as jerking on the reins, and therefore the horse’s mouth; excessive use of the leg, whip or spur; or some combination of all of these behaviors. Does this demonstrate respect for one’s equine teammate? Ultimately, one must ask the question: Is the behavior occurring from a place of poor sportsmanship, or is the behavior defined as poor sportsmanship because it occurs regardless of motivation, and therefore demonstrates a lack of respect for one’s equine teammate? It may also be something else entirely.

Work by Kellert (1996) suggested that there are nine basic values, shaped by experience, learning, and culture, that influence “people’s basic perceptions of nature and living diversity” (p. 9). These values may also assist in describing people’s perspectives as it relates to the use of horses in competitive activities.

The first of the nine values is the utilitarian view, which emphasizes the means by which people obtain material benefit from other living things. This would include such practical advantages as “food, medicine, clothing, tools, and other products” (p. 10). The second value Kellert (1996) describes is the naturalistic, which focuses on the various forms of satisfaction that people obtain from interacting in and with the natural world. The ecologicistic-scientific

perspective is defined as the “systematic study of structure, function, and relationship in nature.” The fourth, aesthetic value, emphasizes the “physical appeal and beauty of nature” (p. 38). The symbolic value focuses on the “use of nature for the development of language and thought” (p. 38), and the frequent use of animals in such development. Kellert also describes a negativistic value, which refers to the fear or aversion to nature that some may hold. The final three values, humanistic, moralistic, and dominionistic, are likely most relevant in the discussion of competitive equestrian activity.

The humanistic value suggests, “Wildlife and nature also give people an avenue for expressing and developing the emotional capacities for attachment, bonding, intimacy, and companionship. For most people, these abilities are nurtured through close association with single species and individual animals, often culturally significant vertebrates and especially domesticated animals that become part of the human household” (Kellert, 1996, p. 21). While horses do not typically become part of the household per se, it is not unusual for them to fulfill a very prominent role, and provide a form of companionship, in the daily lives of their owners. Kellert (1996) further stated, “The humanistic experience of nature develops the capacities for caring, bonding, and kinship. As highly social animals, humans require these affective abilities, which increase the likelihood of cooperative, altruistic, and helping behavior so important to the survival of any social creature” (p. 22).

The moralistic value takes the position that there is a strong and binding relationship between all life, and holds that humans are ethically bound to minimize harm, particularly to those animals viewed as most like ourselves, or “those species characterized by the seeming capacities for sentience, reasoning, and directed self-action” (Kellert, 1996, p. 23). This moralistic view is often associated with concerns about the ethical treatment of animals. In

contrast, the dominionistic value emphasizes that the benefit of nature and animals is found in their “mastery, physical control, and dominance” (Kellert, 1996, p. 38). Kellert (1996) goes on to suggest that “by successfully challenging nature and wildlife, people derive feelings of self-reliance that are hard to achieve in an untested relationship or by simply experiencing nature as a spectator” (p. 20). It may be that this dominionistic value is what drives equestrians to use a whip or spur in a particular event; however, these individuals also likely hold moralistic and humanistic views at times as well. The most commonly held values in American society are reported to be the humanistic, utilitarian, moralistic, and negativistic, with dominionistic one of the least commonly reported (Kellert, 1996). It would be interesting to determine the values of competitive equestrians, although depending on how the questions were worded, it may be that they would be reluctant to identify as dominionistic if they perceived it to be a negative trait. In fact, “a large proportion of Americans express strong moralistic concerns for the proper treatment of animals and nature. Many object to various activities that presumably inflict suffering such as certain forms of trapping, trophy hunting, laboratory experimentation, and rodeos” (Kellert, 1996, p. 42). It is likely that the majority of youth barrel racers would be disinclined to identify themselves as dominionistic, although Kellert’s work has also investigated the role of age in the acquisition of values regarding nature and living diversity.

Kellert (1996) assessed the development of children’s perspectives and values toward nature and animals, finding that not unlike the findings of Kohlberg, children under 6 years of age were found to be “egocentric, domineering, and self-serving in their values of animals and nature “ (p. 47), and that children in this age range do not seem to express recognition of the feelings and independence of animals, and that they are most fearful of them at this stage. Between the ages of 6 and 9 years, children become more aware that animals have feelings and

interests unrelated to those of the child, and that animals may suffer pain. In the third stage, between 9 and 12 years of age, Kellert (1996) reported that children develop a large increase in their knowledge and understanding of animals. Between the ages of 13 and 17 years, they demonstrated an increase in abstract and ethical thought as it relates to animals and nature, becoming more moralistic and possibly ecological in their thinking. In studying adult populations, young adults aged 18 to 25 years demonstrated more moralistic, and less utilitarian and dominionistic values than elderly Americans, but that “both children and adults reveal strong humanistic perspectives of the natural world—particularly pronounced affection for individual animals, higher vertebrates, and domesticated pets” (Kellert, 1996, p. 50). Kellert’s work provided an excellent framework for understanding the pattern through which youth develop values toward animals including horses, and the sorts of values people hold in this regard. It does not, however, provide any insight as to whether these values are context specific, as in the case of excessive whip or spur use, especially when those values could be as conflicting as moralistic and dominionistic. Future work could incorporate the values described by Kellert, in an effort to determine which of these values youth barrel racers hold, where they learn them, and if they change as riders advance in age and skill level.

Although research quantifying this type of behavior at any level of equestrian sport is limited, it may occur less frequently, for example, in more elite-level riders competing in the cloverleaf barrel race. One might ask where or from whom aggressive riding behaviors are learned, or if they are the types of behaviors that should be promoted by programs that promote positive youth development, such as 4-H. It is not unusual to witness excited crowds composed in part of adults who are significant to the competitors, encouraging the young people to engage in aggressive riding behaviors during the gymkhana events. Interestingly, a study of 676 fifth-

through eighth-grade, male and female athletes participating in traditional sport (basketball, soccer, football, hockey, baseball, softball, or lacrosse) evaluated predictors of self-reported poor sportsmanship behaviors. The authors reported that perceived coach and spectator behavior best predicted poor sport behaviors of the youth themselves (Shields, LaVoi, Bredemeier, & Power, 2007), which may also be the case in the cloverleaf barrel race described here.

In certain cases, the use of aggressive riding behavior may be a display of what could be defined as poor sportsmanship. Demonstrations of aggressive riding may in fact be considered poor sportsmanship simply because they represent a lack of respect for the animal, regardless of motive. It may also be true that the youth participants described in the current study truly believed that this type of riding would make their horses go faster, and did not recognize that they were in any way being unfair to their animals. If this is the case, there is a need for additional education about equine behavior and training. Given the myriad questions, there exists a need for a clear, and in the long-term, common, definition of sportsmanship that includes both positive and negative behavior in equestrian sport, as well as a tool with which to measure both prosocial and antisocial behavior in competitive youth equestrians.

CHAPTER 4

STUDY TWO: THE DEVELOPMENT OF A PRELIMINARY SCALE MEASURING PROSOCIAL AND ANTISOCIAL BEHAVIOR IN EQUESTRIAN SPORT

The purpose of this study was twofold: (a) to develop a preliminary scale for measuring prosocial and antisocial behavior in equestrian sport, and (b) to verify the psychometric properties of the scale. With data from the use of these tools, a clearer picture and understanding of the behavior of the equestrian rider will emerge, and it may then be possible to develop and test interventions for improving sportsmanship attitudes and behaviors at competitive equestrian events.

Phase One: Development of a Preliminary Scale Measuring Prosocial and Antisocial Behavior in Equestrian Sport

Methods

Participants.

The aim of Phase One was to develop a preliminary scale to measure prosocial and antisocial behavior in youth equestrian sport, using a procedure described by Kavussanu and Boardley (2009). As defined by Kavussanu and Boardley (2009), the term *behavior* in the first phase of this study reflected reported behaviors witnessed at horse shows, as opposed to actual behaviors performed. Upon receiving human subjects approval, 10 youth participants in the Michigan State 4-H Horse Show, aged 13 to 19 years, 10 parents of participants in the Michigan State 4-H Horse Show, 10 Michigan 4-H horse and pony project adult volunteer leaders, and 10 Michigan 4-H horse judges agreed to participate in this phase of the project.

Procedures.

Participants were asked demographic questions and were given the definition of *prosocial* and *antisocial sport behaviors*. Additionally, participants were asked to identify behaviors that they had observed in equestrian competitors toward other competitors, show management, coaches, trainers, parents, and their equine partners that illustrated prosocial and antisocial behaviors. A script of this process is available in Appendix C. Investigators compiled the resulting list of 365 behaviors and shared the list of all behaviors appearing two or more times with five collegiate equestrian team members familiar with the sport to remove redundant or infrequent behaviors.

The resulting list of 56 behaviors was then pilot tested with youth equestrian competitors aged 13 to 19 years using a Likert-type scale. The scale options included response options of 1 (*never*), 2 (*rarely*), 3 (*sometimes*), 4 (*often*), and 5 (*very often*) to determine how frequently the respondents had actually engaged in each behavior in the past two years of horse showing activity. Using a scale for each item ranging from -3 (*not at all representative*) to +3 (*very representative*) of the intended construct, content validity was determined via the ratings of five experts in equestrian activity to assess whether the remaining items measured the intended domains. Unacceptable items were excluded as necessary. Based on the results of these two procedures, items were removed, resulting in a scale consisting of behaviors that occur relatively frequently.

Pilot test.

Twenty-six youth with a mean age of 16.2 years responded to the pilot-tested survey. Of those, 89% were female, which is similar to the gender response found in other studies of 4-H horse activity (Arnold & Nott, 2010). Respondents had a mean of 9.3 years of horse showing

experience. In the past two years, 42.3% reported participation primarily in 4-H activities, while 46% participated in breed association–sponsored events. Pilot-test survey response data were used to determine those behaviors that occurred somewhat frequently, by selecting those with mean Likert scores between 2 and 4.5, as described by Kavussanu and Boardley (2009), and as a result, 35 items were retained. Content validity was assessed on those 35 items. One item; “Done what I saw trainers or other adults doing to horses at horse shows, even if I wasn’t sure why they were doing it,” was removed because it was perceived to be confusing. This resulted in a final tool consisting of 34 items representing the eight constructs of interest believed to represent a respect-based definition of sportsmanship in competitive equestrian activity. The constructs of the final scale included Prosocial Competitor (7 items); Prosocial Parents, Coaches, Trainers (3 items); Prosocial Judges, Show Managers (5 items); Prosocial Horse (3 items); Antisocial Competitor (3 items); Antisocial Parents, Coaches, Trainers (6 items); Antisocial Judges, Show Managers (3 items); and Antisocial Horse (4 items). These 34 items comprised the Prosocial and Antisocial Behavior in Equestrian Sport (PABES) scale (see Appendix D), which underwent EFA and CFA in Phase Two of the study.

Phase Two: Measurement of Factor Structure and Reliability

Methods

Participants.

Participants were recruited via national equine-related e-mail lists and social media outlets (including sharing links to the survey via Facebook and Twitter). The survey remained open for 6 weeks. Due to university human subjects requirements related to parental consent and anticipated complications regarding obtaining parental consent in online research, study participation was limited to individuals aged 18 years and over, with the belief that a useful

percentage of the responding sample would represent the 18- to 26-year-old age range. This represents somewhat of a deviation from the youth population used in developing the tool; the mean age of those involved in the pilot study of the scale was 16.24 years of age, and the pilot study sample included eight 18- to 20-year-olds, as well as eleven 16- to 17-year-olds.

Procedures.

In an effort to obtain the largest number of responses from the broadest range of riders by age and experience level in equestrian competition, the 34-item PABES tool (Appendix D) was evaluated for factor structure and reliability. The evaluation was conducted through an online survey using SurveyMonkey.com following approval by the Michigan State University Committee on Research Involving Human Subjects (Appendix E).

Statistical Analyses

The factor structure of the scale was evaluated using EFA using adjusted principle components analysis and varimax rotation. A CFA was subsequently performed and the reliability of the scales was determined using Cronbach's alpha to assess internal consistency.

Results

Descriptive statistics.

A total of 1,070 individuals began the survey, with 851 (80.7%) actually completing it. This resulted in a sample size that was beyond the recommended 5 times the number of variables for factor analysis (Vincent, 1999), and a large enough group of 18- to 26-year-olds ($N = 286$), but not a large enough sample of respondents primarily involved in 4-H ($N = 105$). The gender distribution of valid responses was 96% female and 4% male, and the age of respondents ranged from 15 to 83 years. Five respondents were removed from the data set because they were below the 18 years of age requirement. Thirty-three percent, or 286 respondents, were aged 18 to 26

years. The greatest number of participants reported having participated in open shows (37.5%), followed by breed association (26.2%), and discipline association (23.1%) events over the past two years. (see Table 12).

Table 12

Horse Showing Organizations Participated in Over The Past Two Years

Organization	Frequency	Percentage
4-H	107	12.6
Breed association	223	26.2
Discipline association	197	23.1
Open shows	319	37.5
U.S. Pony Club	5	0.6
Total	851	100.0

Mean responses for the full sample ranged from 1.20 (*never*) for the statement “Thought it was my parents’ or other family members’ responsibility to provide me with a horse showing experience” to 4.83 (*very often*) for “Petted my horse to reward him or her for doing a good job.” Similarly, the range of mean responses for the 18- to 26-year-old age group was 1.28 (*never*) for the statement “Made sarcastic or hurtful comments to competitors at horse shows” to 4.86 (*very often*) for the statement “Petted my horse to reward him or her for doing a good job.” In general, survey respondents regardless of age indicated that they “never” or “rarely” engaged in antisocial behaviors, and “sometimes” to “often” demonstrated prosocial behaviors.

Exploratory factor analysis (EFA).

An EFA was performed on the 34-item PABES tool with eigenvalues greater than 1 extracted. As described by Kavussanu and Boardley (2009), primary loadings of .40 and greater

were considered interpretable, and secondary loadings of .32 or greater on the same item were considered cross-loadings. Nine factors with eigenvalues greater than 1 were extracted from the entire sample, and eigenvalues ranged from 1.025 to 5.779. These factors explained 58.57% of the variance (see Table 13).

Table 13

Exploratory Factor Analysis of 34 PABES Items, Hypothesized Constructs, and Factor Loadings

Item	Hypothesized Construct	Strongest Factor Loading
Complimented another exhibitor	Prosocial competitor	.66
Encouraged another competitor	Prosocial competitor	.59
Loaned another exhibitor tack, equipment, or clothing	Prosocial competitor	.71
Helped another competitor learn a pattern	Prosocial competitor	.67
Informed another competitor about forgotten or incorrect equipment including back numbers	Prosocial competitor	.70
Helped another competitor care for his/her animal	Prosocial competitor	.66
Used social media to congratulate fellow competitors at horse shows	Prosocial competitor	.86
Used social media to thank my friends, coaches, or leaders at horse shows	Prosocial parent, coach, trainer	.88
Showed appreciation when my parents or other family members took me to horse shows	Prosocial parent, coach, trainer	.37
Done what my family, friends, parents, coaches or trainers suggested when they tried to help me	Prosocial parent, coach, trainer	.72
Volunteered to set up equipment at a horse show where I was showing	Prosocial judge or show management	.66
Thanked a judge or show committee for their efforts	Prosocial judge or show management	.71

Table 13 (cont'd)

Volunteered at a show where I was not showing	Prosocial judge or show management	.57
Complimented a judge or show staff	Prosocial judge or show management	.74
Used social media to thank judges or show staff at horse shows	Prosocial judge or show management	.82
Put my horse's needs above my own at horse shows	Prosocial horse	.44
Given my horse treats to thank him/her for doing a good job	Prosocial horse	.71
Petted my horse to thank him/her for doing a good job	Prosocial horse	.71
Made fun of other horses and riders at shows, with my friends	Antisocial competitor	.44
Made sarcastic or hurtful comments to competitors at horse shows	Antisocial competitor	.46
Ignored other exhibitors at horse shows, even when they spoke to me	Antisocial competitor	.67
"Talked back" to my parents or other family members when they tried to help me at horse shows	Antisocial parent, coach, trainer	.70
Ignored my family, friends, coaches or trainers when they tried to help me	Antisocial parent, coach, trainer	.48
Yelled at one of my parents or other family members at a horse show	Antisocial parent, coach, trainer	.70
Ignored or excluded my parents or other family members at horse shows	Antisocial parent, coach, trainer	.63
Thought that it was my parents or other family members responsibility to provide me with a horse show experience	Antisocial parent, coach, trainer	.46
Been uncomfortable with the training or management practices that others suggested I do to my horse	Antisocial parent, coach, trainer	.31

Table 13 (cont'd)

Been vocally critical of how a horse show was run	Antisocial judge or show management	.74
Been vocally critical of judges hired at horse shows	Antisocial judge or show management	.67
Complained to or confronted show staff or volunteers	Antisocial judge or show management	.60
Worked my horse for a long time after a class as punishment for his/her performance	Antisocial horse	.52
Spurred or kicked my horse when I was unhappy with his/her performance	Antisocial horse	.69
Jerked on my horse's mouth when I was unhappy with his/her performance	Antisocial horse	.76
Yelled at my horse when I was unhappy with his/her performance	Antisocial horse	.64

In exploring the nine factors produced, six factors suggested viable constructs of three or more items that revealed characteristics of prosocial or antisocial behavior in equestrian sport. Three factors represented prosocial behaviors. The first factor included items describing prosocial behaviors displayed toward other competitors or judges and show management (10 items; eight primary, two cross-loading). The second factor represented those prosocial behaviors involving the use of social media to congratulate or thank others (three items). The third prosocial factor highlighted prosocial behavior toward one's horse (four items). Three factors revealed more antisocial behaviors, with the first involving ignoring one's parent, coach, or trainer, or being sarcastic toward other competitors (four items). The second antisocial factor included negative behaviors toward one's horse or toward one's parent, coach, or trainer (seven items). The final antisocial behavior consisted of items representing verbal outbursts toward others, primarily judges, show managers, or other competitors (four items). Two items did not

load on any factors and were eliminated from further consideration. The first was “Showed appreciation when my parents or other family members took me to horse shows.” The second was “Been uncomfortable with the training or management practices that others suggested I do to my horse.” One item, “Done what my family, friends, coaches, or trainers suggested when they tried to help me” was the single item loading on one factor. Likewise, this statement was removed from further analyses.

Confirmatory factor analysis.

Six-factor model—full sample.

In conducting a CFA, the objective is to test whether the model fits the data, by determining “estimates for each parameter of the measurement model (i.e., factor loadings, factor variances and covariances, indicator error variances, and possibly error covariances) that produce a predicted variance-covariance matrix (symbolized as Σ) that represents the sample variance-covariance matrix (symbolized as δ) as closely as possible” (Brown, 2006, p. 72). In order for this process to occur, “models must be identified to run the model and estimate the parameters” (Harrington, 2009, p. 24), and models must contain more known than unknown parameters, or degrees of freedom (known parameters—unknown parameters) greater than 0. The degrees of freedom referred to in the following tables will be those of the model being tested, as opposed to the sample size.

The six-factor model using the remaining 31 items was examined using CFA on the entire sample ($N = 851$; see Table 14). The resulting model showed poor fit overall, despite the suggestion by Arbuckle (2010) that “a value of about .08 or less for the *RMSEA* would indicate a reasonable error of approximation” (p. 590). For example, X^2 to degrees of freedom ratios of as low as 2 and as high as 5 to 1 are described as reasonable (Arbuckle, 2010); however, the ratio of

the current model was 6.97. Similarly, the Comparative Fit Index (*CFI*) of .69 in the current model was substantially lower than the recommended value close to 1 that would indicate a very good fit (Arbuckle, 2010). The *RMSEA* values reported by Kavussanu and Boardley (2009) in the development of the PABSS ranged from .068 to .076 and were not substantially different from those reported here; however, the *CFI* values ranged from .938 to .961, which were much higher.

Table 14

Confirmatory Factor Analysis—Six-Factor Models

Sample	X^2	<i>df</i>	<i>P</i>	<i>CFI</i>	<i>RMSEA</i>	X^2/df
Full	3023.98	434	.00	.69	.08	6.97
18–26 years	1394.94	434	.00	.67	.09	3.21

Reliability.

Alpha coefficients indicated good internal consistency for the three constructs in the six-factor model representing the Prosocial Competitors, Judges, and Show Managers (.85); Antisocial Horse and Parent, Coach, or Trainer (.82); and Prosocial Use of Social Media (.86). Internal consistency was not good, however, for the three factors representing Prosocial Horse Treatment (.40), Antisocial Ignoring Others (.56), and Antisocial Verbal Behavior (.64).

Six-Factor Model—18 to 26 Years of Age

Given that the original tool was developed and pilot tested primarily with and in regard to youth behavior, the sample was sorted by age and a second CFA was conducted on those responses provided by individuals 18 to 26 years of age ($n = 286$). Once again, the model showed poor levels of fit overall (see Table 14). The improvement in Chi-square to degrees of

freedom ratio may have been a result of smaller sample size, as opposed to actual improvement in model fit.

Given the overall average to below average indices of fit displayed by the six-factor model regardless of age, as well as the lack of internal consistency of three of the six factors based on the low Cronbach's alpha scores, a three-factor model was hypothesized and a subsequent CFA conducted. The three-factor model postulated Prosocial Competitors, Judges and Show Managers; Antisocial Horse and Parent, Coach or Trainer; and Prosocial Use of Social Media and incorporated all 31 items in the analysis.

Three-Factor Model—Full Sample

A CFA of the three-factor model on the entire sample revealed three factors with reasonable but not good fit based on the *RMSEA*, for both the full and the 18- to 26-year-old samples (see Table 15).

Table 15

Confirmatory Factor Analysis—Three-Factor Models

Sample	X^2	<i>df</i>	<i>P</i>	<i>CFI</i>	<i>RMSEA</i>	X^2/df
Full	2794.39	350	.00	.72	.08	6.44
18 to 26 years	1394.94	350	.00	.67	.09	3.21

The model showed good internal consistency, with Cronbach's alpha values of .82, .81, and .86 for the Prosocial Competitors, Judges and Show Managers; Antisocial Horse, Parent, Coach, or Trainer; and Prosocial-Social Media, respectively. Factors showed acceptable loading on all items with the exception of three items originally identified as representing Prosocial Horse Treatment, which ranged from .10 to .30.

Three-Factor Model With Prosocial Horse Treatment Removed

Given that the items intended to represent Prosocial Horse Treatment displayed very low standardized regression weights, they were removed from the analysis, and the CFA was again conducted on the entire sample. This improved the model to the best fit of all models tested based on the *CFI*, although the *RMSEA* did not improve, and the Chi-square to degrees of freedom ratio remained higher than is commonly accepted according to Arbuckle (2010) for the full sample (see Table 16). Once again, the three-factor model underwent CFA on the sample of respondents aged 18 to 26 years, showing model fit similar to that of the model tested on the full sample with an improved Chi-square to degrees of freedom ratio, more in keeping with that recommended by Arbuckle (2010). This model was accepted as the best fit of the data, given that two of the three indices (i.e., Chi-square to degrees of freedom ratio and *RMSEA*) were within acceptable range.

Table 16

Confirmatory Factor Analysis—Three-Factor Models, Prosocial Horse Treatment Removed

Sample	X^2	df	P	CFI	$RMSEA$	X^2/df
Full	2409.77	350	.00	.75	.08	6.89
18 to 26 years	1055.63	350	.00	.742	.08	3.02

The complete PABES scale, including items, Factor Loadings (FL), and Error Variances (EV) based on the full sample, is described in Table 17.

Table 17

PABES Items, Factor Loadings (FL), and Error Variances (EV) for Full Sample, Three-Factor Model

Item	Code	<i>M</i>	<i>SD</i>	<i>FL</i>	<i>EV</i>
1. Complimented another exhibitor.	PS	4.20	.77	.59	.39
2. Encouraged another competitor.	PS	4.24	.79	.64	.37
3. Loaned another exhibitor tack, equipment, or clothing.	PS	3.55	.97	.60	.61
4. Volunteered to set up equipment at a show where I was showing.	PS	3.15	1.16	.66	.71
5. Helped another competitor learn a pattern.	PS	3.52	1.04	.61	.67
6. Informed another competitor about forgotten or incorrect equipment.	PS	3.51	.94	.63	.54
7. Volunteered at a show where I was not showing.	PS	3.31	1.12	.55	.87
8. Helped another competitor care for their horse.	PS	3.89	.89	.59	.56
9. Thanked a judge or show committee for their efforts.	PS	3.78	.99	.66	.56
10. Complimented a judge or show staff.	PS	3.67	.98	.63	.58
11. Used social media to thank my friends, parents, coaches, or leaders at horse shows.	PS SM	3.26	1.30	.81	.56
12. Used social media to thank judges or show staff at horse shows.	PS SM	2.40	1.30	.78	.61
13. Used social media to congratulate fellow competitors at horse shows.	PS SM	3.08	1.31	.86	.45
14. Thought that it was my parents or families' responsibility to provide a horse showing experience.	AS	1.21	.59	.38	.30
15. Ignored other exhibitors at a show even when they talked to me.	AS	1.27	.52	.36	.24
16. Ignored or excluded my parents or family members at horse shows.	AS	1.49	.74	.36	.41

Table 17 (cont'd)

17. Made sarcastic or hurtful comments to competitors at horse shows.	AS	1.18	.48	.46	.18
18. Worked my horse for a long time after a class as punishment for his/her performance.	AS	1.42	.69	.52	.35
19. "Talked back" to my parents or family members when they tried to help me at horse shows.	AS	1.88	.92	.67	.47
20. Spurred or kicked my horse when I was unhappy with his/her performance.	AS	1.46	.71	.61	.31
21. Ignored my family, friends, coaches, or leaders when they tried to help me at horse shows.	AS	1.63	.69	.58	.31
22. Yelled at one of my parents or other family members at a horse show.	AS	1.65	.86	.69	.39
23. Yelled at my horse as a form of punishment.	AS	1.54	.74	.55	.39
24. Jerked on my horse's mouth when I was unhappy with his/her performance.	AS	1.55	.75	.67	.31
25. Been vocally critical of how a horse show was run.	AS	2.43	.77	.34	.53
26. Been vocally critical of judges hired at horse shows.	AS	2.09	.81	.47	.52
27. Complained to or confronted horse show staff or volunteers.	AS	1.54	.70	.34	.44
28. Made fun of other horses and riders at shows with my friends.	AS	1.87	.89	.52	.57

Note. PS = prosocial; PS SM = prosocial social media; AS = antisocial; actual range of all items was 1–5.

Phase Three: Measurement of Discriminant and Concurrent Validity

Phase Three of the study was conducted to estimate the discriminant and concurrent validity of the scale in an attempt to glean more information regarding the constructs, again adapted from procedures described by Kavussanu and Boardley (2009). Discriminant validity reflects the comparison of measures against one another, to ensure that variables that are presumed to measure different constructs are not too highly interrelated. Concurrent validity is a measure of survey accuracy whereby the results of a new instrument are compared with generally accepted, established instruments measuring similar constructs, after both tests are administered to the same group of individuals (Litwin, 1995). As described by Kavussanu and Broadley (2009) concurrent validity of the current tool will be determined by comparing its criteria to others “consistently linked to prosocial and aggressive acts in past research . . . empathy, task orientation, and ego orientation” (p. 108).

Methods

Concurrent and discriminant validity was evaluated using the same online sample described in Phase Two. Participants completed the PABES tool developed in Phase One, as well as the Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda, 1989) and the perspective taking and empathic concern subscales of the Interpersonal Reactivity Index (IRI; Davis, 1980, as cited in Kavussanu & Broadley, 2009). Hypothesized relationships between scales are shown in Table 18, where a negative symbol designates an anticipated negative relationship between the two subscales indicated, and a positive sign suggests an anticipated positive relationship.

Table 18

Hypothesized Relationships Between Subscales Used to Determine Concurrent and Discriminant Validity

Scale	Pro-social	Pro-social social media	Anti-social	Task (TEOSQ)	Ego (TEOSQ)	Perspective taking	Empathic concern
Prosocial (PABES)	--	+	-	+	-	+	+
Prosocial social media (PABES)		--	-	+	-	+	+
Antisocial (PABES)			--	-	+	-	-
Task (TEOSQ)				--	-	+	+
Ego (TEOSQ)					--	-	-
Perspective taking						--	+
Empathic concern							--

Instruments

Task and ego orientation in sport questionnaire.

The TEOSQ (see Appendix F) is a 13-item scale designed to assess individual tendencies toward task or ego orientation. Individuals high in ego orientation tend to feel successful when they outperform others, while those high in task orientation feel most successful when they improve their skills (Duda, 1998). The TEOSQ subscales have demonstrated acceptable “test-retest reliability following a 3-week period ($r = .68$ and $.75$, respectively; Duda, 1992) and one soccer season ($r = .71$ and $.72$ respectively; VanYperen & Duda, 1997)” (Duda, 1998, p. 24).

The TEOSQ has also shown internal consistency as demonstrated by mean internal reliability values of .79 and .81 for the task and ego subscales, respectively, over 56 studies (Duda, 1998). Kavussanu and Boardley (2009) reported that “task orientation has been positively linked to morally relevant variables such as sportspersonship and prosocial behavior, whereas ego orientation has been positively associated with antisocial behavior” (p. 108). Similar relationships were expected in the current study.

Interpersonal reactivity index.

Adapting the method used by Kavussanu and Boardley (2009), seven items measuring perspective taking as a dimension of empathy and seven items measuring empathic concern were taken from the IRI (see Appendix G) described by Davis (1983). All four scales of the IRI have been shown to have satisfactory internal (.71–.77) and test-retest reliabilities (.62–.71) (Davis, 1983). In the current study, it was hypothesized that concurrent validity would be established if perspective taking and empathic concern were positively correlated with the prosocial behaviors and negatively correlated with antisocial behaviors of the three-factor model PABES.

Results

The descriptive statistics of the three-factor PABES scale, the TEOSQ, and the Perspective Taking and Empathy subscales are described in Table 19. Unfortunately, it was discovered upon analysis that one item of the TEOSQ Task subscale—“I feel most successful when I learn a new skill by trying hard”—was unintentionally omitted from the current study. Although the means, standard deviations, and Cronbach’s alpha of the TEOSQ Task ($\alpha = .75$) and Ego ($\alpha = .84$) subscales in the current study were similar to those previously reported in more than 56 studies (Duda, 1998), caution should be used when interpreting these data.

Table 19

Descriptive Statistics of the PABES, TEOSQ, Perspective Taking, and Empathy Subscales

Scale	<i>M</i>	<i>SD</i>	<i>N</i>
Task	4.28	.59	851
Ego	2.80	.88	851
Perspective taking	2.52	.50	851
Empathic concern	2.24	.39	851
Prosocial	3.67	.64	840
Antisocial	1.60	.41	844
Social media	2.90	1.16	851

The correlations between the PABES, TEOSQ, Perspective Taking, and Empathy subscales using the full sample were generally weak yet significant, indicating that the constructs in the PABES tool are distinct from the others, thus suggesting discriminant validity (Kline, 2005). The three PABES subscales displayed the hypothesized directional relationships with the TEOSQ Task and Ego subscales, and the correlations were significant yet somewhat low (see Table 20). The PABES Antisocial scale also demonstrated a significant correlation of .33 with the Ego Subscale of the TEOSQ, which approaches the minimum .40 correlation suggested for establishing concurrent validity. Again, the PABES Prosocial and Prosocial-Social Media subscales displayed a significant positive relationship with the Empathic Concern and Perspective Taking subscales, while the PABES Antisocial subscale demonstrated a negative and nonsignificant relationship with these scales. Interestingly, the strongest relationship indicated was that between the PABES Prosocial and PABES Prosocial-Social Media, although both constructs were measuring prosocial behavior, so the role of social media is not clear. While all relationships were somewhat low, it is encouraging to note that directionally speaking they

suggest that the PABES scale is measuring constructs in a way that is in keeping with theoretical expectations.

When discriminant and concurrent validity were evaluated using the 18- to 26-year-old sample, similar relationships were shown (see Table 21). Correlations numerically decreased as compared to the full sample between the Perspective Taking and Empathic Concern subscales and all others considered, and numerically increased slightly in the relationship between the PABES Prosocial and PABES Prosocial-Social Media. Again, both of these factors are intended to measure prosocial behavior; however, the correlation is not so strong as to suggest they are measuring the same dimension ($r = .46$).

Table 20

Relationships Between PABES Subscales and Content Validity Scales for the Full Sample

Scale	TEOSQ task	TEOSQ ego	Perspective taking	Empathic concern	PABES prosocial	PABES antisocial	PABES prosocial-social media
TEOSQ task	1	.21**	.41**	.33**	.19**	-.09**	.18**
TEOSQ ego		1	.06	.19**	-.22**	.33**	-.07*
Perspective taking			1	.38**	.18**	-.15**	.13**
Empathic concern				1	.07*	.02	.01**
PABES prosocial					1	-.14**	.43**
PABES antisocial						1	.04
PABES prosocial-social media							1

** Indicates significance at $p < .01$. *Indicates significance at $p < .05$.

Table 21

Relationships Between PABES Subscales and Content Validity Scales for the 18- to 26-Year-Old Sample

Scale	TEOSQ task	TEOSQ ego	Perspective taking	Empathic concern	PABES prosocial	PABES antisocial	PABES prosocial-social media
TEOSQ task	1	.16**	.36**	.26**	.25**	-.17**	.12**
TEOSQ ego		1	.02	.15**	-.220**	.30**	-.07*
Perspective taking			1	.36**	.17**	-.16**	.20**
Empathic concern				1	.07*	.01	.05
PABES prosocial					1	-.15**	.46**
PABES antisocial						1	-.01
PABES prosocial-social media							1

** Indicates significance at $p < .01$ *Indicates significance at $p < .05$

Discussion

This work represents the first effort to establish a psychometrically valid scale measuring prosocial and antisocial behavior in equestrian sport, with the long-term intent of measuring sportsmanship behavior and evaluating educational programming designed to enhance positive sportsmanship behavior in equestrian activity. The PABES scale also includes a subscale related to the use of social media such as Facebook and Twitter in relation to positive or prosocial behaviors, which represents an emerging dimension in sportsmanship behavior. While a noteworthy start, further refinement of the scale is needed to improve the model, however,

“There are multiple guidelines available for ‘acceptable’ model fit” (Harrington, 2009, p. 52).

The matter of below-average fit based on some indices may be due to issues with the content validity of the PABES scale itself, or may be a result of inconsistencies or problems with the data used to verify the model.

Content validity refers to “the extent to which an empirical measurement reflects a specific domain of content” (Carmines & Zeller, 1979, p. 20) or in the current study, the degree to which the PABES scale measures prosocial and antisocial behavior in equestrian sport. The methods used in Phase One of the study relied primarily on Michigan youth equestrians, their parents, 4-H horse judges, and 4-H horse and pony project volunteer leaders for the input of potential items for the PABES scale. This presents an obvious limitation to the PABES scale in that the items are specific to the perspectives of those involved at introductory levels, in a particular state. While the items generated for the PABES are valid points to measure when considering youth sportsmanship, and it is likely that the concerns are generalizable to other states, the PABES scale in its current form does not consider other constructs pertaining to sportsmanship at higher levels of equestrian activity, such as harsh training techniques, or illegal drugs; however, that population was not part of this study. The PABES scale also may fail to consider elements of sportsmanship deemed important by an older population, or specific discipline. In fact, only 12.6% of those responding reported having participated in 4-H in the previous 2 years (see Table 12). Given that it was ultimately an older population participating at more advanced levels that made up the largest percentage of the sample used to assess the model, retesting the PABES scale with an introductory level youth audience is warranted, and may ultimately result in a model demonstrating better fit. Finally, the concept of sportsmanship is complex regardless of sport, with the addition of the horse, and respect for the horse in a

competitive environment, further complicating matters. In this case a 34-item, six-factor model was originally proposed, yet an important dimension; prosocial horse treatment, only consisted of three items, which ultimately did not display internal reliability as a factor. This particular dimension requires additional consideration, possible addition of items, and retesting with an appropriate sample.

Finally, the sample used and data generated for assessing the validity of the PABES scale is cause for concern. In the words of Carmines and Zeller (1979), “it is quite possible for a measuring instrument to be relatively valid for measuring one kind of phenomenon but entirely invalid for assessing other phenomena” (p. 17). While the PABES should not be described as invalid, and is again, a noteworthy start, one must consider possible limitations. In this case, the decision was made to proceed with an online, adult population in an attempt to generate sufficient numbers for evaluation without requiring parental consent. Unfortunately, this may have proved detrimental to the fit of the model. Some of the items included in the PABES included references to parents or family members, which some older survey respondents found troubling. This in itself is evidence that the large number of older adults in the sample may have negatively affected model fit. In summary, the initial aim of the study to develop a preliminary scale for measuring prosocial and antisocial behavior in equestrian support has been completed. However, the second aim, to verify the psychometric properties of the scale, requires additional effort with a more appropriate sample. Upon refinement and retesting, the PABES scale has the potential to evaluate educational programs designed to improve sportsmanship in equestrian sport.

CHAPTER 5

CONCLUSIONS

The top five ethical concerns in competitive equestrian activity include matters of sportsmanship, horse welfare, violations of rules and regulations, concerns about fair judging, and parenting issues (Skelly et al., 2005). Within the horse industry, this is the only published study regarding the topic. The work detailed in Studies One and Two of this dissertation represent preliminary efforts to address the first two concerns identified: matters of sportsmanship and horse welfare.

Study One examined the frequency with which aggressive riding techniques were used in a youth cloverleaf barrel race, and questions the commonly held belief that the use of aggressive riding techniques, considered by some to be poor sportsmanship, will result in a horse running faster and thus improving final run time. These data suggested that across all horse and rider teams studied, there was wide variation in the employment of aggressive riding use, but there was no relationship between the use of aggressive riding techniques and final run time. There were small but significant relationships between the use of aggressive riding techniques and conflict, stress, and irritation behaviors displayed by the horse, however. When horse and rider pairs were divided into groups based on ranked final run time, those riders in the intermediate third demonstrated more aggressive riding techniques than did those in the slowest group, with no difference shown between the fastest group and the intermediate group, or the fastest group and the slowest group. A horse can only achieve a certain amount of speed, however, based on its potential at a given point in time. Genetics, conditioning, health and management, and training, are all factors that determine this potential. Rider technique also may influence final run time, but at some point, additional strikes of the whip, leg, or spur do not improve final run time

or provide additional competitive benefit. Further, the primary interest in regard to this research is in the human aspect of competitive equestrian activity, as opposed to simply equine speed. For example, in the current study, only the top 10 horse and rider pairs were placed, received social recognition, and were given an award. The remaining horse and rider teams were not recognized publically, or rewarded in any external way. One of the most important questions from these data, then, is at what point does aggressive riding and lack of respect for the horse end and poor sportsmanship begin? This question may better lend itself to an answer were there a common definition of sportsmanship in competitive equestrian sport, and a means by which to measure it.

Study Two focused on developing a preliminary scale to define and measure sportsmanship in competitive youth equestrian events. The research protocol in this study used an approach developed by Kavussanu and Boardley (2009), while keeping with the views of Vallerand et al. (1996), who suggested that “athletes should be in a prime position to identify the nature of the sportsmanship concept. In fact, it may even be posited that the most meaningful and ecological understanding of the nature of sportsmanship should be obtained from the very individuals who participate in sport settings: the athletes themselves” (p. 91). The development of the PABES scale described in this dissertation went somewhat further in that it also included the perspectives of horse judges and show managers, parents of equestrian competitors, and coaches, trainers, and 4-H volunteer leaders, and relied on experts in equestrian competition to assess the resulting items for content validity. This process resulted in a noteworthy start to the development of the scale; however, further work is needed to develop items to appropriately measure the construct of *respect for the horse*. In addition, any modified scale should be retested with a sample of youth participating at introductory or 4-H levels, which may improve the fit of the model overall. Given the broad scope of age, competitive experience level, and equestrian

discipline, future tools to measure sportsmanship in equestrian activity may start with a common, respect-based definition, but will need to focus on specific aspects of a discipline or audience to develop a valid tool. It is likely that the degree of “noise” in the data may be connected to this broad range, and to the wide variety of views as to what constitutes sportsmanship at varying levels of equestrian sport.

It is commonly thought that good science asks more questions than it answers, and the work described in this dissertation has done so as well. For example, the emergence of social media as a factor in sportsmanship behavior is one that has not been extensively studied, but that will likely continue to play a role in society’s interpretation of what happens in both equestrian and traditional sport, how it is viewed, and how it may be used to influence the behavior of others. The use of Facebook, Twitter, and other media represents the vicarious ability that humans use to learn via observation, as described by Bandura (1986). As an example, in a study collecting and describing verbal comments made by commentators and guests during 102 episodes of ESPN Sportscenter (Aicenena, 1999), 1,706 comments were recorded, with 355 of these comments falling into the categories of sportsmanship (good and bad), fights or battery, and immoral behavior. Of these comments, three were considered to be positive. While this particular venue is likely designed to be somewhat controversial in an effort to promote viewership, it makes the point that via vicarious capability, television networks and now, individuals through social media sources, have the ability to teach others through observational learning based on what they choose to post on their social media accounts. In the current research, the use of social media as a means by which to express prosocial behavior in equestrian sport was revealed, and presents an exciting avenue for further research.

This is merely the beginning of a line of research to assess sportsmanship in competitive equestrian activity and the impact of human behavior on show horse welfare. Further, this line of work will develop and evaluate means by which equestrians learn how to interact with horses, and how they develop views regarding moral behavior in regard to competitive equestrian activity, including but not limited to sportsmanship. For example, additional research is needed to find out more about how youth riders participating in the cloverleaf barrel race learn aggressive riding techniques, as well as their views on sportsmanship and respect for their horses. With this information, educational programs may be developed to both improve competitive results and enhance sportsmanship behavior, with limited use of aggressive riding techniques. A series of focus groups with young participants in cloverleaf barrel racing, in combination with the quantitative work described here, could provide a richer view of the reasons young riders ride as they do, and may provide information to further refine the PABES scale and enhance show horse welfare over the long term. In any case, this study has generated a great deal of discussion in the equine popular press, generating more than 16,000 hits on a popular website (Lesté-Lassare, 2013), providing further evidence that it is a topic of industry concern.

In the words of Bandura, “Moral agency is manifested in both the power to refrain from behaving inhumanely and the proactive power to behave humanely” (Bandura, 1999, p. 193). Further research in regard to sportsmanship in competitive equestrian activity at any level, including refinement of the PABES scale, must consider both positive and negative aspects of moral agency, if it is to be accepted and used by practitioners in the field. Although negative aspects of show horse welfare were easily identifiable by those involved in the development of the PABES scale, participants were unable to articulate many positive aspects of show horse

treatment beyond providing treats or petting horses. In order for individuals to practice prosocial show horse treatment, it must be made clear what such behaviors consist of, and individuals must be recognized and rewarded for such behavior. The modified PABES scale must address these issues, although anecdotal interactions would suggest that it is on the right track. Several parents who were either involved in the creation of the initial PABES scale, or whose children participated, shared that they “appreciated the efforts” of the researcher in this regard. Similarly, two youth participants indicated that they “were working on” improving their sportsmanship behavior while competing in equestrian events.

Finally, Bandura’s Theory of Moral Disengagement may hold the keys to the process by which individuals accept and practice antisocial behavior in equestrian sport. He stated, “moral disengagement may center on the cognitive restructuring of inhumane conduct into a benign or worthy one by moral justification, sanitizing language, and advantageous comparison; disavowal of a sense of personal agency by diffusion or displacement of responsibility; disregarding or minimizing the injurious effects of one’s actions; and attribution of blame to, and dehumanization of those who are victimized. Many inhumanities operate through a supportive network of legitimate enterprises run by otherwise considerate people who contribute to destructive activities by disconnected subdivision of functions and diffusion of responsibility. Given the many mechanisms for disengaging moral control, civilized life requires, in addition to humane personal standards, safeguards built into social systems that uphold compassionate behavior and renounce cruelty” (Bandura, 1999, p. 193). Although Bandura was referring to the ways that people treat other people, the same processes likely play a role in the way they treat animals, including horses, in competitive activity. Future research by the author to address matters of sportsmanship and show horse welfare will explore this theoretical approach.

APPENDICES

APPENDIX A

MSU INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

MICHIGAN STATE UNIVERSITY

July 6, 2011

Martha E. Ewing
138 IM Sports Circle
Michigan State University
East Lansing, MI 48824

Dear Dr. Ewing,

The IRB office is in receipt of your initial application for your research study titled "QUANTIFYING AGGRESSIVE RIDING BEHAVIOR OF YOUTH BARREL RACERS AND CONFLICT BEHAVIORS OF THEIR HORSES," IRB# x11-660. After reviewing your information, it has been determined that your research does not involve human subjects, as defined in 45 CFR 46.102(f):

"*Human subject* means a living individual about whom an investigator conducting research obtains: (1) Data through intervention or interaction with the individual or (2) Identifiable private information."



Your application indicates that you are not obtaining data about human subjects through interaction or intervention with the individual, and you are not obtaining identifiable *private* information about living persons.

Since your research does not involve human subjects you do not need further review or approval by the MSU IRB to proceed with this research.

Feel free to contact Katy Hunsche in the IRB office at 517-432-6598 if you have any questions.

Office of Regulatory
Affairs
Human Research
Protection Programs

Biomedical & Health
Institutional Review Board
(BIRB)

Community Research
Institutional Review Board
(CRIRB)

Social Science
Behavioral/Education
Institutional Review Board
(SIRB)

207 Olds Hall
East Lansing, MI 48824
(517) 355-2180
Fax: (517) 432-4503
Email: irb@msu.edu
www.humanresearch.msu.edu

Sincerely,

A handwritten signature in cursive script, likely belonging to Ashir Kumar.

Ashir Kumar, M.D.

Chair, Biomedical and Health Institutional Review Board (BIRB)
Human Research Protection Program

APPENDIX B

MSU ANIMAL USE FORM EXEMPTION

MICHIGAN STATE
UNIVERSITY

MEMORANDUM

TO: Dr. Karen Waite
Animal Science
1287 Anthony Hall

Susan M. Barman

FROM: Dr. Susan M. Barman, Co-Chairperson
Institutional Animal Care and Use Committee

DATE: July 5, 2011

RE: ANIMAL USE FORM EXEMPTION

PROJECT: Quantifying Aggressive Riding Behavior of Youth Barrel Racers and
Conflict Behaviors of Their Horses

FUNDED BY: MSU College of Education Research Enhancement and Research
Practicum Fellowship

The above project is exempt from filing an Institutional Animal Care and Use Committee (IACUC) Animal Use Form (AUF). The exemption is being approved for the following reason:

Project where domesticated vertebrates are only observed and kept under generally accepted agricultural management practices and project involves retrieval of data from paper or electronic records.

This exemption was approved: July 5, 2011

A COPY OF THIS APPROVED EXEMPTION form must be displayed whether on the cage or on the door leading to any live animals covered by the exemption that is kept on Michigan State University property.

Thank you for informing the IACUC of this project. If I can be of further assistance, please do not hesitate to contact the IACUC office at 517.432.8103.

SMB/cjf



INSTITUTIONAL ANIMAL CARE PROGRAM

Institutional Animal Care
and Use Committee

Michigan State University
A620 East Fee Hall
East Lansing, MI
48824-1313

517/432-8103
Fax: 517/432-8105

E-mail: iacuc@msu.edu
Web: www.iacuc.msu.edu

MSU is an affirmative-action,
equal-opportunity institution.

APPENDIX C

PROCESS FOR THE DEVELOPMENT OF A PRELIMINARY SCALE MEASURING PROSOCIAL AND ANTISOCIAL BEHAVIOR IN EQUESTRIAN SPORT

Introductory Comments *(Note: this portion will be stated by the investigator at the beginning of the meeting, following completion of the required consent documents.)*

Investigator: Thank you for your willingness to assist in the development of a tool to measure sportsmanship behavior in competitive equestrian activity. I will first be collecting some demographic information and will then explain the types of behaviors we are collecting to develop this survey.

Demographic Questions *(Note: participants will be provided with a handout to fill out the following information.)*

Age:

Gender:

(Please circle one) I am currently a:

4-H Youth Exhibitor

4-H Horse Judge

Adult 4-H Horse & Pony
Volunteer Leader

Definition of Prosocial and Antisocial Behavior *(Note: this portion will be read by the secondary investigator and provided in writing as part of the handout.)*

(Definitions taken from Kavussanu and Boardley, 2009.)

Prosocial behavior is described as a voluntary behavior intended to help or benefit another. An example in showing horses could be an exhibitor letting a competitor know they have forgotten their back number.

Antisocial behavior is described as behavior that intentionally harms or puts another individual at a disadvantage. An example in showing horses might be one exhibitor cutting off a competitor in the show ring.

Please use this handout to list as many behaviors as possible **that you have observed in equestrian competitors** toward competitors, show management, coaches, trainers, parents, and their horse or pony, that illustrate prosocial and antisocial behaviors. (*Note: more space will be provided for responses in the actual handout.*)

Prosocial Behaviors (Please use back if necessary, and indicate to which category you are referring.)

1. Toward competitors or their horses:
2. Toward show management:
3. Toward coaches, trainers, or parents:
4. Toward horse or pony:

Antisocial Behaviors (Please use back if necessary, and indicate to which category you are referring.)

5. Toward competitors or their horses:
6. Toward show management:
7. Toward coaches, trainers, or parents:
8. Toward horse or pony:

APPENDIX D

YOUTH HORSE SHOW BEHAVIOR QUESTIONNAIRE: 34-QUESTION VERSION

Introductory Questions

Age: _____

I am (please circle one): Male Female

Number of years involved in showing horses: _____

Organization you have been most active with in the past 2 years (circle one):

4-H Breed Youth Association Pony Club Other: _____

State of residence: _____

Please consider your horse showing experiences and respond to the following statements.

In the past two years of showing horses, I have:

1. Complimented another exhibitor.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

2. Used social media (Facebook, Twitter etc.) to thank my parents, coaches, or leaders at horse shows.

1. Never
2. Rarely
3. Sometimes
4. Often

5. Very often

3. Been vocally critical of how a horse show was run.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

4. Encouraged another competitor.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

5. Worked my horse for a long time after a class as punishment for his/her performance.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

6. Been vocally critical of the judges hired at horse shows.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

7. “Talked back” to my parents or other family members when they tried to help me at horse shows.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

8. Loaned another exhibitor tack, equipment, or clothing.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

9. Complained to or confronted show staff or volunteers.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

10. Spurred or kicked my horse when I was unhappy with his/her performance.

1. Never

- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

11. Volunteered to set up equipment at a horse show where I was showing.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

12. Helped another competitor learn a pattern.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

13. Thanked a judge or show committee members for their efforts.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

14. Informed another competitor about forgotten or incorrect equipment, including back numbers.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

15. Ignored my coaches, leaders, or trainers when they tried to help me.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

16. Volunteered at a show when I was not showing.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

17. Put my horse's needs above my own at horse shows.

1. Never
2. Rarely
3. Sometimes

- 4. Often
- 5. Very often

18. Helped another competitor care (feed, water, clean, health care) for her/his animal.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

19. Made fun of other horses and riders at shows, with my friends.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

20. Given my horse treats to thank him/her for doing a good job.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

21. Complimented a judge or show staff.

- 1. Never
- 2. Rarely

3. Sometimes

4. Often

5. Very often

22. Yelled at one of my parents or other family members at a horse show.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

23. Yelled at my horse as a form of punishment.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

24. Showed appreciation when my parents or other family members took me to horse shows.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Very often

25. Jerked on my horse's mouth when I was unhappy with his/her performance.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

26. Made sarcastic or hurtful comments to competitors at horse shows.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

27. Used social media (Facebook, Twitter, etc.) to thank judges or show staff at horse shows.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

28. Used social media (Facebook, Twitter, etc.) to congratulate fellow competitors at horse shows.

1. Never
2. Rarely
3. Sometimes

- 4. Often
- 5. Very often

29. Been uncomfortable with the training or management practices that others suggested I do to my horse.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

30. Done what my parents, coaches, or trainers suggested when they tried to help me.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

31. Ignored or excluded my parents or other family members at horse shows.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

32. Ignored other exhibitors at horse shows, even when they talked to me.

- 1. Never

- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

33. Thought that my parents' responsibility was to provide me with a horse showing experience.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

34. Petted my horse when I wanted to reward him/her for doing a good job.

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Very often

Thank you for your assistance!

APPENDIX E

INITIAL IRB APPLICATION APPROVAL

MICHIGAN STATE UNIVERSITY

Initial IRB Application Approval

July 31, 2012

To: Martha E. Ewing
138 IM Sports Circle
MSU

Re: **IRB# 12-699** Category: EXPEDITED 2.7
Approval Date: July 31, 2012
Expiration Date: July 30, 2013

Title: The development of a preliminary scale measuring prosocial and antisocial behavior in equestrian sport-Phase I

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been approved**.

The committee has found that your research project is appropriate in design, protects the rights and welfare of human subjects, and meets the requirements of MSU's Federal Wide Assurance and the Federal Guidelines (45 CFR 46 and 21 CFR Part 50). The protection of human subjects in research is a partnership between the IRB and the investigators. We look forward to working with you as we both fulfill our responsibilities.

Renewals: IRB approval is valid until the expiration date listed above. If you are continuing your project, you must submit an *Application for Renewal* application at least one month before expiration. If the project is completed, please submit an *Application for Permanent Closure*.

Revisions: The IRB must review any changes in the project, prior to initiation of the change. Please submit an *Application for Revision* to have your changes reviewed. If changes are made at the time of renewal, please include an *Application for Revision* with the renewal application.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects, notify the IRB office promptly. Forms are available to report these issues.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,



Ashir Kumar, M.D.
BIRB Chair

c: Karen Waite



Office of Regulatory Affairs
Human Research
Protection Programs

Biomedical & Health
Institutional Review Board
(BIRB)

Community Research
Institutional Review Board
(CRIRB)

Social Science
Behavioral/Education
Institutional Review Board
(SIRB)

Olds Hall
408 West Circle Drive, #207
East Lansing, MI 48824
(517) 355-2180
Fax: (517) 432-4503
Email: irb@msu.edu
www.humanresearch.msu.edu

MSU is an affirmative-action,
equal-opportunity employer.

APPENDIX F

PART II: TASK AND EGO ORIENTATION IN SPORT QUESTIONNAIRE

Directions: Please read each of the statements and indicate how much you agree with each statement by checking the appropriate response. In general, when do you feel successful when showing horses? In other words, when do you feel a horse show has gone really well for you? Remember, there are no right or wrong answers.

Circumstance	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
I feel most successful showing horses when I do my very best.	1	2	3	4	5
I feel most successful showing horses when I am the only one who can do the skill.	1	2	3	4	5
I feel most successful showing horses when I learn a new skill and it makes me want to practice more.	1	2	3	4	5
I feel most successful showing horses when I can do better than others.	1	2	3	4	5
I feel most successful in showing horses when I work really hard.	1	2	3	4	5
I feel most successful in showing horses when I win high point awards or have the fastest times.	1	2	3	4	5
I feel most successful in showing horses when I learn something that is fun to do.	1	2	3	4	5
I feel most successful in showing horses when others mess up and I don't.	1	2	3	4	5

I feel most successful in showing horses when others can't do as well as me.	1	2	3	4	5
I feel most successful in showing horses when something I learn makes me want to go practice more.	1	2	3	4	5
I feel most successful in showing horses when I'm the best.	1	2	3	4	5
I feel most successful in showing horses when a new skill I learn really feels right.	1	2	3	4	5

APPENDIX G

PART III: INTERPERSONAL REACTIVITY INDEX

Directions: Please read each of the following statements and show us how much you agree with each statement by checking the appropriate response. Remember, there are no right or wrong answers.

Perspective Taking Subscale (Note: Subscale titles are included here for descriptive purposes only and will not be included in the actual instrument.)

Circumstance	Does not describe me well				Describes me very well
Before criticizing somebody, I try to imagine how I would feel if I were in their place.	0	1	2	3	4
If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.	0	1	2	3	4
I sometimes try to understand my friends better by imagining how things look from their perspective.	0	1	2	3	4
I believe that there are two sides to every question and try to look at them both.	0	1	2	3	4
I sometimes find it difficult to see things from the "other guy's" perspective.	0	1	2	3	4
I try to look at everybody's side of a disagreement before I make a decision.	0	1	2	3	4
When I'm upset at someone, I usually try to "put myself in his shoes for awhile."	0	1	2	3	4

Empathic Concern Subscale

Circumstance	Does not describe me well				Describes me very well
When I see someone being taken advantage of, I feel kind of protective toward them.	0	1	2	3	4
When I see someone treated unfairly, I sometimes don't feel very much pity for them.	0	1	2	3	4
I often have tender, concerned feelings for people less fortunate than me.	0	1	2	3	4
I would describe myself as a pretty soft-hearted person.	0	1	2	3	4
Sometimes I don't feel sorry for other people when they are having problems.	0	1	2	3	4
Other people's misfortunes do not usually disturb me a great deal.	0	1	2	3	4
I am often quite touched by things that I see happen.	0	1	2	3	4

REFERENCES

REFERENCES

- Aicenena, S. (1999). *One hundred and two days of "Sportscenter": Messages of poor sportsmanship, violence and immorality* [ED426998] from ERIC Document Reproduction Service
- American Horse Council. (2005). *Economic impact of the horse industry in the United States*. Washington, DC: Author.
- Arbuckle, J. L. (2010). *IBM SPSS Amos 19 user's guide*. Retrieved from <http://www.amosdevelopment.com/download/amos.pdf>.
- Arnold, M. E., & Nott, B. D. (2010). *Oregon state 4-H horse program evaluation*. Retrieved from http://oregon.4h.oregonstate.edu/sites/default/files/final_osu_horse_leader_report.pdf
- Bandura, A. (1973). *Aggression: A social learning analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, 3(3), 193–209.
- Boardley, I. D., & Kavussanu, M. (2008). The moral disengagement in sport scale-short. *Journal of Sport Science*, 26(14), 1507–1517.
- Bredemeier, B. J. L., & Shields, D. L. L. (1998). Moral assessment in sport psychology. In J. L. Duda (Ed.), *Advances in Sport and Exercise Psychology Measurement* (pp. 257–276). Morgantown, WV: Fitness Information Technology.
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Press.
- Butcher, J., Lindner, K. J., & Johns, D. P. (2002). Withdrawal from competitive youth sport: A retrospective ten-year study. *Journal of Sport Behavior*, 25(2), 145–163.
- Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment*. USA: Sage University Papers.

- Character. (n.d.). *Merriam-Webster.com*. Retrieved from <http://www.merriam-webster.com/dictionary/character>
- Clifford, C., & Feezel, R. M. (1997). *Coaching for character*. Champaign, IL: Human Kinetics.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113–126.
- Duda, J. L. (1989). Relationship between task and ego orientation and the perceived purpose of sports among high school athletes. *Journal of Sport and Exercise Psychology*, 11, 318–335.
- Duda, J. L. (1998). *Advances in sport and exercise psychology measurement*. Morgantown, WV: Fitness Information Technology.
- Eitzen, D. S. (1988). Ethical Problems in American Sport. *Journal of Sport and Social Issues*, 12(1), 17–30.
- Evans, D., & McGreevy, P. (2011). An investigation of racing performance and whip use by jockeys in Thoroughbred races. *PloS ONE*, 6(1). doi:10.1371/journal.pone.0015622
- Evans, J. W., Borton, A., Hintz, H., & VanVleck, L. D. (1990). *The horse* (2nd ed.). New York: W. H. Freeman.
- Fraser-Thomas, J., Cote, J., & Deakin, J. (2008). Understanding dropout and prolonged engagement in adolescent competitive sport. *Psychology of Sport and Exercise*, 9, 645–662.
- Gano-Overway, L. A., Guivernau, M., Magyar, T. M., Waldron, J. J., & Ewing, M. E. (2005). Achievement goals and perceptions of motivational climate on sportspersonship: individual and team effects. *Psychology of Sport and Exercise*, 6(2), 215–232.
- Hansen, D. M., Larson, R. W., & Dworkin, J. B. (2003). What adolescents learn in organized youth activities: A survey of self-reported developmental experiences. *Journal of Research on Adolescence*, 13(1), 25–55.
- Harrington, D. (2009). *Confirmatory factor analysis*. New York: Oxford University Press.
- Hartmann, D. (1977). Considerations in the choice of interobserver reliability estimates. *Journal of Applied Behavior Analysis*, 10(1), 103–116.
- Hedstrom, R., & Gould, D. (2004). *Research in youth sports: Critical issues status* [White paper summaries of the existing literature]. Retrieved from <http://www.educ.msu.edu/ysi/project/CriticalIssuesYouthSports.pdf>

- Kaiser, L., Heleski, C. R., Siegford, J., & Smith, K. A. (2006). Stress-related behaviors among horses used in a therapeutic riding program. *Journal of American Veterinary Medical Association*, 228(1), 39–45. doi:10.2460/javma.228.1.39
- Kavussanu, M. (2006). Motivational predictors of prosocial and antisocial behaviour in football. *Journal of Sports Sciences*, 24, 575–588.
- Kavussanu, M., & Boardley, I. D. (2009). The prosocial and antisocial behavior in sport scale. *Journal of Sport and Exercise Psychology*, 31, 97–117.
- Kavussanu, M., Seal, A. R., & Phillips, D. R. (2006). Observed prosocial and antisocial behaviors in male soccer teams: Age differences across adolescence and role of motivational variables. *Journal of Applied Sport Psychology*, 18, 326–344.
- Kellert, S. R. (1996). *The value of life: Biological diversity and human society*. Washington, DC: Island Press.
- Kendall, H. A., Lobao, L. M., & Sharp, J. S. (2006). Public concern with animal well-being: Place, social structural location, and individual experience. *Rural Sociology*, 71(3).
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford Press.
- Kohn, A. (1986). *No contest: The case against competition*. Boston: Houghton Mifflin.
- Lee, M. J., Whitehead, J., & Ntoumanis, N. (2007). Development of the attitudes to moral decision-making in youth sport questionnaire [AMDYSQ]. *Psychology of Sport and Exercise*, 8, 369–392.
- Lesté-Lassare, C. (2013). Aggressive aids' effects on barrel racing horses studied. *TheHorse.com* [Website]. Retrieved from <http://www.thehorse.com/articles/31330/aggressive-aids-effects-on-barrel-racing-horses-studied>
- Litwin, M. S. (1995). *How to measure survey reliability and validity* (Vol. 7). Thousand Oaks, CA: SAGE Publications.
- May, R. A. (2001). The sticky situation of sportsmanship: Contexts and contradictions in sportsmanship among high school boys basketball players. *Journal of Sport and Social Issues*, 25(4), 372–389.
- McGreevy, P., & McLean, A. (2010). *Equitation science*. West Sussex, United Kingdom: Wiley-Blackwell.

- Michigan 4-H Youth Development. (2011). *4-H horse and pony project show rules and regulations*. East Lansing: Michigan State University, MSU Extension, 4-H Youth Development.
- Petitpas, A. J., Van Raalte, J. L., Cornelius, A. E., & Presbrey, J. (2004). A life skills development program for high school student-athletes. *Journal of Primary Prevention*, 24(3), 325–334.
- Physical Activity Council. (2012). *Participation report: The Physical Activity Council's annual study tracking sports, fitness and recreation participation in the USA*. Retrieved from <http://www.physicalactivitycouncil.com/PDFs/2012PacReport.pdf>
- Reynolds, K. C. (2010). AQHA steward program pro . . . or just a con? *The Equine Chronicle*, September/October, 582–590.
- Saunders-Ferguson, K., Barnett, R. V., Culen, G., & TenBroeck, S. (2008). Self-esteem assessment of adolescents involved in horsemanship activities. *Journal of Extension*, 46(2), 10. Retrieved from <http://www.joe.org/joe/2008april/a6.php>
- Shields, D. L., Bredemeier, B. L., LaVoi, N. M., & Power, F. C. (2005). The sport behavior of youth, parents, and coaches: The good, the bad, and the ugly. *Journal of Research in Character Education*, 3(1), 43–59.
- Shields, D. L. L., & Bredemeier, B. J. L. (1995). *Character development and physical activity*. Champaign, IL: Human Kinetics.
- Shields, D. L. L., LaVoi, N. M., Bredemeier, B. L., & Power, F. C. (2007). Predictors of poor sportspersonship in youth sports: Personal attitudes and social influences. *Journal of Sport and Exercise Psychology*, 29, 747–762.
- Skelly, C. D., Heleski, C. R., Tomlinson, T., Zanella, A. J., & Waite, K. L. (2005). Development, delivery, and survey results from a horse show ethics adult extension workshop. In *Proceedings of the 19th Equine Science Society Symposia* (pp. 272–277). Tucson, AZ.
- Smith, C. E., Swinker, A. M., Comerford, P. M., Radhakrishna, R. B., & Hoover, T. S. (2006). Horsemanship and life skills of youth in horse programs. *The Professional Animal Scientist*, 22, 89–93.
- Sportsmanship. (n.d.). *Merriam-Webster.com*. Retrieved from <http://www.merriam-webster.com/dictionary/sportsmanship>
- U.S. Equestrian Federation. (2011). *The United States equestrian federation* [Website]. Lexington, KY: Author. Retrieved from <http://www.usef.org/Default.aspx>

- Vallerand, R., Brière, N., Blanchard, C., & Provencher, P. (1997). Development and validation of the multidimensional sportspersonship orientations scale. *Journal of Sport and Exercise Psychology*, 19, 197–206.
- Vallerand, R. J., Deshaies, P., Cuerrier, J.-P., Brière, N. M., & Pelletier, L. G. (1996). Toward a multidimensional definition of sportsmanship. *Journal of Applied Sport Psychology*, 8, 89–101. doi:10.1080/10413209608406310
- Vincent, W. J. (1999). *Statistics in kinesiology*. Champaign, IL: Human Kinetics.
- Waite, K. L., Ondersma, L. A., Shelle, J., Heleski, C., & Kaiser, L. (2010). *Evaluating life skills development of 4-H participants in multi-species state-level animal science projects* [Unpublished work].
- Weiss, M. R. (2004). *Developmental sport and exercise psychology: A lifespan perspective*. Morgantown, WV: Fitness Information Technology.
- Weiss, M. R. (2008). 2007 C.H. McCloy lecture: “Field of dreams”: Sport as a context for youth development. *Research Quarterly for Exercise and Sport*, 79(4), 434–439.
- Weiss, M. R., & Gill, D. L. (2005). What goes around comes around: Re-emerging themes in sport and exercise psychology. *Research Quarterly for Exercise and Sport*, 76, S71–S87.
- Williams, L., & Gill, D. L. (2000). Aggression and prosocial behavior. In D. L. Gill (Ed.), *Psychological Dynamics of Sport and Exercise*. Champaign, IL: Human Kinetics.