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After-School Martial Arts: A History, Perceptions of Academic Advantage, and Effects on Academic Performance

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**AFTER-SCHOOL MARTIAL ARTS: A HISTORY, PERCEPTIONS OF ACADEMIC
ADVANTAGE, AND EFFECTS ON ACADEMIC PERFORMANCE**

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Sociology

by

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I dedicate this dissertation to my family. To my partner, Jaren, thank you for always staying by my side through the late nights and many adversities faced throughout this process. You were always my refuge through this journey providing comfort when I needed it most. Thank you to my parents and siblings for providing a fun environment when I was able to get away from the stress of work. That provided the balance that helped me make it through this experience. My entire family helped me make it to this point and I love you all for all that support.

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Table of Contents

Acknowledgements.....	iii
List of Tables.....	v
Abstract.....	vi
Chapter 1. Introduction.....	1
Chapter 2. Parents’ After-School Choices and Extracurricular Martial Arts Development: A Historical Perspective.....	7
Chapter 3. Perspectives of Martial Arts Impact on Education.....	32
Chapter 4. Martial Arts and Academic Performance.....	57
Chapter 5. Conclusion.....	85
Appendix A. Institutional Review Board Documents.....	89
Appendix B. Interview Guide for Parents.....	93
Appendix C. Interview Guide for Students.....	95
Vita.....	97

List of Tables

Table 2.1: Timeline of Development of After-School Activities in the U.S.....	19
Table 2.2: Timeline of Development of Martial Arts in the U.S.....	26
Table 3.1: Demographic Information Martial Arts Participants and their Families.....	43
Table 3.2: Parents General Response About the Relationship of Martial Arts to their Children's Grades.....	45
Table 4.1: Descriptive Statistics for Variables of Interest.....	69
Table 4.2: Matching K-5 Martial Arts Participants with Classmates.....	72
Table 4.3: Descriptive Statistics Sustained Participation in Structured Activities.....	73
Table 4.4: Regression Results Martial Arts Relationship to Standardized Test Score.....	77
Table 4.5: Results from Paired T-test Martial Arts Relationship to Reading Change Scores.....	79
Table 4.6: Difference Model Results Sustained Martial Arts Involvement Impact on Standardized Test Scores.....	80

Abstract

This dissertation utilizes mixed methods to further our understanding of (a) how martial arts became an established after-school activity for elementary school children, (b) how parents and participants perceive the value of martial arts, and (c) whether sustained participation in martial arts is associated with academic gains. I begin with a historical case study that examines how parents came to see martial arts as one of the viable after-school activities for their elementary school age children. Next, I employed qualitative observations and in-depth interviewing techniques to learn more about what parents and participants perceived as attractive in martial arts programs and any connection to educational success. Finally, I used quantitative methods and a nationally-representative data set to explore the relation between sustained martial arts participation and improved test scores of U.S. elementary school children (from kindergarten through fifth grade). The central findings of my dissertation are three-fold. First, parental interest in martial arts for their children dovetailed with the growing integration of the practice into U.S. culture along with the marketing of multiple benefits of participation to parents. Second, parents and participants today perceive multiple benefits of participation, including (but not limited to) enhanced academic performance. Third, my quantitative findings did not lend strong support for academic benefits of any martial arts participation, but I uncovered some evidence that sustained participation was associated with increased reading scores.

Chapter 1. Introduction

For at least the past two decades, millions of American parents have been enrolling their elementary school age children in after-school martial arts programs (USA Dojo 2018). Parents pick up their children from school, drive them to a martial arts studio, or dojo, and watch as their children learn about and participate in, martial arts instruction. Their children slowly learn the routines and forms that have been practiced in Asia for centuries and have gradually spread globally. Children who persist with the training, slowly demonstrate competencies and earn different color belts (typically beginning with a white belt and culminating with a black belt) signifying their status among the other participants. Parents of martial arts participants had multiple options for other after-school activities such organized sports, music, dance, clubs, and many others, including staying at home. However, the question remains: Why do they choose martial arts?

While certain after-school activities such as boys' and girls' clubs and organized sports gained popularity after World War II, in America, increasingly parents began demanding more, higher-quality, and structured, after-school programs for their elementary school age children (Kadzielski 1977; Macleod 1983; Halpern 2002). Higher demand is partially linked to increased female labor force participation and dual career parents searching for dependable and valuable ways to fill the gap between the end of the school day and they end of the work day (Halpern 2002). Sociologists have long been interested both in why parents choose to enroll their children in certain after-school programs (Bourdieu 1979; Lareau 2003), and whether different types of programs have differential effects on child outcomes.

Currently, cultural capital perspective is one of the most commonly used sociological lenses for understanding parents' decisions to enroll children in after-school structured programs.

Bourdieu (1979), in foundational work on cultural capital, argues that parents strive to provide their children with cultural advantages that enable successful navigation of social institutions, particularly schools, and therefore lead to the intergenerational reproduction of class advantages and disadvantages. Lareau (2003) and others have since extended cultural capital perspectives to the context of the United States. They argued that parents after-school programs choices reflect their perceptions of which, among the available options of structured activities, are most in line with their efforts at “concerted cultivation” or grooming their children for success in school and beyond. Empirical studies lend some support to the contention that certain structured after-school programs lead to positive child outcomes (Dumais 2002; Hunt 2005; Dumais 2006; Covay and Carbonaro 2010,).

As the popularity of after-school programs grew, more and more scholars began to explore family decisions to enroll children in specific types of programs, including martial arts, focusing on parents’ perceptions of benefits, and specifically the objective relationship to academic outcomes (Lantz 2002; Lakes and Hoyt 2004; Theeboom, De Knop, and Wylleman 2008; Lakes et al. 2013; Alesi et al. 2014; Vertonghen and Theeboom 2014; Cairney, Joshi, Kwan, Hay, and Faught 2015; Beesley and Fraser-Thomas 2015; Cho et al. 2017; Lima et al. 2017). These studies are valuable because they provide insights into parents’ perceptions and family decision-making processes, as well as the effects of participation on children. In this mixed methods dissertation, I contribute to this discussion about the popularity and effects of martial arts programs for elementary school children in three important ways. (1) I use a historical case study approach to explore both the emergence of after-school activities, more generally, and the expansion of martial arts into US culture. (2) I conducted qualitative research using observations and in-depth interviews to better understand the motivations of parents and

their children participating in martial arts programs. (3) I conducted a quantitative analysis to explore the effects of sustained engagement in martial arts in the early elementary school years.

In brief, my dissertation addresses the following research questions:

- (1) How did American parents come to perceive martial arts as one of the viable structured, after-school activities in the U.S.?
- (2) How do parents and their participating children perceive the mechanisms mediating the relationship between martial arts and education?
- (3) Does sustained martial arts improve children's reading and math standardized test scores?

To answer the first question, in Chapter 2, I present a two-pronged historical analyses of (a) the origins and development of the landscape of after-school options for American parents when deciding where to send their children in the evening and (b) the emergence and evolution of martial arts as a cultural phenomenon in the United States and one of the viable structured activity options for parents and young children. In brief, parents had relatively few after-school activity options before World War II but the landscape expanded dramatically in the late 20th Century as more and more middle class women entered the labor force (Halpern 2002). Parents' choices expanded to a wider range of sports and clubs, in addition to continued expansion of "cultural" activities such as music, dance, and art. American parents became familiar with martial arts when it was popularized through President Theodore Roosevelt's promotion of Judo and increased, as a cultural phenomenon, with the rise of martial arts movies and TV shows (Green and Svinth 2010; Looser 2010). However, parents only started enrolling young children when lighthearted media depictions of the activity softened the prior tough exterior (Shu 2003).

I address my second research question in Chapter 3 through a qualitative investigation into the perception parents have about the relationship between martial arts and education. Furthermore, I explore what mechanisms they think mediate that relationship. I investigated this by combining ethnographic observations with semi-structured interviews with parents, participants, and instructors in two martial arts settings. My research yielded three ways in which families saw marital arts helping with education: (1) assisting participants with both setting and achieving appropriate goals; (2) teaching children responsibility; and (3) supplementing treatment for child participants who had been diagnosed with cognitive and behavioral disorders.

In Chapter 4, I address the third research question through a three-part quantitative investigation into the relationship between sustained martial arts participation and education. First, I conduct an analysis that identifies the relationship between any martial art involvement and educational outcomes. Second, I investigate the impact of six years of martial arts training on academics. Lastly, I measure the impact of multiple ranges of involvement that were less than six years and discuss the impact. Overall, the findings showed mixed results related to martial arts and academic outcomes. I found no support for the contention that short-term involvement in martial arts was associated with improved reading or math scores. However, my models using sustained participation did lend support to the idea that long term participation is associated with improvements in reading scores.

In Chapter 5, I discuss the overall findings and contributions of my dissertation. I contributed historical turning points, identified perceived mediating factors between marital arts and education, and tested the significance of duration of involvement in the activity on academic outcomes. I conclude Chapter 5 with the limitations of my current investigation and directions for future research in this line of study.

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Chapter 2. Parents' After-School Choices and Extracurricular Martial Arts Development: A Historical Perspective

Introduction

In this chapter, I explore the historical factors that led to the current situation in which millions of American parents are enrolling their young children in martial arts programs. My first research question, “How did American parents come to perceive martial arts as one of the viable structured, after-school activities in the U.S.?”, implies that parents’ choices have changed dramatically over time. In order to better understand the shifting landscape of parents’ after-school options for their children, I conducted a dual-approach historical analysis. First, I reviewed the literature on the options that US parents enjoyed throughout history for their children’s free time. I begin this chapter with a discussion of the change in landscape for families in the United States and how that developed into larger discussions and plans on how to navigate free time. Second, I discuss how parents came to perceive martial arts as one of the viable after-school options. I start this part by exploring the historical introduction and expansion of martial arts into American culture. After that, I discuss the emergence of a global network of organizations that support martial arts instruction around the world. Subsequently, I proceed to explain the prevalence of participation in martial arts in the United States and how it has been marketed to families as an option of an after-school activity. Finally, I conclude with a detailed discussion of the key historical factors that led to the emergence of the current situation where martial arts have achieved an institutionalized status as a viable structured activity for children throughout the United States.

Emergence of Children's Free Time and Parents' Options

The lives of parents and children in the United States were dramatically altered during the 1800s with the Industrial Revolution and the expansion of public schooling (Woods and Kennedy 1922). Many people migrated from rural family farms to crowded urban centers. At the same time, there was a steady flow of immigration from all over the world and those people brought with them leisure activities from their homeland (Lucas and Smith 1978). During 1820, only 693,000 Americans (7.2 percent) lived in urban centers, defined as towns of 2,500 or more. However, that number grew to 9,902,000 (25.7 percent) in 1870 and then again rose to 54,158,000 (51.2 percent) by 1920 (Macleod 1983). Also, between 1800 and 1900, prosperity and urbanization led to the decrease in size of families as birthrates lowered to roughly half their original numbers over the time period (Macleod 1983). With these transitions came a new way of life that involved a decline in reliance on child labor, the development of required schooling, and crowded conditions, with tenements, row homes, and factories huddled together on cramped streets (Kadzielski 1977; Macleod 1983; Halpern 2002).

As conditions changed, parents began exploring new opportunities to engage their children in activities to enhance children's health and happiness. Subpar eating habits, lack of recreation spaces, and limited chances for involvement in sports produced unsuitable conditions for the masses in many urban areas (Lucas and Smith 1978). Sawyer (1847) in his *Plea for Amusements* reiterated many times in his text for there to be an equilibrium between hard work and leisure services. One of the earliest after-school options for children involved organized sports. Students at American boarding schools started organizing their own after-school sports groups as early as the late 1700s (Pruter 2013). After the 1850s more and more parents were encouraged to enroll their children (particularly sons) in sports as many influential thinkers of the

time began to express, in their writing, the view that the American male was weakening in comparison to the Greeks that came before them or the English of their own time (Lucas and Smith 1978). Hughes' 1857 book, *Tom Brown's Schooldays*, envisioned a life in a particularly athletic environment at the Rugby School during the administration of the great headmaster, Thomas Arnold, led to the expansion, in America, of the ideals of "Muscular Christianity" (Pruter 2013). Muscular Christianity was at the time popular in English Public Schools and emphasized: church, academics, and competitive sports (Lucas and Smith 1978).

After-school sports was further popularized as an option for parents and children during the Civil War. Secession of the South left room for the expansion of Industrial life in the North without having to face the resistance of those in the South anymore (Lucas and Smith 1978). In fact, this conflict provided clearance for the development of a railroad that spanned across the nation (Lucas and Smith 1978). These railroad systems would become used for the first intercity competitions and the invention of the telegraph allowed for instant updates on scores that led to further popularization of sport as a leisure activity (Mandel 1984). Joint influences of new dilemmas with Industrialization and the abolitionist spirit that arose with the Civil War shifted the United States from a spirit of individualism to a new community focus (Woods and Kennedy 1922). Post-Civil War there was a rise in national interest in baseball and many baseball associations were formed by students at preparatory schools (Pruter 2013). In these associations, however, it was not a requirement to attend the school in order to be a part of the team, and there was not a concept of the team representing the school. Most games were intermural (Pruter 2013). By the first years of the 1880s, extracurricular options for parents and children in schools also included the founding of school newspapers, football, glee club, student government, debate, fraternities and sororities (Pruter 2013).

As time went on, children's medical and social plights were brought to the attention of parents, and after-school activities were seen as a remedy. Work of scholars including Jacob Riis's *How the Other Half Lives* and those working with Jane Addams in the Hull House brought attention to the spread of disease in urban centers and the fact that children were more apt to contract illnesses (Kadzielski 1977). Along with these health concerns there were also fears of children turning to delinquency if not supervised during their free time (Halpern 2000). Philanthropists who observed the plights of inner-city children came up with a remedy of providing a supervised setting for play, which led to further development of after-school programs as after-school options for parents (Kadzielski 1977). These early programs were far less structured than the activities we have today. Organizers used a variety of different locations for children's after-school time, including store fronts, YMCAs, sand gardens, settlements, churches, and ethnic community centers (Kadzielski 1977; Macleod 1983; Halpern 2002).

Eminent American railway businessman and philanthropist, Edward Harriman, provided one such option for parents when he opened a store front boy's club (Daily Telegraph 1909; Kennan 1922; Halpern 2002). One such goal of many philanthropist of the time was to address problematic social conditions (Devine 1913). Harriman followed this logic and developed a boys' club in 1876 at Tomkins Square in Manhattan, initially enrolling seven children, in response to local concern over ill-behaved boys on the streets (Daily Telegraph 1909; Kennan 1922; Halpern 2002). At the store front after-school boys' clubs, children generally just hung out, played board games, read, and occasionally received tutoring in school subjects by volunteers (Halpern 2002). Store front boy's clubs expanded in New York and other northeastern cities over the next decades. By 1892, Jacob Riis recorded 31 boys' clubs in New York City, 27 supported by some church, mission, or church-related organization (Macleod 1983).

The Young Men's Christian Association (YMCA), formed originally in the 1850s, intended to cater to men as a location for "combining library and literary society with prayer meetings and Bible classes" (Macleod 1983:72). However, they soon came to take part in the boys' club movement and became an option for parents when deciding where to send their child in the after-school hours (Macleod 1983). This initially was brought upon by boys themselves who would wander onto the facility at such frequency that they were eventually offered a room to convene in (Macleod 1983). Soon there came a shift in clientele; thus, the YMCAs changed their focus in the 1880s from assisting the least fortunate boys in cities to providing a venue for middle class parents to send their children where they built the character of those boys of the middle class (Macleod 1983). In the 1890s, gymnasiums were added to many YMCAs in order to contend against those connected to saloons. According to Macleod (1983:73), it was thought "even alcohol could not surpass exhaustion as a cure for business tensions or restless cravings." Therefore, YMCAs began to use sport as an option for parents to entice children to stay off the street after-school (Mandell 1984).

Another avenue for parents' choice in the use of their child's free time after-school involved sand lots or sand garden varieties. First becoming popular in Berlin, Germany and later in the United States, three sand gardens were first built in Boston in 1886 by the Massachusetts Emergency and Hygiene Association, following the advice of a Dr. Zakrzewska, who observed them in a trip to Berlin (Kadzielski 1977). These programs were located on playgrounds with a sand pile, swings, and see-saws. They emphasized physical activity and were monitored by community volunteers. These programs also multiplied in the last decade of the 19th Century and into the 20th Century.

Settlements, churches, and ethnic community centers similarly established their own varieties of after-school clubs as options for families to send their children in the 1880s (Halpern 2002). Early settlements in the United States assisted the poor living in cities such as New York, Chicago, and Boston and offered extracurricular programs as one such service, providing even further options for parents' and children's options after-school activities (Sebastian 2013).

Over the next fifteen years, parents' options for after-school programs expanded substantially throughout the United States. This proliferation was dubbed the "play movement" by the turn of the 20th Century. In 1898, Dickinson Square playground in Philadelphia opened marking the transition from rudimentary sand gardens to full functioning playgrounds. The first playground of its kind, Dickenson Square had a running track, sand garden, swings, space for games, and separate buildings for girls and boys with baths, becoming the "model playground." By 1899, the superintendent of Boston, directed 21 sand gardens in their city alone (Kadzielski 1977). Boys' and girls' clubs experienced similar success. For example, the Tompkins Square Boy's Club expanded from its original seven participants to over 400 members by 1900 (Halpern 2002).

Children's Structured Activity Expansion in the 20th Century

Parents' options for their children's recreational activities grew on many fronts by the turn of the century. Industrialization had built up cities so much that rear yards were vanishing along with a disappearance of the space that separated buildings from the street. These changes led, settlement workers and citizens to advocate for playgrounds (Woods and Kennedy 1922).

From 1885 to 1890, a small group of educated men and women became trailblazers of a new type of public-spirited citizenship and began to address the issues related to labor done by women and children leading to the 8-hour work day (Woods and Kennedy 1922). Williamson's

(1902) article *Ethical Values of Social Organizations* indicated that by the early 1900s many social organizations addressed topics such as societal issues, philanthropy, and social events. Membership of such clubs included those in various fields such as doctors, lawyers, ministers, bankers, architects, authors, merchants, among others (Williamson 1902).

Successful expansion of playgrounds through the turn of the 20th century led to the founding of, one such organization, the Playground Association of America, in 1907, that would become a source for parents' options of extracurricular activities (Kadzielski 1977). According to *The Women's Journal* (1906), the mission of the Playground Association of America was to scientifically investigate the games and play of children, present information, train directors of public playgrounds, and gain public support of the same ideals across the country. The *Times* reported in (1908) that approximately three million sterling had been spent on playgrounds in Manhattan and 800,000 in Chicago. Gradually over the course of time playgrounds went from philanthropically run to government managed. For example, in 1911, the Pennsylvania State Legislature authorized cities to establish departments of recreation to supervise after-school programs (Kadzielski 1977). This marked a transition from after-school activities primarily concerning those who had time to worry about the topic and assist, to an institutionalized initiative that would come to be an expectation of communities.

Also, at the turn of the century President Theodore Roosevelt was a large advocate of one specific option for parents: sports. The activity became viewed as a form of patriotism (Lucas and Smith 1978; Mandell 1984). Around this same time, extracurricular activities would become an option for more families as school attendance laws began to take effect, though mainly limited to children under 14 (Macleod 1983). Free public schooling was growing. In the 1889-1890 school year, the country counted roughly more than 220,000 students in 2,526 public high

schools, meanwhile there were about 145,000 students in 1,634 private schools. By the end of the 1890s, the number of public schools increased to 6,005 schools, educating 530,000 students, compared to 1,978 private schools, teaching about 189,000 students (Pruter 2013).

Additionally, at the turn of the century settlements found themselves able to build gyms attracting parents and children to their facilities (Woods and Kennedy 1922). Other settlements, such as the Chicago Settlement, in 1905, paid the city for the use of public-school facilities offering clubs and classes on a variety of topics and events (Woods and Kennedy 1922). In 1912, Dickenson provided guidance on how to open and facilitate social and recreation centers out of school houses. Typical settlement activities parents chose for boys included playing ball and boxing, while options offered to parents for girls included homemaking, art, music, literature, dramatics, and pageantry classes (Woods and Kennedy 1922). By 1910, the idea of the “mass club” developed and many boy’s clubs started to raise money for their own buildings. Within these complexes, there was space for gyms, industrial art rooms, studios, libraries, kitchens, sometimes auditoriums and swimming pools. Often their advanced quality provided more options for parents and children to choose from for after-school time (Halpern 2002). These facilities came a long way from their beginnings in store front windows.

The substantial increase in health and strength shown by children under settlement gymnastic directors paved the way for the introduction of physical education in the public-school system (Woods and Kennedy 1922). During this time, there was a shift in power from sports in schools being student run to facilitated and managed by administrators as a part of physical education (Pruter 2013). In the early 1900s, colleges and universities often took charge of sponsoring high school contests (Pruter 2013). By 1902, there were documents such as Kroh’s (1902) article detailing how to conduct physical education in schools. In 1910, public schools

began developing recreation centers which encompassed activities such as: nature study, clay modeling, charcoal drawing, carpentry, and playground time as options for families of the period (Halpern 2000).

In 1913, the health of children was seen as in jeopardy and parents enrolling their children in extracurricular activities was viewed as the remedy (Curtis 1915). The International Meeting on School Hygiene, held in Buffalo, resulted in their leading specialist estimating that one million school children in the United States suffered with tuberculosis (Curtis 1915). Curtis (1915) wrote in, *Education Through Play*, of organized play having a relation to the reduction of tuberculosis in three ways: by keeping children in open air, developing the lungs, and building resistance to disease.

Around the same time, school months in the year and hours in the day at school, were extended in order to provide for play and athletic needs, as well as the academic (Curtis 1922). A bulletin from the *Department of Interior Bureau of Education* by Perry (1915) was even circulated on the policy on how to keep records of the use of school buildings by the community. United States Commissioner of Education, Dr. P.P. Claxton, called together physical trainers at the National Education Association meeting, leading to the organization of the National Physical Education Service, and as a result, by 1916, 28 states passed laws putting organized activities into public schools (Curtis 1922). As high school sports became popularized, administrators began to feel that the college and universities guiding them had made the focus of the activities too commercial (Pruter 2013). As a result, state foundations formed, and eventually united into a national organization, the National Federation of State High School Athletic Associations, in 1920 (Pruter 2013).

Declaration of World War I led to further popularization of the extracurricular option of sport in U.S. culture. The United States Army and Navy began enlisting sports figures, mainly from colleges, such as Joseph Raycroft, to train military personnel for battle using sport as an element of training (Lucas and Smith 1978). Sports used in the training included wrestling, baseball, football, volleyball, basketball, and boxing, for hand-to-hand combat in the trenches (Lucas and Smith 1978). Involvement in World War I exposed that about one-third of the United States young men from age 21 to 31 were unfit for military service and the War Department believed that at least half of this would have been prevented if the youth had proper physical training as children (Curtis 1922).

After World War I, as the result of concerns over health, development, and growing Community Chests, a culture was financed that valued leisure and recreation, and produced an environment in which various after-school options allowed children to flourish (Curtis 1915; Curtis 1922; Halpern 2000). The 1920s are considered the golden age of the extracurricular activity, sport, and resulted in sport greats such as Babe Ruth and Jack Dempsey (Pruter 2013). Growth in popularity existed at all levels of competition, including within schools (Pruter 2013).

However, sport and after-school options for parents declined during the Great Depression (Halpern 2002). For instance, while many colleges maintained their football programs, the reduction in income from the football games, by as much as 30 to 40 percent at Big Ten Colleges, led to the abandoning of, so-called, minor sports (Lucas and Smith 1978). With reduced investments in programs and mass unemployment, children's structured activities emphasizing play and enrichment were deemed an unessential luxury (Halpern 2002). Still, parents did gain some new options of recreational activities when the New Deal sparked a series of government programs such as the Civilian Conservation Corps, the National Youth

Administration, the Public Works Administration, and Works Progress Administration that worked on projects that included building and improving parks (Lucas and Smith 1978).

Interest in structured after-school activities increased even more during World War II as sports, again, were seen as a way of training for war. Moreover, parents were again given more selection options when it came to extracurricular activities (Mandell 1984). As an example, sports options for parents now included rifle marksmanship, fencing, and polo for their children (Pruter 2013).

As many men went overseas to fight in the war, women entered the workforce in the United States in support of the war effort, leaving a need for after-school options for children's free time (Fredricksen 1943). Mothers working long hours, enduring the absence of their husbands, and the general stress of war, they enrolled their children in after-school programs (Fredrickson 1943). During this period, child development experts with wide ranging opinions sought to advise after-school programs' efforts to address children's wartime stress. Ideas ranged from simply comforting them to letting them express their hostility related to the war through games (Halpern 2002). Irrespective of the particular approach, in the 1940s childhood experts began to play a larger role in the design and implementation of children's structured after-school activities. This marked yet another evolution in whose voice determined how after-school activities would run (i.e., now from individuals deemed experts when it came to children).

Since the 1950s parents' interest in after-school programs for their children has steadily expanded with the growth of the middle classes, suburban lifestyles, and female labor force (Halpern 2002). Introduction of television drastically heightened the popularity of the extracurricular activity of sports during the 1950s and 60s by providing a closer look into the games and commanding more refined training (Mandell 1984). Programs that traditionally

catered to boys and girls separately began to integrate by gender. Some programs, like boxing, gained popularity and others, such as classes on social graces, saw declining enrollments (Halpern 2002). In the 1960s, many urban neighborhoods with changing demographics saw parallel changes in the types of after-school programs. Many boys' clubs, girls' clubs, and settlements stayed in their neighborhood locations and adjusted to the shifting demographics, while other programs followed residents to the suburbs (Halpern 2000).

In the 1970s and 1980s, interest in after-school activities increased further as more and more women entered the workforce and sought assistance with child care (Halpern 2002). Title IX allowed for more opportunities for women in sport, as public funding was set to be allocated equally through the legislation (Mandell 1984). Along the same lines, the 1973 tennis match between Billy King and Bobby Riggs, in which King (a woman) was the winner, brought attention to the high-performance women are capable of in sport (Lucas and Smith 1978).

In the mid-1990s, after-school options for parents to send their children experienced a revival with a new local focus. Regrouping in this way allowed after-school programs to retain their sponsors gained throughout history as well as acquiring new donors (Halpern 2002). In 1994, 21 Century Community Learning Centers allocated funding for extracurricular activities to assist working parents with afternoon care and develop academic, personal, and social skills for children (DynarSKI et al. 2003). Then in 2000, the Charles Stewart Mott Foundation, U.S. Department of Education, J.C. Penny Company, Inc., and the Creative Artists Agency Foundation established the After-School Alliance, to make sure affordable afterschool programs were available to all students (Franklin 2017). Table 2.1 provides a timeline of the development of after-school activities in the United States discussed thus far.

Table 2.1: Timeline of Development of After-School Activities in the U.S.

Date in History	After-school Activities Event in U.S. History					
1760-1840	The Industrial Revolution and the Rise of Children’s Free Time (1760-1840)			Early immigrants brought with them their sports from their homeland	Boarding schools participated in student run sport	
1850	Many thinkers of the day began to speak out in writing about the deterioration of the American man when equated to the Greeks of the past or the English of the present.					
1851	YMCA formed					
1857	Tom Brown’s <i>School Days</i> led to the popularity of muscular Christianity approach to school					
1861-1865	Civil War assisted in the spread of Industrialization and development of railroad spanning the nation			Civil War changed the American principals from individualist to a community emphasis.		
1876	Edward Harriman opened a boys’ club Tompkins Square in Manhattan store front with 7 members(1876)					
1880	Massachusetts Emergency and Hygiene Association establish 3 “sand gardens” (1886)		Settlements appeared and started doing boys and girls club work (mid-1880s)		Telegraph revolutionizes sport allowing for immediate updates	
1887	In 1887 the Board of Education in New York permitted the use of classrooms for boys’ clubs, the first city to do so.					
1898	Dickinson Square playground in Philadelphia opened marking transition from “sand garden” to “play movement” (1898)					
1899	Superintendent of Boston directed twenty-one “sand gardens” located in schoolyards (1899)					
1900	Tompkins Square Boys’ Club has 400 regular members (1900)	Settlements are able to build gymnasiums	Churches, other religiously based groups, and organizations serving specific ethnic groups were providing after-school programs (1900)	Colleges begin to administer public school sports instead of it being student run	Sports began to be seen as a form of patriotism and made popular by President Theodore Roosevelt	Play movement began to grow

(table cont'd.)

Date in History	After-school Activities Event in U.S. History		
1907	Founding of the Nationwide Playground Association of America		
1910	Playground Commission created by Philadelphia Mayor and allots government funds to run their activities (1910)	The concept of the “mass club” emerged (1910)	Public Schools began offering recreation centers (1900-1910)
1911	Pennsylvania State Legislature authorized cities to establish departments of recreation (1911)		
1916	At this point 28 states had passed laws placing organized games and athletics into programs of public schools		
1917-1918	End of World War I fueled new emphasis on leisure and recreation expanding after-school programs (1918)	World War I showed that about one-third of young men 21 to 31 were unfit for military service and the War Department says this could have been overcome with physical training in their youth	
1920	Founding of the National Federation of State High School Athletic Association	Beginning of the golden age of sport	
1929	Great Depression leads to cuts for afterschool activities (1929)		
1933	The New Deal invests in recreation		
1939	World War II leads to expansion of after-school activities to take care of children of women working because of the war effort (1939)	Sports activities used as a way to train military	
1945	Post-World War II it is noted that boxing came into popularity and interest in classes like social graces waned (1945)		
1960s	Changes in the urban neighborhood setting with changing demographics, less supportive, and introduction of drug-related violence. After-school programs fight for scraps of funding 1960s		
1972	Growth in maternal employment renewed interest in after-school programs with modest funding coming from Title XX of the Social Security Act and later from Social Services and Dependent Care Block Grants (1970s and 1980s)	Title Nine requires equal division of government funding for sports by gender	
1990s	Afterschool field experiences a resurgence (mid 1990s)	Century Community Centers established (1994)	
2000	After-school Alliance founded		

Combining funding sources allowed after-school programs to have wide range of goals and activities. One such focus, is the use of art as an outlet to “keep kids off the street,” with local artists teaching students dance, drumming, theater, clay-making, mask-making, stilt-walking, and puppetry as a way for students to express themselves positively. Other programs concentrate on a subgroup of students, such as those seeking to interest girls in sports. Additional programs provide instruction on topics such as photography, sewing, cooking, sign language, and casual social clubs (Halpern 2002). As can be seen, after-school programs encompass a wide range of activities. As my focus is specifically on martial arts, in the next section I describe the origins and expansion of martial arts as a popular, structured after-school activity in the United States.

History of Martial Arts in the United States

Chinese immigrants first practiced and brought the culture of martial arts to the United States. Drawn by the California Gold Rush, many Chinese people moved to the western United States in the 1840s and 50s and established a few thriving communities that maintained many aspects of Chinese culture including the practice of martial arts (Ko and Yang 2008). San Francisco’s Chinatown, in particular, became influential in the early practice and dissemination of martial arts within the Chinese immigrant community in the United States (Russo 2016).

Japanese immigrants probably played a larger role in expanding martial arts culture beyond the immigrant communities. Japanese immigrants primarily came to farm in Hawaii and California, however, they also maintained and disseminated some of their traditional martial art forms, such as jujutsu and judo (Ko and Yang 2008). Chinese immigrants generally kept their martial arts traditions within their community. For example, Bruce Lee, while living in China was not allowed to train among the other students in his youth because of his mixed ethnic

heritage. He was allowed, however, to receive individual instruction, to the criticism of others, at a martial arts studio in Hong Kong. Exclusion of this fashion, of outsiders from the Chinese forms of martial arts, would continue even as those with the knowledge immigrated to the United States (Russo 2016). However, Christian missionaries that visited China during the late 1800s returned with their own abridged version of Chinese martial arts, such as Taiji Quan, dismissing the elements of the partnering spirituality, Daoism, that conflicted with their faith (LaRochelle 2014). Meanwhile, the Japanese government in the late 19th Century used martial arts for diplomacy as a prime cultural export (Looser 2010) and sought to introduce martial arts to westerners.

After president Ulysses S. Grant visited Japan and watched judo demonstrations (Ko and Yang 2008), influential judo instructors such as Kano Jigoro and his student Yoshiaki Yamashita, came to the United States specifically to promote Japanese martial arts culture (Ko and Yang 2008; Looser 2010). Later, president Theodore Roosevelt studied and practiced judo and promoted its benefits, such as helping to lose weight. At this time, however, judo was mainly only practiced in unique private classes of the elite (Looser 2010). The influential Japanese experts in judo and jujutsu traveled widely across the United States doing various demonstrations in music halls, on vaudeville circuits, and in community centers where they invited challenges from wrestlers and fighters who were much greater than them in size (Looser 2010).

Japanese martial arts ultimately became so popular and revered that, in 1917, the U.S. Army began teaching modified versions of judo and jujutsu in their training camps, further expanding the philosophy of martial arts (Green and Svinth 2010). As previously mentioned, sport became a form of military training at this time and martial arts was a part of that training alongside rifle marksmanship, fencing, and polo (Green and Svinth 2010; Pruter 2013). Military

instruction in judo led to the expansion of martial arts instruction beyond the elite classes in the United States. U.S. military involvement in 20th Century wars further expanded interest and instruction in various martial arts forms. During World War II, for example, U.S. troops were deployed to Japan, Korea, Okinawa, and China, where they were exposed to many martial arts forms. Some veterans brought the instructions they learned during the war back to the United States (Ko and Yang 2008).

US military instruction in martial arts continued to evolve during the Korean and Vietnam wars, as additional training was instituted in Judo, Karate, Taekwondo, Tomiki and Hopkido (Green and Svinth 2010). Taekwondo, a Korean martial art form, became increasingly popular during the Korean and Vietnam wars. South Korean allies of the United States sent expert Taekwondo instructors to teach both U.S. military forces engaged in the Vietnam War and civilians in Taekwondo. In the 1970s, both Korean Taekwondo instructors and US military veterans trained in the martial art, returned to the United States, and contributed to the rapid expansion of Taekwondo instruction for children and adults (Ko and Yang 2008). These Korean Taekwondo instructors and US military veterans assisted in the transformation of martial arts from a practice of the elite and military, to an option of an activity for all adults and children in the United States.

In addition to its role in military training, media surrounding martial arts also contributed to the popularity of martial arts and its principals over time. As Yoshiaka and Fude's demonstrations in music halls and vaudeville circuits contributed to the early popularity of judo in the 19th Century within the United States, movies and television depictions also contributed to its expansion during the latter half of the 20th Century. The 1930s film, *The Hatchet Man*, portrayed Chinese Tong Wars in San Francisco (Krug 2001). In 1959, Elvis Presley began

practicing Karate creating a surge of popularity for that specific form of martial arts (Green and Svinth 2010). James Bond's *You Only Live Twice* and other spy movies depicted Asian cultures and incorporated martial arts maneuvers in the 1960s (Krug 2001). In the 1960s Chinese, European, and North American Taiji Quan instructors popularized the art form through their training manuals and popular books of essays on the art form (LaRochelle 2014). Bruce Lee helped popularize Kung Fu with his television show *The Green Hornet* and multiple movies (Green and Svinth 2010) and his untimely death only increased his status as a cult hero (Shu 2003). The early 1970s television show *Kung Fu* highlighted both Shaolin teachings and martial arts. Chuck Norris, with his many movies and television shows expanded interest in judo and tangsudo (Green and Svinth 2010). The two "Karate Kid" movies of the 1980s also helped enrollment in marital arts classes (Berreby 1988).

Jackie Chan's comedic approach to martial arts cinema achieved global popularity and further led to increased interest in the art form as he both humanized the style through comedy and made it accessible to American parents as a viable form of instruction for their children. Prior to Jackie Chan's portrayal of the art form, martial arts were viewed as something dangerous and serious. His reinvention of martial arts cinema to have a comedic and exciting acrobatic twist provided a family friendly interest in martial arts training that would assist in obtaining parents' approval for their children to participate (Shu 2003). In the first decades of the 21st Century, martial arts has been frequently incorporated into a wider variety of different genres of movies and television shows including science fiction (*The Matrix*), vampire (*Blade II*), superhero (*Daredevil*), video games (*Laura Croft: Tomb Raider*) girls' empowerment (*Charlie's Angels*), children's films (*Shrek*), and teen comedies (*Scary Movie*) (Klein 2004).

In sum, Asian immigrants brought martial arts to the United States and, over time, interest expanded due to military use and media coverage. Martial arts grew from an activity offered to the elite of the United States to more accessible option available to different social classes. In the next section, I explore how organizations emerged and expanded to support the global expansion of martial arts instruction.

Global Martial Arts Organizations

One art form at a time, the various martial arts blended slowly into U.S. culture. What could have been a temporary fad throughout history became lasting through opportunities for ongoing international competitions and establishments of organizational hierarchies. For instance, judo was incorporated into the Olympics in 1964 and Taekwondo was added in 2000 (Ko and Yang 2008). In 1973, the World Taekwondo Federation was formed creating a hierarchy that would monitor and motivate the expansion of the art form globally, as well as in the United States (Ko and Yang 2008). Table 2.2, provides a timeline of the development of martial art in the United States discussed thus far.

Today, many forms of martial arts are practiced in numerous countries around the world. International organizations have emerged to ensure that martial arts instructors adhere to global expectations and their organizations reflect the global popularity of martial arts. For example, the International Judo Federation reports having members from 204 nations and the World Taekwondo Association's most recent report listed 209 global member nations and one additional membership for refugees (International Judo Federation 2018; World Taekwondo 2018).

Table 2.2: Timeline of Development of Martial Arts in the U.S.

Date in History	Martial Arts Event in U.S. History		
1848	California Gold Rush Brings Wave of Asian Immigrants (1848)		
1879	Pres Grant visited and observed Kano’s Jigoro judo demonstration		
1880	Japanese immigrants to farmland in Hawaii and California and practiced their traditional martial arts (Late 1880)		
1889	Kano went to Europe and US promoting judo		
1903	Yoshiaki Yamashita was the first Japanese judo instructor to teach in the US (1903)	Yoshiaka and Fude Yamashita came to the US and made a name for themselves in the United States by accepting challenges against much larger wrestlers in music halls (or the vaudeville circuit)	From early on jujutru and judo we taught to adults and children of both sexes in US
1917-1918	U.S. Army camps taught modified judo and jujutsu (1917-1918)		
1930s	<i>The Hatchet Man</i> (1932) one of the early depictions of martial arts in cinema in the 1930s		
1939	American troops occupy Japan, Korea, Okinawa and some part of China and many GI’s had the chance to learn Asian martial arts and to bring those arts back home. (Ko and Yang 2008 pg 10)		
1946	Robert Trias opened the first-known karate dojo in the United States (1946)		
1948	Desegregation of U.S. Military widely practices many martial arts (1948)		
1960s	Elvis Does Karate Popularizing the Art form (1935-1977)		
1964	Judo becomes the first martial art to become an Olympic Sport at the Tokyo, Japan games. (Ko and Yang 2008 pg 11)	Spy movies depicted some martial arts techniques. An example <i>You Only Live Twice</i> (1964)	
1965	America enters Vietnam War and becomes allies with South Korea during which Korean taekwondo practitioners were sent to teach particular US military forces and civilians the art form. (Ko and Yang 2008 pg 11)		
1966	Bruce Lee Popularizes type of Kung Fu with relsease of <i>The Green Hornet</i> (1966)		
1972	“Kung Fu” TV show popularizes Shaolin boxing (1972)	Chuck Norris popularized judo and tangsudo (1972)	

(table cont'd.)

Date in History	Martial Arts Event in U.S. History		
1973	World Taekwondo federation formed		
1990s	Hollywood globalized and Asianized (1990s)	<i>Bubishi</i> “the Bible of Karate” translated into English (1990s)	Jackie Chan depict martial art movies in a light-hearted way through comedies like <i>Rumble in the Bronx</i> (1995)
1990-2000	Martial Arts Incorporated into Wide range of media (1990-2000)		
2000	Taekwondo incorporated into the Olympics (Ko and Yang 2008)		

Prevalence of Martial Art in the United States

In the United States, about 18.1 million people participate in martial arts. Among that group there are 9.4 million adults, 5.5 million teenagers, and 3.2 million children (Maine Martial Arts 2018; USA Dojo 2018). According to Simmons Market Research, trends in adult participation in martial arts have remained reasonably stable from 2006 to 2016, at about 4%. However, there were some small increases in participation to about 5% in 2012 and 2014.

Marketing Martial Arts as an Afterschool Activity to Parents and Children

To develop such participation rates and broader interest, the martial arts have been marketed to parents, by different training facilities, to have a wide range of benefits. Such advantages from training that martial art academies identified appear to address many potential physical, social, psychological, and academic benefits (Jao Martial Arts Academy 2018; Northshore Academy Martial Arts 2018; NY Martial Arts Academy 2018). More specifically, physical returns that martial arts facilities market include learning the ability to defend one’s self and exercise to reduce obesity (Jao Martial Arts Academy 2018; Northshore Academy Martial Arts 2018; NY Martial Arts Academy 2018). Socially, martial arts studios boast that from participating in martial arts children are taught skills, such as discipline, how to work in a group,

and how to positively interact with peers (Jao Martial Arts Academy 2018; Northshore Academy Martial Arts 2018; NY Martial Arts Academy 2018). Martial arts businesses also identify boosts in confidence and increases in self-esteem as resulting from participation in martial arts (Jao Martial Arts Academy 2018; Northshore Academy Martial Arts 2018; NY Martial Arts Academy 2018). Lastly, many martial arts facilities mention increased ability to focus resulting from the training and the subsequent influence it has on participants academic performance (Jao Martial Arts Academy 2018; Northshore Academy Martial Arts 2018; NY Martial Arts Academy 2018).

Conclusion

This chapter provided insights into the development of extracurricular activities more generally and martial arts more specifically. Changes in lifestyle, migration, war, and media influenced the development of both phenomena. While many factors influenced the expansion of martial art in the United States; I identify three major stages in history that influenced the dissemination of martial arts and the development of the art form as an extracurricular activity for children. Training of elites in judo, encouraged by Theodore Roosevelt and others introduced, and reinvented, the training as a popular option of leisure activity for the first time among the general population (Looser 2010). Amid those elites trained were military officers who were encouraged to train in martial arts abroad at war. Those trained returned home opening studios that expanded the opportunity for training beyond just the elite, training adults and children (Ko and Yang 2008). Lastly, the media's softening of the art form with the embracing of various portrayals of the art form in action via movies solidified, and reassured, parents that martial arts was not only to be understood as a weapon. In particular, demonstrations of the art form in a light-hearted or mentoring way made parents view martial arts as a viable option of an after-school activity for their child.

Now martial arts have sustained itself as one of many options of after-school activities offered to families and continues to market itself as providing many benefits to those who practice the art form. I discuss in chapter 3 how families of martial arts participants perceive the training's relationship to education. After that, Chapter 4, will evaluates one of the benefits that many training facilities offer as an incentive for sustained participation: improved educational outcomes. Lastly, Chapter 5 will provide an overview of the relevant findings in each chapter and indicate directions for future research.

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Chapter 3. Perspectives of Martial Arts' Impact on Education

Introduction

In Chapter 3, I employ a qualitative approach to explore parental perceptions of the connection between student martial arts participation and children's educational outcomes. I achieved this by conducting interviews with martial arts students and their families within the framework of cultural capital. Cultural capital are those life experiences that are not taught in traditional education but are rewarded in schooling (Bourdieu 1979). By navigating the issue of perception of martial arts impact on education through the lens of cultural capital, I am able to not only understand if participants and their families believe there is a relationship present, but also comprehend which aspects of martial arts parents believe are most beneficial. In short, I explored parents' views about martial arts' unique cultural capital.

Literature Review

In the literature review I will begin by providing a background on the theory guiding this analysis, cultural capital. Afterward, I will discuss some of the past studies surrounding cultural capital and how the concept has evolved overtime. Then I will provide some information about research conducted on martial arts and lead into a discussion of analysis involving education.

Theoretical Framework: Cultural Capital

Cultural capital was introduced by Bourdieu (1979) as a life experience that influences chances of success in traditional education systems. His theory stated that those who had been raised with a knowledge of high culture, for example appreciation of classical music, were rewarded in schooling. Bourdieu proposed that this praise of students for cultural capital, which students were not educated about in school, led to social reproduction. His idea of social reproduction explained that this system of unequal rewarding for information not taught in

traditional education would lead to higher class parents raising their children to be members of the higher class, while those underclass parents would not be able to improve their children's circumstances, producing a new generation of the underclass (Bourdieu 1979).

Bourdieu (1997) explained in more detail the three different ways that cultural capital can manifest. First, habitus is a form of cultural capital that describes the ways a person views them self, conducts their self, and feels comfortable in different situations. An example of habitus would be a student's perception of if they will attend college. Second, objectified capital is defined by the belongings owned by an individual. Third, Bourdieu identified institutionalized capital as the exchange of cultural capital in schooling to receive privilege.

The cultural capital theory intrigued researchers and analyses began to test and further develop the idea (DiMaggio 1982; DiMaggio and Mohr 1985; Kalmijim and Kraaykamp 1996; Roscigno and Ainsworth-Darnell 1999; Dumais 2002). Early work found a correlation between cultural capital and grades in high school, but then research expanded further to identify impacts on later life academic factors as well, including college attendance and graduate education (DiMaggio 1982; DiMaggio and Mohr 1985).

Up until this point, much of the literature measured and understood cultural capital in a very specific way; the knowledge of high culture. This includes topics such as appreciation of art and opera. Soon the understanding of cultural capital would expand beyond the understanding of high culture to a wider and more general definition. One such reevaluation of cultural capital emerged through the work of Lamont and Lareau (1988:156) whom defined the concept as "widely shared, legitimate culture made up of high status cultural signals (attitudes, preferences, behaviors, and goods used in direct or indirect social cultural exclusion." Subsequently, the authors published several articles using this new understanding. However, Lareau and Weininger

(2003:569) reinterpreted the theory to an even broader explanation of, “micro-interactional processes whereby individuals’ strategic use of knowledge, skills, and competence come into contact with institutionalized standards of evaluation.” Cultural capital being reinterpreted this way expanded the potential for analysis of the concept beyond just understanding of high culture, to knowledge of any aspect of a society’s culture that was valued within institutions in which people are assessed.

In her book, *Unequal Childhoods*, Lareau (2003) used this expanded understanding when following the lives of families from various social classes. Upon analysis of her data, Lareau found two different strategies for parenting, concerted cultivation and accomplishment of natural growth. Concerted cultivation approach to parenting, utilized by higher income parents, involved children’s gifts being cultivated by their parents through elaborate scheduling of extracurricular activities and encouragement of reasoning skills. Lower income parents, she observed, practiced the accomplishment of natural growth technique to childrearing. In the accomplishment of natural growth, parents developed atmospheres for the children to grow but the youth would determine what to do with their spare time. Concerted cultivation raised children, Lareau (2003) found, were better able to engage with those in positions of authority and circumnavigate through elite institutions better than those raised using the accomplishment of natural growth. Lareau stated that this phenomenon existed because those children raised with the concerted cultivation approach were encouraged to ask questions of, and were comfortable engaging with, those in authority positions in extracurricular activities and everyday life.

Interpreting the theory of cultural capital using this wider definition led to extracurricular activities being used as a measure of cultural capital and how it related to different aspects of academic achievement (Hunt 2005; Covay and Carbonaro 2010). Although findings regarding

the phenomena were mixed, a majority of the researchers discovered that after-school activities were beneficial in regard to various measures of perception of academic ability, actual academic outcomes, and positive non-cognitive skills (Hunt 2005; Covay and Carbonaro 2010). Interest in these results led many researchers to analyze the relationship between cultural capital and education, further inquiring the role of race, gender, and social class (Kalmijin and Kraaykamp 1996; Rocigno and Ainsworth-Darnell 1999).

Kalmijin and Kraaykamp's (1996) analysis indicated that Black students' cultural capital knowledge was acquired quicker than White students, even when accounting for Black/White differences. Furthermore, students' cultural capital was found to have a relationship to schooling level achieved. The authors also stated racial differences in level of cultural capital acquired could have contributed to the convergence of the Black/White achievement gap and acted as a tool for upward mobility for less privileged minority groups. Roscigno and Ainsworth-Darnell (1999) interestingly found quite the opposite in their analysis. In their examination, they discovered that variation in social class among Black and White students was in line with racial differences in cultural capital, and there was only a small mediating correlation to the Black/White achievement gap. Overall, this work indicated that Black and lower-class students collect less "educational return" for time invested in cultural capital.

Dumais' (2002) research delved into the variation in benefits from cultural capital based off of gender and found that young girls received more "returns", such as grade achievement, for involvement in cultural capital than young boys. Other authors research of social class and the academic benefits from cultural capital indicate how much the concept as evolved from the original understanding of the theory. Moreover, many researchers found that there is an interesting twist in the relationship: finding that cultural capital, and especially certain types of

activities, benefit lower class students more than upper class students (Eccles et al. 2003; Guest and Schneider 2003; Dumais 2006; Covay and Carbonaro 2010). Collectively, it appears research indicating that extracurricular activities are a beneficial form of cultural capital, and that different types of afterschool programs impact children's academic outcomes in various ways, provides motivation to inquire further into the dialogue surrounding a specific activity, martial arts, and academic outcomes.

Martial Arts Participation and Education Performance Dialogue

Before discussing the research on martial arts and academic outcomes, it is important to understand the abundance of other martial arts studies and why they may intrigue parents to think there is a relationship between the activity and education. Much of the research conducted regarding martial arts relates to various psychological characteristics such as reduced aggression, self-esteem, and other positive personality traits. More specifically, several scholars found that traditional martial arts use of breathing techniques balance out the impact of external training assisting in lowering aggression (Nosanchuk 1981; Hernandez and Anderson 2015; Hardwood et al. 2017). Furthermore, traditional martial arts have repeatedly demonstrated the ability to help increase the positive characteristic of self-esteem (Fuller 1988; Weiser et al. 1995; Vertonghen and Theeboom 2010).

Benefits of martial arts, such as those mentioned, have led to the activity being used as a type of therapy and research on this technique has indicated that the physical nature, group interaction, and emphasis on flexibility involved in the training boosted the self-esteem of practitioners (Fuller 1988; Weiser et al. 1995). Other positive personality traits researchers reported involved the use of traditional martial arts as a therapy because it cultivated increases in concentration, assertiveness, directness in communication, ability to face adversity, control of

one's mood, and relaxation (Fuller 1988; Weiser et al. 1995). Decreased aggression, high self-esteem, and the other positive personality traits mentioned, all would prove useful to avoid discipline issues that can impact schooling in the traditional education system. However, research has also indicated martial arts use as a tool to assist those already labeled delinquent. For instance, scholars have found that traditional approaches to martial arts decrease delinquent behavior and lower negative psychological risk factors (Trulson 1986; Zivin et al. 2001).

In the previous paragraphs, I discussed martial arts' ability to reduce aggression, increase self-esteem, bolster other positive characteristics, and even effectively rehabilitate delinquent children. Having considered the literature, martial arts has shown it has the potential to be valuable in the context of school. Positive personality traits boosted in martial arts would assist with interactions with school personnel, help avoid deviant labels that often damage student's academic performance, and possibly even assist those already labeled. Researches have indicated the potential of martial arts to embody and translate cultural capital, in all three of the different forms (i.e., habitus, objectified, and institutionalized). Parents' objectified capital, which is their money for martial arts lessons, could possibly build their children's habitus, consisting of positive ways of viewing and conducting themselves. Further, such activity could result in the reception of institutional capital, the trading of cultural capital for privilege in the education system. Martial arts as a type of cultural capital is not a new idea. Spencer's (2009) study of mixed martial arts identified different ways a fighters' habitus developed through the training of adults. My current analysis seeks to see if martial arts families identify other ways martial arts develops a habitus for children that may be rewarded in the education system.

Previous investigations indicated that martial arts had a relationship to executive functions, cognitive ability, and performance on mental math tests (Lantz 2002; Lakes and Hoyt

2004; Lakes et al. 2013; Alesi et al. 2014; Lima et al. 2017; Cho et al. 2017). Lantz's (2002) analysis of interviews of martial arts families, found that parents of children participating in the activity believed their children's grades improved as a result of their involvement. However, Lantz (2002) focused on a wide range of topics related to marital arts and did not seek to understand why parents believed there was a relationship, as does the current study. Lakes and Hoyt's (2004) similarly discovered that martial arts physical education classes bolstered performance on mental math tests. Understanding cultural capital, martial arts research, and the possible convergence of the two, inspired my interest in studying what parents have to say about the relationship between martial arts and education, and furthermore, an interest in what they believe it is about marital arts that brings about the perceived relationship.

Methods

To understand how parents perceive the relationship between martial arts and education and identify what mechanisms they see at work in the relationship I developed a qualitative study and conducted in-depth interviews with parents, participating children, and martial arts instructors. My study is limited to two locations in a southern state. Following approval from the Louisiana State University Institutional Review Board in spring 2017, I conducted my studio observations and interviews over the course of the next year finishing in summer 2018.

I spent several months observing the activities and slowly getting to know the instructors, participants, and parents before conducting my first interviews. This approach allowed me to get a strong feel for the instruction methods and the habits of parents and participants. In total, I conducted 30 semi-structured interviews with students of martial arts, their parents, and their instructors. The diversity in perspectives provided the opportunity to gain information between the different views and experiences offered by those of different status in the interviews. For

instance, parents more often elaborated on the experiences of their children than the children themselves did. Martial arts trainers were interviewed, however instructors felt they could not speak to their students' experiences outside of the training area. Considering the instructors' acknowledgement that they were not the best to report on experiences outside of the training area; I only utilized the remaining 27 interviews for this chapter.

. Semi-structured interviews have a loose structure of open-ended questions that suggest a topic to be explored (Britten 1995). Also, semi-structured interviews allowed me to understand what parents thought about the relationship between martial arts and education by allowing for more questions to be asked directly related to martial arts, in a more fluid way, than what is currently offered in large data sets, and allows for the collection of, at times, unexpected new data in open responses. I employed open-ended questions that enabled participants to respond in their own words, allowing me the ability to ask for clarification and minimizing the risk that I might lead the respondent to a specific answer. My approach also gave me the opportunity to discover and explore in detail any new information (e.g., not found in previous research) that arose during the interviews.

I attempted to conduct individual interviews but conducted a few interviews with multiple family members at the same time. As Starkweather (2012) indicated in research on migrant families, group interviews may result in different modes of family story telling: collaborative, where family members contribute parts of the larger story; taking precedence, where one family member dominates the discussion; and giving precedence, where a family member encourages another person in the family to speak. I utilized strategies mentioned by Starkweather (2012) including directing the questions to the person speaking less and conducting the interviews within the training area to lessen the impact of such occurrences.

During each interview, I covered a range of topics, typically beginning with the student-participant's background in martial arts. Subsequently, I ensured that I discussed with each participant the circumstances that inspired the martial arts students and their parents to initially enroll, as well as what they most enjoyed about martial arts. In addition to this important background information, I also covered some general questions related to respondents' thoughts about whether the martial arts participation had changed the students in any noticeable ways. If respondents thought martial arts had changed the participant in some way, I followed up with some specifics about their perceptions of which aspects of martial arts brought about that change. Once respondents were finished addressing the more general question; more specific questions were asked. An example of the more detailed questions includes one of the main questions of interest in my research, "Since starting martial arts have you noticed any changes in [NAME'S]/ your grades? If the respondent indicated there was a change they were asked the follow up question, "What about martial arts do you think has made those changes happen?" With this approach participants may bring up education naturally in the beginning, but allowed for everyone to be asked specifically about the topic in the follow-up questions. A full listing of the interview guides for parents and children can be found in Appendix B and C.

Location

An important aspect of the site selection was determining what would be considered a martial arts class for inclusion in this study. Much of the literature made a differentiation between traditional versus mixed martial arts (such as UFC). Literature regarding the differences has shown that traditional martial arts training has resulted in positive outcomes and for this reason sites were selected that taught traditional martial arts (Nosanchuk 1981; Trulson 1986; Fuller 1988; King et al. 1997; Theeboom et al. 2009; Allen 2013; Hernandez and Anderson

2015). Two traditional martial arts training facilities were selected for inclusion in this study, both taught by the same school, Martial Arts Academy, in a suburban southern city. I changed the name of the location and participants in order to preserve their confidentiality. The first location is a business that charges full price for classes and the other is a local neighborhood gym, where the school offers classes to the community at a reduced price. According to the 2010 Census, the city where both training areas are located has a median income of about \$47,000 and the average number of people per household is 2.64. Racial breakdown of the city consists of 48% Non-Hispanic White, 24% Black, less than 1% American Indian and Alaskan Native, 3% Asian, 2% two or more races, and 22% Latinx.

Sample Information

In order to gain entry to the martial arts training facility, I utilized a personal connection. I knew someone with a student attending the Martial Arts Academy and that person then introduced me to the main instructor at the school. I then explained my research and asked if I could use their schools as sites to conduct the study. Upon gaining entry, I observed the classes for several weeks in an effort to become a familiar face first and to become immersed in the environment. I did not participate in the classes, but I was able to spend considerable time within the training areas. My approach mirrored Woodward (2008) who conducted her study of positionality in a boxing gym. After the course of a few months, I asked the instructor to make announcements at the classes about my research. This approach worked well at the main location of Martial Arts Academy, where parents often went inside before, during, and after the training. When it came time to conduct interviews at the other site, this approach was not viable because, there, parents typically waited for their children in their cars outside the gymnasium. There, the

main instructor emailed an invitation to parents to participate in my study, giving them my contact information.

My sample began with 30 respondents consisting of 13 parents, 14 martial arts students, and three instructors. As I mentioned previously, instructors did not believe they could speak to the experiences of their students outside the training area and therefore they are not included in the current analysis. The remaining 27 interviews were compiled from 11 different families. Information was gathered pertaining to demographic background of research participants using a survey that asked questions addressing racial identification, gender, age, and more. Data was received on 19 of the 27 interviewed, however demographic information is missing for eight respondents, as many of the interactions were rushed due to students having other obligations. As can be seen in Table 3.1, the racial breakdown of respondents consisted of 14 White, two black, and three Latinx respondents. Participation by gender was balanced overall, with ten females and nine males interviewed. Most of the female respondents were parents and most of the male respondents were students of martial arts. Ages of those interviewed ranged from six to 51. Annual household income included those who made less than \$24,999 to up to \$100,000 or more. Education levels of parents ranged from high school or GED to bachelor's degree. Eight out of the nine parents were married. Six of the nine parents had two children and the remaining three parents had one, three, and four children.

Data Compilation and Analysis

I conducted a thematic analysis or an approach for identifying, analyzing, and reporting patterns within data in order to make sense of the information (Braun and Clark 2006). I followed the version of thematic analysis as organized in the work of Braun and Clark (2006) who synthesized the work of many who use different versions of thematic analysis into one

Table 3.1: Demographic Information Martial Arts Participants and their Families*

	Adults (9)	Children (10)	Total (19)
Race			
White	6	8	14
Black	1	1	2
Latinx	2	1	3
Gender			
Female	8	2	10
Male	1	8	9
Age			
1-9		8 (6-)	8
10-19		2 (-11)	2
20-29			
30-39	5 (35-)		5
40-49	2		2
50-59	2 (-51)		2
Annual Household Income**			
\$24,999 or less	1		1
\$25,000 - \$49,999	1		1
\$50,000-\$74,999	2		2
\$75,000-\$99,999	1		1
\$100,000 or more	3		3
Highest level of Education			
Less than high school			
High school or GED	1		1
Some college	1		1
Associate degree			
Bachelor's degree	7		7
Master's degree			
Professional degree			
Doctorate			
Marital Status			
Single	1		1
Married	8		8
Separated			
Divorced			
Number of Children			
1	1		1
2	6		6
3	1		1
4	1		1

*Demographic data is missing about 8 respondents **One case left this question blank

document. I began the process by immersing myself in the data, as the only person in the field, I remained deeply familiar with the information collected (Braun and Clark 2006). While conducting the interviews, a recording device was used to capture both the interviewer and interviewee (Theeboom et al. 2009). As soon as possible afterwards, the interviews were transcribed in Microsoft Word (Braun and Clark 2006). After familiarizing myself with the information I generated initial codes, based off those codes generated themes, refined the themes, and named them (Braun and Clark 2006). Once themes were branded, I compiled the statements of parents and martial arts students related to the theme and found three different understandings of how parents and martial arts students thought the activity related to education, creating a report (Braun and Clark 2006).

Findings

Work on cultural capital over the decades led to a wide ranging and open definition of the term, including any part of a society's culture that is valued within institutions where people are evaluated (Lareau and Weininger 2003). Defining cultural capital in this way sparked an entire lineage of literature about the relationship(s) between extracurricular activities and educational outcomes. Understanding the connection between afterschool programs and outcomes in schooling gained popularity through the work of Lareau in her book *Unequal Childhoods*. In Lareau's book she identified different social class groupings of parents' approach to childrearing in which upper class parents use of extracurricular activities awarded them an advantage in school. Lareau's results sparked an interest in afterschool programs that yielded conflicting results from various researchers (Hunt 2005; Dumais 2009). Regardless of the mixed findings, many researchers were so intrigued by the relationship that they explored further detail into the phenomena, analyzing the impact of extracurricular activities on different groups by race,

gender, and even a reversed take on the role of social class (Kalmijin and Kraaykamp 1996; Dumais 2002; Dumais 2006). Interviews with families of martial arts practitioners in this chapter, however, can explore how families describe the association between martial arts and education and as a result guide future parents to find out what aspects of the sport will help each child with their own individual needs.

Family members identified a wide range of responses when asked about the linkages between martial arts and their children's education. As can be seen in Table 3.2, out of the eleven families interviewed, only one family argued it was hard to gage the impact of martial arts on schooling outcomes, since their children were not yet receiving grades in school to document how participation might have been impacting their achievement level in school. Two additional families said they did not see a change in their children's grades since they started martial arts because their children were already good students. Another two families simply said they did not see a difference in their student's grades since beginning marital arts classes. Notably, a majority of families, (6 out of 11), felt strongly that martial arts had a positive influence on their children's schooling.

Table 3.2: Parents general response about the relationship of martial arts to their children's grades

	Saw a difference	Did not see a difference	Hard to tell because not yet receiving grades	Students grade were already good when beginning
Number of Families	6 (55%)	2 (18%)	1 (9%)	2 (18%)

One way in which my analysis took the avenue of research on martial arts and education further was by having martial art families describe what they thought it was about the training that contributed to the perceived relationship. Approaching the subject matter in this way was

inspired by the work of Covay and Carbonaro (2010) who discussed something similar in their more general work that analyzed the relationship between extracurricular activities and academic outcomes among elementary school students. In their research, they explained that much of the positive statistical relationship found was explained by the non-cognitive skills gained in students' activities such as attentiveness, organization, flexibility, and eagerness to learn.

I found three major skills reported by martial arts family members most frequently. Parents argued martial arts enhances their children's educational outcomes by teaching them how to: (1) achieve goals, (2) take responsibility for their actions, and, for some, (3) manage cognitive developmental and behavioral disorders. These three advantages parents identified their children gaining in martial arts are processes through which martial arts participation could function as a form of, and tool for developing, cultural capital, helping their children achieve in the classroom and in the martial arts training area. Spencer (2009) produced a similar and general finding in research of mixed martial arts. Specifically, Spencer found that mixed martial artist developed a type of cultural capital, that allowed practitioners to succeed in the training, including factors such as specifications of what determined if they considered themselves a mixed martial arts fighter. In a similar way, my findings illustrate processes underlying how martial arts helps elementary school students achieve better school success. The mechanisms parents identify for how involvement in this extracurricular activity impacts school achievement suggests that it helps them develop cultural capital useful for school success. In addition, it highlights how that cultural capital can be used in other environments.

Martial Arts as a Teaching Tool for Achieving Goals

A major theme among interviews with martial arts families was that martial arts acts as a teaching tool for achieving goals. Parents and children often discussed the importance of belt

promotions and the goal of being a black belt. At the same time, they acknowledged the value of smaller required tasks to get to those larger ambitions. Students had the desire to achieve those small requirements but were only rewarded if their behavior and focus was in line enough to learn and in turn receive the smaller reward, leading to accomplishment of broader goals. Gabriella, a parent of Waylon, an 8-year-old student, proudly explained that since starting martial arts her son improved academically:

Oh yeah, Waylon, at one point in time they wanted Waylon to go into special ed. Now Waylon is a straight “A” “B” student. He’s on the honor roll and actually got a certificate at the end of the school year saying he was on the honor roll.

When prompted further to find out what, if anything, in martial arts helped Waylon’s grades improve, Gabriella pointed to the approach mentioned previously, where you learn to break down large ambitions into smaller tasks. She talked about the impact of this method saying, “And mentally it kind of put that in his head that he’s able to do, like if something seems too big to do, he’s still able to do it. You know, if he breaks it down and does little small goals.” Gabriella explained that martial arts approach teaches a lesson on breaking a large objective into smaller, accomplishable tasks and how she believed that translated to her son’s experiences of success in the academic classroom.

Another set of parents, Stella and Jack, have two children enrolled. Violet and Anthony are twins who are both 9 years old. Stella and Jack expressed a similar view to Gabriella when explaining they too thought martial arts was positively impacting their children’s experiences in the academic classroom. They talked about the intimidation that children face when attempting to reach their goals and how Anthony used to always say, “I can’t.” Stella explained his change after starting martial arts:

[He used to always say] “I can’t” and so now he’s like, “I’m having trouble and I’m gonna try harder.” And so that’s both in school and in here. And so, I think that, that the feeling of I can’t do something. I think Master Nicole or somebody has been talking to him. It’s not that you can’t. It’s just that you are struggling and you will.

In this conversation, Stella expressed how martial arts assisted her son to change mentality regarding difficult goals he needed to achieve. Stella’s sentiment is in line with Fuller’s (1988) study of a specific martial art, Aikido, in which they indicated Aikido had a positive impact on the ability to face adversity. Capacity to face difficulty learned in Aikido and in the multiple martial arts, practice allows participants, like Stella and Jack’s children, to pursue their goals even when faced with hardship. Stella felt that this ability to face adversity when confronted with difficult goals reached beyond the training area into academic settings as well.

Elizabeth, another parent of two boys taking martial arts (Joel, 11, and Evan, 6) discussed how martial arts helped her boys in school by assisting them with controlling their impulses in the classroom. She also highlighted the role of small rewards and larger objectives in that process. The following is an excerpt from a conversation in which she is explained why she believed martial arts assisted with their behavior in school:

Well Master Nicole isn’t gonna put up with somebody being out of line. She’s not mean about it, but, you know, they want their sticker. They want to be able to advance, and the way to advance is to do what you need to do, and you can’t move forward, and you’re the only person hindering you from moving forward with a belt. So, you have to control your impulses and do, learn, in order to get there. So, I think the reward that comes with if you control yourself. You can pay attention. You can learn more, and then you advance. So, I think it’s kind of the whole package is what helps them along.

Here Elizabeth discussed how she thinks martial arts helps her children control their impulses. This statement is in line with the work of Trulson (1986) who found that participating in traditional martial arts classes decreased impulsivity. She also discusses the same impact of martial arts on education using a different terminology of rewards. Her children’s behavior in

school has been positively impacted by them recognizing that their smaller actions of paying attention and controlling themselves will be rewarded and move them toward their larger goal of a belt promotion. In this case, the small task is to pay attention, earning a sticker, with the larger goal is belt promotion. Elizabeth's comment also delves into another advantage martial arts provides, teaching responsibility.

Martial Arts as a Tool for Teaching Responsibility

Within Elizabeth's message about a system of rewards, she also referenced the teaching tool of responsibility. She made the point, "They want to be able to advance, and the way to advance is to do what you need to do, and you can't move forward, and you're the only person hindering you from moving forward with a belt." Here, Elizabeth pointed out another important non-cognitive skill her children are learning: to be responsible for their actions. If they act in a way that hinders them from learning, they are the ones who suffer when it comes to belt promotions.

Claire, mother of 11-year-old, Leo, mentioned the training as a tool to teach responsibility for her child's actions as well when she said, "Overall, the kids know that if they don't do their best, they don't participate in their extra activities, which would include Tae Kwon Do. Tae Kwon Do is something that we give them. It's a reward. You earn it." In this statement, Claire discussed using martial arts as leverage for good performance in school. In this case, her children are learning responsibility for their actions because if they do not do well, or act properly in school, they will not be able to continue with their activities.

Waylon, an 8-year-old student mentioned earlier, exemplified this adoption of responsibility for your own actions in his interview. He said that he thought martial arts helped him to pay attention in school. When asked what he thought it was about the training that helped

with that, he responded, “If I pay attention then I can actually learn something.” That is a rather profound statement for an 8-year-old. He pointed to his important role: how he can exercise agency in enhancing his ability to learn if he does his part, both in a martial arts and academic environments. While Waylon’s comment was rather unique among the interviews conducted with children practicing martial arts (most did not emphasize academic benefits associated with participation), it does provide further insight into the phenomena that many parents reported. Waylon may have had the introspection to report what other children may not have been able to see within themselves and that parents saw in their kids.

Martial Arts as a Resource for Managing Cognitive Developmental and Behavioral Disorders

In addition to citing academic benefits stemming from gained grasp of responsibility and skills facing challenges, parents also viewed martial arts as a resource for managing cognitive developmental and behavioral disorders. Martial arts use as a type of therapy is documented in case studies that present positive outcomes for participants (Weiser et al. 1995; Fuller 1988). Parents did not often list their children’s disorders as the main reason for joining the training, but many mentioned the extracurricular assisting as a pleasant bonus or something they heard could help. Joel, the 11-year-old student mentioned earlier, has Attention-Deficit/Hyperactivity Disorder (ADHD), and he explained why he thinks martial arts may be helping him pay attention more in his academic classes: “[The instructors are] always correcting you to pay attention when somebody’s doing something.” Joel’s response may seem simple, but he clearly sees something as simple as repetition of being asked to pay attention in a small group setting as helpful. His mother, Elizabeth responded to the same question, explaining how she thought children being asked to concentrate for long periods of time helped them learn to focus better:

Well, they have to pay attention and focus through their entire forms. And also if they're learning new kicks, they need to pay attention to the detail in things. So, you have to focus on that. And you have to focus long periods of time and they realize they may not actually, like, recognize it, but I think their little brains recognize that. So, they're being retrained for that.

As Elizabeth sees it, paying attention to detail and holding attention for longer spans of time, as is required to complete the movements in a form, may be retraining her sons' brain to be able to pay attention in other settings.

When asked about any changes they may have noticed in his ability to pay attention, Stella and Jack, whose child Anthony also has ADHD, discussed how martial arts helped them know to adjust his medication. They reminisced excitedly about times when Anthony was placed on the right combinations of medicines: Jack said, "Do you remember that week, I think it was last week, where they gave him the right combo, and then he got a stripe?" Stella replied. "Yeah, he got a stripe!" Shortly after Stella explained the difficulty managing medications at Anthony's age, she articulated how she thought martial arts made it easier:

Concepts, forms, just like everything, and it's very hard with him, because this is supposed to be the hardest age, where you get ADD or ADHD children's medicines right, because they're growing, weight, height. And so you need to constantly adjust. So, for him, like I said, it's huge when the focus is there. It's a huge difference, but what's awesome is that, all three of them know that he has trouble focusing, so they'll tell us, like, we don't even have to ask, like, they'll tell us, like, "Ohh he was way off tonight." Like left field. But when it's there, they're like, "Oh he had a great day!"

Here Stella explains how helpful martial arts has been to them in monitoring medication at such a difficult age for children with ADHD. She explained how the feedback she receives from his instructors has assisted with managing the disorder and improved her child's attention in martial arts and in school. A third parent, Samantha, mentioned that her son, Levi, 8-years-old, has Autism. She explained throughout the interview that martial arts has helped with his behavior, but summed it up in her closing comments:

I think anything I say is gonna be repetitive, but, like, my kid really is learning skills, like, behavior skills, like how to check himself if he's being disrespectful, if he's you know? He's learning how to, um, self-regulate, is the best way to put that. He's learning how to self-regulate better. He does do applied behavioral analysis therapy. He gets that 40 hours a week. A lot of time. But I think this is a little kicker to help with learning self-regulation stuff.

Samantha explained openly that her son receives many hours of treatment, but she believes martial arts also helps to teach her child to self-regulate in interactions with others. Assistance with communication and teaching assertiveness are two benefits Weiser et al. (1995) found in the use of Karate as therapy. Communication is mentioned by both Samantha and Weiser et al. (1995). This improvement in communication norms, such as self-regulation or assertiveness, provides the avenue through which all information both informal, as in the form of relationships, and formal, as in collection of knowledge, is transmitted. They explain that these skills may begin in the training area but then can expand to all facets of life, including education.

Discussion

My research explored the dialogue surrounding martial arts and education. Findings indicated in my analysis that most martial arts families feel there is a positive relationship occurring. This is in line with the work of Lantz (2002) who found in their interviews that parents felt martial arts helped their children in school. However, my research was inspired by the work of Covay and Carbonaro (2010), who identified statistical mediating factors between extracurricular activities and academic achievement, to delve deeper into the relationship. I took the interviews a step further asking parents what they thought it was about martial arts that assisted with education. Results of the analysis of the data collected indicated three general mechanisms through which martial arts assisted in education: teaching to achieve goals, teaching responsibility, and providing a tool for managing cognitive and behavioral disorders.

Similar to the findings of Spencer (2009), I found that martial arts families believe practicing the art form builds a type of habitus. Similar to how mixed martial arts fighters developed their internal view of what made them a mixed martial artist or not; the current analysis indicates a habitus developed among these elementary school students related to how they view they can approach adversity. Parents indicated that this habitus was developed in martial arts and then rewarded in the education system.

Conclusion

This chapter explored families' perceptions of how martial arts participation influences student school experiences. Findings showed that most families view a positive relationship between martial art and education. When asked further they even identified core ways in which they believe this happened. In Chapter 4, I will delve further into the relationship between martial arts and education with a quantitative analysis that considers the duration of involvement in the activity. Chapter 5 will review all the information gathered in Chapters 2 through 4 and provide an understanding of martial arts from its development in the United States, to its perceived role in students' lives modern day.

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Chapter 4. Martial Arts and Academic Performance

Introduction

Martial arts have been practiced recreationally in the United States since the 1950s. As a sport, martial arts advocates claim participants enjoy physical benefits. In addition, supporters also claim participants gain psychological benefits including decreased aggression, increased self-esteem, enhanced positive personality traits, and decreased delinquent behavior (Nosanchuk 1981; Zivin et al. 2001; Vertonghen and Theeboom 2010).

In this chapter, I move beyond the proximal benefits to consider whether sustained martial arts participation has a connection with enhanced academic performance and, by extension, social mobility in the US context. I consider the possibility that martial arts participation enhances the acquisition and transmission of cultural capital (Bourdieu 1979), or life experiences and outlooks that lead to success in formal education systems. Cultural capital is primarily transmitted within families, but scholars have been increasingly focusing on the role of schools and structured extracurricular activities in assisting in the intergenerational transmission of cultural capital (Hunt 2005; Dumais 2006; Dumais 2009; Covay and Carbonaro 2010). In brief, I test whether sustained martial arts participation is associated with positive academic outcomes.

Literature Review

Within the literature review I will begin by explaining my theoretical framework of cultural capital addressing the foundation of the theory, studies testing these foundations, an expansion of the concept within an American context, and how that relates to extracurriculars. Afterward, I will review some of the extracurricular activity literature. Review of this literature

will shed light on the tendency of certain types of activities to influence specific groups of participants in different ways.

That will lead into a discussion of the understanding of martial arts as a tool for developing those traits rewarded in the education system. Research will be examined that links martial arts to different psychological characteristics including reduced aggression, self-esteem, and other positive personality traits. Following that, research will be presented that discusses martial arts impact on delinquency. In line with the thought that these developed skills are all seen as valuable and rewarded within the education system, martial arts will be framed as a way to build cultural capital. Lastly, the current research that does exist surrounding martial arts and academic outcomes will be presented before explaining the current study.

Theoretical Framework: Cultural Capital

Bourdieu (1979) presented an idea called cultural capital as a type of accumulated life experience that influences success in the traditional education system. He explained that success in schooling required an upbringing with understanding of high culture, like knowledge of the arts, that only higher-class members of society had and transmitted to their children. Bourdieu (1979) explained that the rewarding of students' cultural capital, which is not taught in school, led to social reproduction of inequality, where upper class parents produced upper class students and lower-class parents led to lower class students.

Within Bourdieu's theory of cultural capital and social reproduction, he identified three forms of cultural capital passed from generation to generation: 1) embodied habitus, including how people view and carry themselves; 2) objectified, which is the possessions owned; and 3) institutionalized, which is the trading of cultural capital in the education system for privilege.

This system of trading cultural capital for privilege contributes to the social reproduction of inequality (Bourdieu 1997).

Bourdieu's idea of cultural capital sparked the interest of many researchers and studies began to test and expand his hypothesis (DiMaggio 1982; DiMaggio and Mohr 1985; Kalmijin and Kraaykamp 1996; Roscigno and Ainsworth-Darnell 1999; Dumais 2002). For instance, DiMaggio (1982) found a connection between cultural capital and high school students' grades. A few years later, DiMaggio (1985) analyzed information following students from high school to eleven years later in life. Findings from DiMaggio (1985) showed high culture activities had a significant direct impact on additional academic outcomes including: educational attainment, college attendance, college completion, and graduate education.

Soon the traditional concept of cultural capital, which was commonly measured using variables tapping into a knowledge of the high arts, like opera and classical music, underwent some revisions within sociological literature making it more inclusive of life in modern American society. As an example, Lamont and Lareau (1988:156) reframed the understanding of the term cultural capital, explaining the concept as "widely shared, legitimate culture made up of high status cultural signals (attitudes, preferences, behaviors, and goods) used in direct or indirect social cultural exclusion." After publishing several articles (e.g., Lareau and McNamara 1999; Lareau 2002; Lareau 2003) with this new understanding of the term, Lareau and Weininger (2003:569) provided an even more encompassing understanding of the concept explained as, "micro-interactional processes whereby individuals' strategic use of knowledge, skills, and competence come into contact with institutionalized standards of evaluations." Understanding cultural capital using these expanded definitions led to cultural capital reaching beyond just variables related to appreciation of classical music and understandings of fine arts to

knowledge of any aspect of a society's culture that was valued within institutions in which people are assessed.

Lareau (2003) widely applied this new understanding of cultural capital in her book, *Unequal Childhoods*, where she followed the lives of 12 families from different socioeconomic classes. In that book, Lareau differentiated between the two different parenting approaches she observed: concerted cultivation and accomplishment of natural growth. Concerted cultivation, she explained, was practiced by higher socioeconomically classified parents and involved parents nurturing their children's strengths through extensive planning of activities and wide-ranging reasoning. Accomplishment of natural growth was the parenting approach Lareau often observed lower socioeconomic status parents practiced. The natural growth approach involves parents making available environments for children to grow but allowing them to determine what they do with their own extra time. Lareau (2003) also found that these different parenting techniques involved in those raised using the concerted cultivation approach. The concerted cultivation approach engages children by inducing them to ask questions of authority figures, so they may better understand how to interact with professionals and navigate important institutions than those raised using the accomplishment of natural growth approach. Understanding cultural capital in this way lead to the inclusion of extracurricular activities into the measures of cultural capital. Furthermore, researchers soon sought to examine different types of extracurricular activities impact on students' academic outcomes (Hunt 2005; Dumais 2006; Dumais 2009; Covay and Carbonaro 2010).

However, the findings relevant to extracurricular activities' impact on academic outcomes is mixed (Hunt 2005; Dumais 2006; Dumais 2009; Covay and Carbonaro 2010). Hunt (2005) stated that he used a more suitable, casual ordering and had a better selection of controls

than previous studies such as Snyder and Spreitzer's (1999) and Marsh (1992), which found a positive relationship between extracurricular activities and academic outcomes. Hunt's (2005) study of six categories of extracurricular activities from athletics to church activities in high school demonstrated that extracurricular activities do not increase grades or educational expectations. Instead, Hunt said that achieving higher grades lead to more extracurricular participation. Dumais' (2009) study of Generation X and Millennial generation high school students found that school-related extracurricular activities were positively correlated with math scores and a student's expectations of whether or not they will subsequently go on to receive a bachelor's degree from college. Covay and Carbonaro (2010) also found a positive relationship between extracurricular activities and academic outcomes among elementary school students, but explained that much of the relationship is explained by non-cognitive skills gained in specific activities, such as attentiveness, organization, flexibility, and eagerness to learn.

Other scholars intrigued by previous findings explored the role of race, gender, and a reversed take on the role of social class in terms of the returns of cultural capital (Kalmijin and Kraaykamp 1996; Rocigno and Ainsworth-Darnell 1999). Using the Survey of Public Participation in the Arts, Kalmijin and Kraaykamp (1996) examined racial inequality in schooling, differences in cultural capital, and the benefits from the cultural capital gained. Results of their analysis showed that Black respondents who were exposed to cultural capital, measured using the traditional understanding of knowledge of fine arts, increased their cultural capital much faster than White participants. This increase was even present when considering Black/White differences. Higher levels of cultural capital were associated with higher levels of schooling achieved that the authors said could have contributed to Black/White convergence in

schooling. Furthermore, the researchers explained their findings show that cultural capital may serve as a path to upward mobility for less privileged minority groups.

On the other hand, Roscigno and Ainsworth-Darnell's (1999) examination, which utilized data following respondents from eighth grade to high school, found that differences in socioeconomic status between Black and White participants could explain racial differences in cultural capital, which is in line with the traditional understanding. However, cultural capital only had a small mediating relationship to the Black-White achievement gap. Further, Roscigno and Ainsworth-Darnell (1999) took this as indication that Black and low socioeconomic status students tend to receive less "educational return" for their investment in cultural capital, an impact they connected to micropolitical evaluative processes at the school and classroom level. For example, the dynamics of the school environment or difference in educational supplies.

With respect to gender, Dumais (2002) examined the role and interaction of cultural capital, gender, and habitus on grades of eighth grade students. Dumais (2002) found that while cultural capital (measured as the traditional understanding of knowledge of fine arts) does play a part regarding a student's grades habitus (measured as if the student had aspirations for a white collar job) plays an even more valuable role in grade determination. She found that young girls got more out of their participation in cultural capital activities than young boys.

Some authors also discovered an interesting twist in the understanding of cultural capital and class. Covay and Carbonaro (2010) pointed out that low socioeconomic status students benefit more from their participation in extracurricular activities in terms of achievement when compared to high socioeconomic status students. Dumais (2006) echoed this sentiment in her study of elementary school students' finding that extracurricular activities, such as dance, athletics, and art lessons, benefited lower socioeconomic status groups more than those from

higher socioeconomic classes. Moreover, Guest and Schneider (2003) discovered that non-sports related extracurricular activities showed to improve academic outcomes and aspirations in all contexts, but sporting activities had the strongest impact in schools with low educational expectations and those that are in poor communities. On a slightly different note, Eccles et al.'s (2003) research indicated that extracurricular activities, like performing arts, academic clubs, and athletics, produced positive academic outcomes but also connected to students enjoying school more.

Overall, this concept of cultural capital demonstrated an impact for students' academic outcomes. Some groups of students were thought to benefit more than others, while there may have been some evolution and disagreement on the detail of which groups that consisted of. Also, an important discussion of the impact the type of extracurricular activity has on different subsets of the population was mentioned. This laid the foundation for an investigation into the role martial arts, specifically, has as a type of cultural capital and incites inquiry into if it is potentially beneficial for all or even a subset of the population.

Martial Arts Participation and Education Performance

Research has been conducted that links martial arts to different psychological benefits including reduced aggression, increased self-esteem, and acquisition of other positive personality traits such as directness in communication. When it comes to studies of martial arts' impact on aggression, there seems to be a need to differentiate between traditional and modern martial arts (Hernandez and Anderson 2015; Hardwood et al. 2017). Hardwood et al. (2017) found that traditional martial arts that teach "Zen" and utilize breathing exercises lower aggression. Modern martial arts, with an absence of similar breathing techniques, were found to increase aggression. Hernandez and Anderson (2015) came to a similar conclusion explaining that martial artists

trained in internal techniques like controlled breathing, showed fewer signs of aggression than those who were not. The authors point to the internal techniques ability to balance out the impact of the external training, including striking and kicking. Nosanchuk's (1981) study interviewed forty-two traditional Karate students of various belt ranking and showed the impact of duration of martial arts involvement on aggression. They found that increased length in training was associated with lower levels of aggression.

While traditional martial arts are found to decrease the negative trait of aggression, they were also found to increase the positive trait of self-esteem (Fuller 1988; Weiser et al. 1995; Vertonghen and Theeboom 2010). Vertonghen and Theeboom (2010) conducted a meta-analysis of twenty-seven research articles which uncovered the majority of studies indicate a relationship between participation in martial arts and increased self-esteem. These and similar findings have led to martial arts being utilized as a type of psychotherapy (Weiser et al. 1995; Fuller 1988). Case studies of martial arts application as a therapy offer some insight into the relationship between martial arts and self-esteem. Weiser et al.'s (1995) case study of the use of Karate as a form of therapy found that martial arts' physical activity and use of group participation assists in the enhancement of self-esteem. Fuller (1988) offered the example of Akido as therapy and indicated that the emphasis on flexibility instead of strength help with self-esteem.

Case studies of martial arts use in therapy also identifies some other positive personality traits gained through martial arts practice besides just self-esteem (Fuller 1988; Weiser et al. 1995). For instance, Weiser et al. (1995) found that Karate was useful in teaching relaxation, concentration, assertiveness, and directness in communication. Fuller's (1988) study of Akido notably emphasized the impact that relaxation training has on being able to face adversity and controlling moods. Lack of aggressive behavior, higher self-esteem, concentration, assertiveness,

directness in communication, ability to face adversity, and control of one's mood are all very helpful personality traits to have when navigating the traditional education system.

Increase in positive personality traits and decreases in aggressive behavior found in many studies of martial arts makes the idea of the resocialization of delinquent children using martial arts appear worthwhile. Again, with this line of study, we see the importance in the distinction between traditional and modern martial arts training. Trulson (1986) conducted a study where juvenile delinquents were divided into three groups: traditional martial arts, modern martial arts, and no martial arts. He found that modern martial arts training correlated with measures of aggression indicative of increased delinquency among the study group. Meanwhile, traditional martial arts decreased delinquent behavior. Zivin et al.'s (2001) case study of sixty middle school boys at risk for violence and delinquency, echoed Trulson's (1986) findings, showing that participating in traditional martial arts classes decreased practitioners' violence levels and lowered negative psychological risk factors, like impulsivity. Joseph (2015) uncovered similar results in their intervention program that made use of Capoeira to decrease delinquent behavior. Theeboom and Vertonghen's (2009) investigation of children's experiences in martial arts indicated similar distinctions between approaches to marital arts making a difference on their impact as the earlier works of Trulson (1986) and Zivin et al. (2001). Overall, the various martial arts studies show: decreases in aggression, increases in self-esteem, boosts in other positive personality traits, and use as a successful resocialization tool as benefits for those labeled delinquents. Seemingly, these traits would also be useful within a traditional education system and rewarded in the form of intuitional cultural capital.

Cultural capital is knowledge not taught in school, but that is still rewarded within the education system. Considering that most martial arts training takes place outside of school; the

knowledge gained in martial arts could be considered a type of unique cultural capital, rewarded in traditional education systems. Interestingly, Spencer (2009) similarly identified martial arts as a source of cultural capital in their study of mixed martial arts. Spencer found that mixed martial arts developed the cultural capital of a fighters' habitus. This habitus was based off of how the fighters view themselves as a part of the sport and how they understand others to view them because of their participation. Within the current analysis, I test to see if traditional martial arts develop a habitus that benefits students in the academic classroom.

Previous research has indicated that analyzing this relationship at a larger level could be fruitful (Lantz 2002; Lakes and Hoyt 2004; Lakes et al. 2013; Alesi et al. 2014; Cho et al. 2017; Lima et al. 2017). Lantz's (2002) study that involved interviewing families with martial arts participants showed that parents believed martial arts classes helped their children improve their grades. Likewise, Lakes and Hoyt's (2004) research involved comparing randomly selected elementary school students who participated in Tae Kwon Do classes versus students who participated in traditional physical education classes. Those researchers found that students who participated in the Tae Kwon Do classes scored better on a mental math test (Lakes and Hoyt 2004). Lakes et al. (2013) then extended the earlier Lakes and Hoyt (2004) work by conducting a pilot study of Tae Kwon Do physical education classes versus traditional classes with some adjustments (i.e., they selected an older age group of children, extended their research to a longer period of time, and expanded to a larger group of 50 students). Lakes et al. (2013) hypothesis that martial arts improved executive functions proved true. Executive functions include abilities such as capacity to hold information in working memory, rapid and instinctual responses to stimulus, and adaptability to redirect one's focus which aids in doing well in school and work (Blair 2016). Additional studies yielded similar results with children practicing Karate indicating

improved executive functions (Alesi et al. 2014; Lima et al. 2017). Cho et al.'s (2017) research showed Taekwondo training had a positive impact on cognitive functioning as well.

Collectively, these studies explored the impact on executive functions, cognitive ability, and a small sample of mental math test performance with experimental designs; however, my research will expand the research dialogue by taking the analysis a step further. With a large data set, I will explore how sustained martial arts training translates to actual performance on math and reading standardized tests developed by educators. My research will use a nationally representative dataset, The Early Childhood Longitudinal Study, Kindergarten Class 1998-99, to see if there is a relationship between sustained martial arts participation and stronger performance on standardized tests.

Methods

In the methods section there is a description of the data set and variables used in the three analyses conducted. The three analyses ran included a regression measuring any participation in marital arts, a paired t-test measuring sustained involvement in the activity, and a difference model measuring various durations of the practice of marital arts. Explanation of the data includes information about the sampling process, types of information collected, and modes used to compile the data. In the report of the variables in this study I included information about the origins of the variable in the dataset, an explanation of how the variables were coded, and how the variables would vary dependent on which of the three analyses it was used in.

Description of the Data: Early Childhood Longitudinal Study, Kindergarten Class of 1998-99

The National Center for Education Statistics collected data for the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K) from 1998-2007. During that time data was collected from about 22,000 students selected through a multistage cluster sampling

process. The first step of the sampling process began with primary sampling units (PSUs) chosen including 1,335 geographic regions. Of the 1,335 geographic regions 100 were chosen. Next, 1,280 public and private schools offering kindergarten classes in those regions were selected. After that, an average of 23 kindergarteners were chosen from all the included schools. Special needs, minority, and disabled students were oversampled to provide large enough groups for analysis. In order to account for the sampling approach used I utilized weights in the regression and difference models. Current analyses only utilize data from three waves and drops missing cases, lowering the sample size.

United States public and private school data was generated. Students selected attended both full day and part day kindergarten classes. Data was collected in both the fall and spring of kindergarten and fall and spring of 1st grade. However, data was only collected in the spring of 3rd, 5th, and 8th grade. Information collected included data about children's home, school, and classroom environment(s) in addition to the material on the student's social, emotional, physical, and cognitive development. Information was also collected about children's families and educational activities at home. School data included a compilation of facts about teacher qualifications and classroom curriculum. Data was collected using a variety of methods. Information was compiled using questioners to gain data from teachers and school administrators. Trained researchers observed children in schools. Phone interviews were also used to compile input from parents.

Variable Definitions

Table 4.1 presents descriptive statistics for the variables used in my analyses. Below I define each variable and how they are measured in my three analyses.

Table 4.1: Descriptive Statistics of Variables of Interest

Variable	Mean or Proportion	SE
Dependent Variables		
5 th grade reading standardized test scores	152.37	1.35
5 th grade math standardized test scores	126.10	1.31
Independent Variable		
Any martial arts participation K-5 th grade	.14	.01
Control Structured Activities		
Any traditional cultural capital activities	.67	.01
Any athletic activities	.76	.01
Any clubs	.49	.02
Individual Controls		
White	.66	.03
Black	.12	.02
Latino	.14	.02
Asian	.02	.00
Other	.06	.02
Female	.49	.01
Disability	.13	.01
Kindergarten reading standardized test scores	47.27	.53
Kindergarten math standardized test scores	37.76	.53
Family Controls		
Married	.73	.02
Only child	.13	.01
1 sibling	.46	.01
2-3 siblings	.38	.01
4+ siblings	.03	.01
Socioeconomic status	.07	.06
School Controls		
Less than 10% minority	.28	.04
10 to less than 25% minority	.20	.03
25 to less than 50% minority	.21	.03
50 to less than 75% minority	.11	.02
75% or more minority	.19	.03
Percent free lunch	35.28	2.41

Dependent Variables. Below is a description of the dependent variable, performance on standardized tests, and how it was used in each model.

Performance on Standardized Tests. I employed two measures of academic performance, in reading and math. Both were assessed as part of the ECLS-K survey. Tests for

the reading standardized test scores were developed from the *Reading Framework for the 1992 and 1994 National Assessment of Education Progress*. ECLS-K also consulted literacy curriculum specialists and held focus groups of kindergarten through second grade teachers. In the focus groups, teachers reviewed the proposed framework and question pool. Topics addressed in the measure included: initial understanding, developing interpretation, personal reflection, and demonstrating a critical stance. Reading standardized test scores in fifth grade, had a mean of 152.37. Measures for the math standardized test scores were derived from the *Mathematics Framework for the 1996 National Assessment of Education Progress*. Content tested in the math standardized testing included number sense, properties, and operations, measurement, geometry and spatial sense, data analysis, statistics and probability, patterns, algebra, and functions. Math standardized test scores had a mean of 126.10. The dependent variable of standardized test score was measure two different ways in my analyses.

Test Score in 5th Grade. First, I used the actual reading and math score in fifth grade in the initial regression analysis.

Reading Change Score. Second, I measured standardized reading test performance using change scores in the t-test. I calculated the change score by subtracting the kindergarten test score from the fifth-grade test score and then dividing the difference by the kindergarten test score.

$$\frac{5^{\text{th}} \text{ Test Score} - \text{K Test Score}}{\text{K Test Score}}$$

K Test Score

Independent Variables. Below I explain the independent variable of marital arts participation and how it was measured in the various analysis.

Martial Arts Participation. The independent variable in my analyses is martial arts participation. Data regarding martial arts was available as part of a follow up question. The initial question was “In the last 12 months, did {CHILD} regularly get exercise through any of the following organizations?” Respondents could choose different organizations as a response, including: recreation centers, churches, sports teams, YMCAs, health clubs and other organizations. Data for participation in martial arts was gathered from the follow up question, “What types of exercise or physical activity did {CHILD} get at the places you just mentioned?” Interviewers then coded all that applied from a list of seven activities including activities such as group sports, individual sports, dance, recreational sports, playgroup activities, and martial arts. Martial arts participation was measured three different ways in the various analyses.

Ever Participated in Martial Arts. In the regression analysis, ever participated in martial arts was measured as participation at any point in kindergarten, third, or fifth grade, coded one for involvement and zero if the student did not take martial arts classes in the regression analysis. As can be seen in Table 4.1, fourteen percent of students, in the sample, took part in martial arts at some point from kindergarten to fifth grade.

Participated for 6 Years. In the second analysis, sustained martial arts participation was tested using a paired t-test. Those that reported involvement in martial arts in all three waves were considered to have participated for six years in the t-test analysis. Table 4.2 lists the resulting 25 students who took part in martial arts from kindergarten to fifth grade.

Duration of Martial Arts Participation. Duration of martial arts participation in the third difference model was measured using an ordinal variable indicating various lengths of

Table 4.2: Matching K-5 Martial Arts Participants with Classmates

K-5 Martial Art Participants					Matched Non-Martial Arts Participants				
Pair #	Gender	Race	SES in Quintile	Parent's Martial Status	Pair #	Gender	Race	SES in Quintile	Parent's Martial Status
1	Female	White	3	Never Married	1	Female	White	3	Married*
2	Female	White	5	Married	2	Female	White	4*	Married
3	Female	White	3	Married	3	Female	White	3	Married
4	Male	White	3	Married	4	Male	White	3	Married
5	Male	White	5	Married	5	Male	White	5	Married
6	Male	Latino	5	Separated	6	Male	White*	4*	Married*
7	Male	Latino	3	Separated	7	Male	Latino	3	Married*
8	Female	White	5	Married	8	Female	White	5	Married
9	Male	White	5	Married	9	Male	White	5	Married
10	Male	White	4	Married	10	Male	White	4	Married
11	Male	White	4	Married	11	Female*	White	4	Married
12	Male	White	3	Married	12	Male	White	3	Married
13	Female	White	4	Married	13	Female	White	4	Married
14	Female	Latino	2	Married	14	Female	Other*	2	Married
15	Female	White	5	Married	15	Female	White	5	Married
16	Female	White	5	Married	16	Female	White	4*	Married
17	Male	White	4	Married	17	Male	White	4	Married
18	Male	White	5	Married	18	Male	White	4*	Married
19	Female	Black	3	Separated	19	Female	Black	4*	Never* Married
20	Female	Asian	5	Married	20	Male*	Asian	5	Married
21	Male	White	4	Married	21	Male	White	4	Married
22	Male	Latino	4	Never Married	22	Male	Black*	5*	Never Married
23	Male	Black	4	Married	23	Male	White*	3*	Married
24	Male	White	4	Married	24	Male	White	4	Married
25	Male	White	5	Married	25	Male	White	5	Married

*Identifies characteristics that don't match the martial art participants

Notes on MA Participants

1. 10 female, 15 male MA participants
2. 18 White, 4 Latino, 2 Black, 1 Asian
3. 10 in top SES quintile, 8 in 4th quintile, 6 in 3rd quintile, 1 in 2nd quintile
4. 20 married, 2 never married, 3 separated

Other notes, matching

1. 14 matched on all 4 characteristics, 9 matched on 3 out of 4 characteristics, 3 matched on 2 out of 4 characteristics, 1 matched on 1 out of 4 characteristics
(table cont'd.)

2. 23 of 25 matched on gender
3. 21 of 25 matched on race
4. 18 of 25 matched on SES (in 5 cases, the match was lower SES, in 2 cases, match had higher)
5. 21 of 25 match on parents' marital status

involvement. As can be seen in Table 4.3, groupings for the martial arts variable was comprised of: not involved (86.91% of the sample), involved for one year (9.96% of participants), involved for three to four years (2.75%), and involved for six years (0.38% of the sample).

Table 4.3: Descriptive Statistics Sustained Participation in Structured Activities

Structured Activity	Not involved	Involved 1 year	Involved 3 to 4 years	Involved 6 years
Martial arts	86.91%	9.96%	2.75%	.38%
Music	60.40%	24.77%	11.68%	3.16%
Art	74.33%	19.70%	4.76%	1.22%
Dance	69.97%	19.25%	6.86%	3.91%
Performance	59.07%	24.11%	12.52%	4.30%
Athletic	19.16%	20.56%	22.89%	37.39%
Club	51.42%	25.39%	17.74%	5.44%
4-H	94.08%	4.97%	.72%	.23%

Control Variables. Control variables included other structured activities, individual level information, family characteristics, and school data.

Other Structured Activities. Other structured activities controlled for included participation in art related activities, athletic activities, and clubs in kindergarten, third, or fifth grade. Art related activities encompassed music lessons, art lessons, dance lessons, or performing. Information regarding art participation came from questions asked of parents similar to, “Outside of school hours, has {CHILD} ever participated in: Dance lessons?” The athletic related activities measure derived from a similar question, “Outside of school hours, has

{CHILD} ever participated in: Organized athletic activities, like basketball, soccer, baseball, or gymnastics?” Club participation was measured as any participation in clubs or 4-H. Participation in clubs’ information was gathered from the question, “[Outside of school hours, has {CHILD} ever participated in:] Organized clubs or recreational programs, like scouts?” Involvement in 4-H information was compiled from the question. “[In the last 12 months, did {CHILD} regularly get exercise through any of the following organizations?] 4-H or other farm clubs?” Participation in the different activities were all coded “1” for participation and “0” if not. Non-martial art activity participation was controlled for in two different ways in the first and last analysis.

Ever Participated in a Non-Martial Arts Activity. Any participation in non-martial arts controls were measured as participation at any point in kindergarten, third, or fifth grade, coded one for involvement and zero if the student did not take part in the activity. As can be seen in Table 4.1, sixty-seven percent of students, in the sample, took part in, non-martial arts, arts activities at some point from kindergarten to fifth grade. Seventy-six percent had ever participated in non-martial art fitness related activities. Forty-nine percent of students had ever took part in, non-martial art, clubs.

Duration of Involvement in Non-Martial Arts Activities. Duration of involvement in non-martial arts activities was controlled in the third differences model through ordinal variables for each different activity. Different activities controlled for include music, art, dance, performance, athletics, clubs, and 4-H. Duration of each activity was measured as no involvement, one year of participation, taking part in an activity for three to four years, or involvement for 6 years. Table 4.3 provides further information about the percentage of participants involved in each activity for the respective length of time. Difference variables were not generated for the other control

variables based off the belief that those characteristics would not change drastically over the six-year period of time measured in this analysis.

Individual Level Controls. Individual level controls in the analyses included race, gender, student disabilities, and prior performance on standardized tests. Racial categories used in this analysis included White, Black, Latino, Asian, and Other. Gender was measured as male or female. Student disability information was compiled by asking the parents if their child had a disability and their response of either yes or no. Race, gender, and disability were coded as binary variables, with “1” indicating the applicable category and the others as “0.” Previous performance on standardized test scores were measured by selecting the students’ score on standardized tests in the base year.

Family Controls. Family controls used in this analysis included parents’ marital status, number of siblings, and family socioeconomic status. Parents marital status information was measured as either married or not. The not married category combined grouping of data that included parents identifying themselves as separated, divorced, widowed, and never married. Number of siblings was grouped into four different groups including only child, one sibling, two to three siblings, or four or more. Family socioeconomic status was measured using the continuous measure available.

School Level Controls. School level controls covered percent minority and percent free lunch. Percent minority groupings included five categories which were less than 10, 10 to less than 25, 25 to less than 50, 50 to less than 75, and 75 or more. Percent free lunch was measured as the actual percentage reported.

Findings

To analyze the relationship between martial arts and academic outcomes, I began with a regression analysis between martial arts participation and standardized test scores. Two regressions were conducted: one measuring reading standardized test scores and another utilized math test scores. As can be seen in Table 4.4, both regression analyses of martial arts' relationship to standardized test scores led to the association that they were not statistically significant when accounting for all controls. In order to have a sample size large enough to run a regression analysis martial arts participation was measured as any participation from kindergarten to fifth grade. What that means is that this grouping of students includes those with a wide range of experiences with martial arts, including those who attended one class as a kindergartener and those who have taken martial arts consistently from kindergarten to fifth grade. Duration of involvement could impact the relationship between martial arts and academic outcomes. Therefore, I conducted another analysis focusing on this long-term involvement, using a paired t-test.

First, to conduct the paired t-test, I compiled a master list of all students who participated in martial arts from kindergarten to fifth grade. As can be seen in Table 4.2, there were 25 students who participated for all six years. In the martial arts participants group 15 were male and ten were female. Racially, 18 participants were White, four were Latino, two were Black, and one participant was Asian. When it came to socioeconomic status quintiles ten participants were in the top quintile, eight in the 4th quintile, six were in the 3rd quintile, and one was in the 2nd SES quintile. Twenty had parents who were married, two had parents who were never married, and three had separated parents.

Table 4.4: Regression Results Martial Arts Relationship to Standardized Test Score

Variable	Reading Score B (SE)	Math Score B (SE)
Structured Activities		
Martial Arts	1.58 (1.37)	-.16 (1.07)
Cultural Capital	3.51 (1.27) **	.46 (.85)
Athletics	.75 (1.15)	2.33 (1.00) *
Club	2.89 (1.25) *	1.68 (.88)
Individual Controls		
Black	-6.81 (1.88) ***	-5.57 (2.12) **
Latino	-.86 (1.64)	.59 (1.61)
Asian	-5.017 (2.66)	3.61 (1.87)
Other	-6.21 (2.25) **	-4.87 (2.89)
Female	.93 (1.07)	-4.41 (1.04) ***
Disability	-4.05 (1.67) *	-3.64 (1.26) **
Kindergarten Score	.80 (.05) ***	1.17 (.07) ***
Family Controls		
Married	2.12 (1.10)	2.36 (1.07) *
One Sibling	2.94 (1.82)	2.56 (1.34)
2-3 Siblings	.17 (1.74)	2.49 (1.61)
4+ Siblings	-8.50 (4.21) *	.43 (3.26)
Socioeconomic Status	5.81 (.86) ***	3.52 (.89) ***
School Controls		
10 to 25 % Minority	2.21 (1.93)	1.89 (2.04)
25 to 50 % Minority	-2.61 (1.92)	1.17 (1.68)
50 to 75 % Minority	-.21 (2.72)	-.12 (2.05)
75% or more Minority	-.82 (2.88)	1.07 (2.68)
Percent Free Lunch	-.08 (.03) *	-.10 (.03) ***
Constant	111.42 (3.96)	81.05 (3.73)
R ²	.43	.54
N	1,757	1,847

Notes: *p<.05, **p<.01, ***p<.001

Next, I used the nearest neighbor approach to match those twenty-five students with their closest same school match based off four criteria: gender, race, socioeconomic status quintile, and parents' marital status. Note that by matching martial arts students with students from their own school, I also paired the students by school characteristics. As can be seen in Table 4.2, I matched 14 pairs on all four characteristics, nine matched on three out of the four traits, three

matched on two out of the four, and one matched on one out of the four characteristics. Twenty-three of the 25 pairs matched based on gender. Racially, 21 pairs matched on race. Eighteen of the 25 pairs matched on socioeconomic status quintile. In cases that did not match by socioeconomic quintile, five cases were paired with a lower socioeconomic status match and two pairs were matched with a higher socioeconomic status match. Twenty-one of the 25 pairs matched on parents' marital status.

After matching all the long-term martial art students with their non-martial arts pairs change scores were calculated for each student. Following the calculation of change scores I conducted a one-tailed paired t-test analyzed with an experimental hypothesis that martial arts would have an impact on academic outcomes and a null hypothesis of martial arts having no impact on education. By using a paired t-test I was not able to incorporate a weight to account for the sampling conducted in the collection of this data. In addition, the current inquiry did not account for participation in other extracurricular activities. Analysis of the paired t-test indicated a statically significant relationship between long-term martial arts participation and reading standardized test scores.

As can be seen in Table 4.5, T-test results indicated that participation in martial arts for six years had a positive impact on students reading standardized test scores proving the importance of sustained involvement on the receipt of academic benefits. The calculated t of 1.99 was higher than the critical t of 1.71 leading to the rejection of the null hypothesis of no difference. However, this leaves the question how long, is long enough to see the benefits of martial arts on academics? To account for shorter increments of sustained involvement and strengthen the understanding of this relationship, I analyzed a difference model.

Table 4.5: Results from Paired T-test Martial Arts Relationship to Reading Change Scores

Groupings	N	Mean	SD	t-cal	t-crit	df	p	Decision
Martial Art Participants	25	.28	.70	1.99	1.71	24	<.05	Reject
Similar Matches	25							

After understanding the two extremes of duration of involvement in the previous two analyses I conducted a difference model to take into account all possible lengths of involvement in martial arts measurable with the *Early Childhood Longitudinal Survey of Youth*. For this analysis the independent variable, martial arts, was recoded into an ordinal variable measuring various durations of involvement. Two separate models were developed. One model measured the impact of martial arts on reading and the other on math. Unlike the paired t-test analysis; the difference model took into account the participation in other extracurricular activities.

As can be seen in Table 4.6, results of the difference model analysis did not show a statistically significant relationship between sustained martial arts involvement and standardized test scores. Other interesting results found in the difference model indicated that extended duration of involvement in music proved fruitful when it came to academic outcomes. However, as duration of involvement in athletics increased there was a negative impact on math outcomes.

Discussion

My research examined sustained martial arts impact on educational outcomes and found that, while any or short-term participation in martial arts may not result in a change academically, long-term involvement in martial arts can have a positive impact. Finding support for this connection completes the development of an understanding of martial arts as a type of cultural capital rewarded in traditional education systems. In this paper we see cultural capital

Table 4.6: Difference Model Results Sustained Martial Arts Involvement Impact on Standardized Test Scores

Variable	Reading	Math
Structured Activities		
Martial Arts Ordinal	-.03 (.03)	-.03 (.05)
Music Ordinal	-.05 (.02) *	-.01 (.03)
Art Ordinal	.05 (.03) *	.02 (.03)
Dance Ordinal	.02 (.03)	.02 (.03)
Performance Ordinal	.01 (.02)	-.04 (.02)
Athletic Ordinal	-.01 (.02)	-.05 (.02) *
Club Ordinal	.02 (.03)	-.00 (.02)
4-H Ordinal	.01 (.08)	.08 (.08)
Individual Controls		
Black	-.01 (.06)	.10 (.08)
Latino	.16 (.06) **	.39 (.09) ***
Asian	-.11 (.11)	.26 (.14)
Other	-.02 (.06)	-.02 (.11)
Female	-.08 (.04)	-.15 (.04) ***
Disability	.10 (.07)	.04 (.06)
Family Controls		
Married	-.08 (.03)	-.01 (.06)
One Sibling	.06 (.06)	.07 (.06)
2-3 Siblings	.06 (.06)	.07 (.07)
4+ Siblings	-.03 (.11)	.14 (.13)
Socioeconomic Status	-.01 (.03)	-.07 (.04)
School Controls		
10 to 25 % Minority	.01 (.08)	.00 (.10)
25 to 50 % Minority	-.19 (.08) *	.00 (.09)
50 to 75 % Minority	-.14 (.09)	-.04 (.10)
75% or more Minority	-.14 (.09)	-.02 (.12)
Percent Free Lunch	-.14 (.00)	-.00 (.00)
Constant	2.45 (.10)	2.60 (.12)
R ²	.03	.06
N	1,749	1,839

Notes: *p<.05, **p<.01, ***p<.001

theory in action. Parents objectified capital, of money, can be used to provide activities that develop habitus, of ways of interacting, and that becomes institutionalized capital, trading cultural capital in the education system for privilege (Bourdieu 1997). Approaching the

application of cultural capital theory through the focus on one activity is a tactic not yet explored in the current literature.

Furthermore, previous research found martial arts had a relationship to executive functions, cognitive ability, and performance on mental math tests (Lantz 2002; Lakes and Hoyt 2004; Lakes et al. 2013; Alesi et al. 2014; Cho et al. 2017; Lima et al. 2017). My results expand those findings by connecting martial arts not just to the executive functions, as has been done in the past with experiments, but by expanding the relationship to an additional subject area, reading, and utilizes a large nationally representative database in the analysis. Results from my research also showed the impact of duration of involvement in martial arts on academic outcomes, an approach not tackled in current research that typically identifies the impact of one length of time per paper.

Conclusion

Chapter 2, discussed the expansion of martial arts in the United States and the adoption of the art form as an extracurricular activity. Within Chapter 3, I delved deep into the relationship between martial arts and education asking martial arts families how they perceive the relationship and how the phenomenon functions. In Chapter 4, an understanding was provided of sustained martial arts as a type of cultural capital rewarded in the education system. Within Chapter 4, we will delve deeper into this relationship asking martial arts families how they perceive the relationship between martial arts and academics functions. Chapter 5, will review this information that has provided an understanding of martial arts from its' development in the United States, to its' role in students' lives modern day.

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Chapter 5. Conclusion

Contributions

In this dissertation I contributed to martial arts and cultural capital research in ways not commonly found in the current literature. For instance, many histories presented of martial arts in the recent literature only touch on one discipline at a time. However, in, Chapter 2, I have accumulated the history of many different categories of martial arts to provide a holistic understanding of how martial arts, more generally, came to be an after-school activity. My dissertation is also one of the first to analyze the relationship between sustained martial arts participation and academic outcomes with a large statistical database.

Regarding cultural capital this dissertation has presented a close inspection into the impact of one type of extracurricular activity, martial arts, providing insights into if and how cultural capital translates into academic success, in Chapter 3-4. Chapters 3 through 4 provide an example of cultural capital's existence in all three forms identified by Bourdieu (1997).

The first form of cultural capital considered in this research is the parents objectified capital of money to send their child to martial arts classes. After some time in the training parents identified another form of cultural capital developing, habitus, the nonacademic advantages parents identified in Chapter 3. Also, Chapter 4 identified how prolonged involvement in martial arts translated into institutional capital, the exchange of cultural capital in schooling to receive privilege.

In Chapter 3, I also expand the idea presented in the work of Spencer (2009) that martial arts produce habitus, a type of cultural capital, into another environment, children's academics. Spencer (2009) found that those who practiced Mixed Martial Arts developed a fighter's habitus through the training. My inquiry resulted in similar findings with elementary school students

developing cultural capital they could exchange for success in the academic classroom. I further spoke with parents to see how they believed martial arts translated into academic success. This is a mode of inquiry, directly asking parents their opinion of how the activity translates into academic success, is an approach not usually seen in cultural capital literature.

I also expand further research, in Chapter 4, by investigating a relationship between sustained martial arts participation and education (Lantz 2002; Lakes and Hoyt 2004). Lakes and Hoyt (2004) instituted a martial arts physical education class and found it boosted performance on mental math tests. Chapter 4, indicates similar findings with sustained participation in martial arts having an impact on reading standardized test scores.

Limitations

While this dissertation has contributed to larger sociological literature; it does have some limitations. One such limitation is that there is not a statistical analysis of how martial arts develops the mediating cultural capital that improves education. My research does, however, provide the initial first step indicating that seeking a measure of that sort would be beneficial. Interviews conducted in this study were only taken from two schools, taught by the same instructors, and included only two martial arts disciplines. Collecting data regarding schools that teach two martial arts could present information about advantages gained from training those art forms specifically. However, because there is more than just one art form being taught my research does provide more of an overview than most current research articles that investigate one form of martial arts at a time.

Future Research

After-School Martial Arts builds the groundwork for future research in both the subjects of martial arts and cultural capital. Future research could generate, or locate, another dataset that

provides a larger sample of martial arts participants and repeat the current analysis. Repetition of this generalizable study, found in Chapter 4, with a larger, more current, sample could provide a definitive understanding of the impact of short-term involvement in martial arts.

Other future research could analyze if there is a difference by gender, social class, race, or sexual orientation in receipt of academic benefits from participation in martial arts. Research could also be conducted to see if the findings regarding this specific age group, of elementary school students, are similar for other age groups at the middle school, high school, and college level. Future analysis could be conducted to statistically test if the mediating factors identified by parents in Chapter 4 are indeed bringing about the perceived changes in elementary school martial arts students' academic performance.

Research in the future could also seek to interview martial arts participants and their families from a wide range of different martial arts backgrounds in order to see if the findings in this study hold true for martial arts as a whole or only certain disciplines. Future qualitative research could investigate into investigate different types of extracurricular activities in a similar manner as the current study. Information about various extracurricular activities, investigated within the realm of cultural capital, could provide data about what academic returns each activity bring to the table. Research of different after-school activities returns, in the context of cultural capital, could provide insight into what activities are most beneficial for different student needs.

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Appendix A. Institutional Review Board Documents

ACTION ON PROTOCOL APPROVAL REQUEST



Institutional Review Board
Dr. Dennis Landin, Chair
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TO: Sarah Becker
Sociology

FROM: Dennis Landin
Chair, Institutional Review Board

DATE: May 26, 2017

RE: IRB# 3874

TITLE: Martial Art's Impact on Practitioners

New Protocol/Modification/Continuation: New Protocol

Review type: Full ☐ Expedited ☒ Review date: 5/26/2017

Risk Factor: Minimal ☒ Uncertain ☐ Greater Than Minimal ☐

Approved ☒ Disapproved ☐

Approval Date: 5/26/2017 Approval Expiration Date: 5/25/2018

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 50

LSU Proposal Number (if applicable):

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman 

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –

Continuing approval is **CONDITIONAL** on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc.**

**All Investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>*

ACTION ON PROTOCOL APPROVAL REQUEST



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Chair, Institutional Review Board

DATE: November 3, 2017

RE: IRB# 3874

TITLE: Martial Art's Impact on Practitioners

New Protocol/Modification/Continuation: Modification

Brief Modification Description: Include observations and interviews.

Review type: Full ☐ Expedited ☒ Review date: 9/18/2017

Risk Factor: Minimal ☒ Uncertain ☐ Greater Than Minimal ☐

Approved ☒ Disapproved ☐

Approval Date: 11/3/2017 Approval Expiration Date: 5/28/2018

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 50

LSU Proposal Number (if applicable):

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman 

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –

Continuing approval is **CONDITIONAL** on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: Make sure you use bcc when emailing more than one recipient.**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>*

ACTION ON PROTOCOL APPROVAL REQUEST



Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
lrp@lsu.edu
lsu.edu/research

TO: Sarah Becker
Sociology

FROM: Dennis Landin
Chair, Institutional Review Board

DATE: January 22, 2018

RE: IRB# 3874

TITLE: Martial Art's Impact on Practitioners

New Protocol/Modification/Continuation: Modification

Brief Modification Description: Revise interview guide, add survey, and change location of interviews.

Review type: Full ☐ Expedited ☒ Review date: 1/22/2018

Risk Factor: Minimal ☒ Uncertain ☐ Greater Than Minimal ☐

Approved ☒ Disapproved ☐

Approval Date: 1/22/2018 Approval Expiration Date: 5/25/2018

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 50

LSU Proposal Number (if applicable):

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman 

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –

Continuing approval is **CONDITIONAL** on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
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3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE: Make sure you use bcc when emailing more than one recipient.**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>*

ACTION ON PROTOCOL CONTINUATION REQUEST



Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
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lsu.edu/irbsearch

TO: Sarah Becker
Sociology

FROM: Dennis Landin
Chair, [Institutional] Review Board

DATE: April 12, 2018

RE: IRB# 3874

TITLE: Martial Art's Impact on Practitioners

New Protocol/Modification/Continuation: Continuation

Review type: Full ☐ Expedited ☒ **Review date:** 4/12/2018

Risk Factor: Minimal ☒ Uncertain ☐ Greater Than Minimal ☐

Approved ☒ **Disapproved** ☐

Approval Date: 4/12/2018 **Approval Expiration Date:** 4/11/2019

Re-review frequency: (annual unless otherwise stated)

Number of subjects approved: 50

LSU Proposal Number (if applicable):

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman 

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved,
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination,
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends,
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent,
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study,
7. Notification of the IRB of a serious compliance failure,
8. **SPECIAL NOTE: Make sure to use bcc when emailing more than one recipient,**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>*

Appendix B. Interview Guide for Parents

This research seeks to understand the impact of martial arts on practitioners. Over a period of one year, the investigator will be interviewing various participants in the martial arts about their experiences in 30 min to 1 hour long interviews. The interviews will seek to find any impact that martial arts may have on participants and what aspects of martial arts bring about what outcomes. Are you willing to participate in this research and be recorded?

Introduction Questions

1. How long has (NAME) been doing martial arts?
 - a. Has (NAME) attended any school prior to this martial arts school?
 - i. How long has (NAME) attended each school?
2. What rank [is NAME] currently at?
3. How did [NAME] decide to start taking martial arts classes?
4. What has kept [NAME] involved in martial arts classes?
5. What does [NAME] find most enjoyable about martial arts?
 - a. Is there anything else you think they enjoy?
 - i. Anything else? If you want, you can just list off things you think they like.
6. What do you like most about your child taking martial arts?
 - a. Is there anything else?
 - i. Anything else? If you want, you can just list off things you like.
7. What do you think [NAME] gets the most from in martial arts?

Changes in the student/self

8. Since starting martial arts have you noticed any types of changes in [NAME]?
 - a. If yes what changes have you noticed?
 - i. What aspect of martial arts do you think has caused those changes to occur?
 - b. Are there any other changes you noticed?
9. Since starting martial arts have you noticed any changes in how [NAME] is around their friends?
 - a. What aspect of martial arts do you think has caused those changes to occur?

- b. Are there any other changes with [NAME'S] interactions with peers you want to mention?
- 10. Since starting martial arts have you noticed any changes in what [NAME'S] like when they are around adults?
 - a. What aspect of martial arts do you think has caused those changes to occur?
 - b. Are there any other changes with how [NAME] is around adults that you would like to mention?
- 11. Since starting martial arts have you noticed any changes in how happy [NAME] is?
 - a. If yes, what aspect of martial arts do you think has made those changes occur?
 - b. If no, have you noticed any changes in how often they are happy?
- 12. Since starting martial arts have you noticed any changes in how angry [NAME]/ you are?
 - a. If yes, what aspect of martial arts do you think has made those changes occur?
 - b. If no, have you noticed any changes in how often they are angry?
- 13. Since starting martial arts have you noticed any changes in how much [NAME] can pay attention?
 - a. What about martial arts do you think has made those changes happen?
- 14. Since starting martial arts have you noticed any changes in [NAME's] ability to focus?
 - a. What about martial arts do you think has made those changes happen?
- 15. Since starting martial arts have you noticed any changes in how much energy [NAME] has throughout the day?
 - a. What about martial arts do you think has made those changes happen?
- 16. Since starting martial arts have you noticed changes in [NAME'S] grades?
 - a. What about martial arts do you think has made those changes happen?
- 17. Is there anything else you can add to the interview about how martial arts has affected [NAME]?

Appendix C. Interview Guide for Students

This research looks at the way martial arts affects people by talking to people and watching martial arts classes. The interview should take no longer than an hour. Is it okay if I record our conversation?

Introduction Questions

1. How long have you (or has NAME) been doing martial arts?
 - a. Have you (or NAME) attended any school prior to this martial arts school?
 - i. How long have you (or has NAME) attended each school?
2. What rank are you [is NAME] currently at?
3. How did [NAME]/ you decide to start taking martial arts classes?
4. What has kept [NAME]/you involved in martial arts classes?
5. What do you like most about martial arts?
 - a. Is there anything else you enjoy about it?
 - i. Anything else? If you want, you can just list off things you like.
6. What do you think [NAME]/ you get the most from in martial arts?

Changes in the student/self

7. Since starting martial arts have you noticed any types of changes in [NAME]/yourself?
 - a. If yes what changes have you noticed?
 - i. What about martial arts do you think made those changes happen?
 - b. Are there any other changes you noticed?
8. Since starting martial arts have you noticed any changes in what [NAME'S]/your like when you're around your friends?
 - a. What about martial arts do you think has made those changes happen?
 - b. Are there any other changes with peers you want to talk about?
9. Since starting martial arts have you noticed any changes in what [NAME'S]/you're like when you are around adults?
 - c. What about martial arts do you think has made those changes happen?
 - d. Are there any other changes with how you are around adults that you can think of?
10. Since starting martial arts have you noticed any changes in how happy [NAME]/ you are?

- c. If yes, what about martial arts do you think has made those changes happen?
 - d. If no, have you noticed any changes in how often you are happy?
11. Since starting martial arts have you noticed any changes in how angry [NAME]/ you are?
- c. If yes, what about martial arts do you think has made those changes happen?
 - d. If no, have you noticed any changes in how often you are angry?
12. Since starting martial arts have you noticed any changes in how much [NAME'S]/ you can pay attention in class?
- b. What about martial arts do you think has made those changes happen?
13. Since starting martial arts have you noticed any changes in how [NAME'S]/ you focus while doing assignments in class?
- b. What about martial arts do you think has made those changes happen?
14. Since starting martial arts have you noticed any changes in how much energy [NAME'S]/ you have throughout the day?
- b. What about martial arts do you think has made those changes happen?
15. Since starting martial arts have you noticed changes in [NAME'S]/ your grades?
- b. What about martial arts do you think has made those changes happen?
16. Is there anything else you can add to the interview about how martial arts has affected you?

Vita

Rose Kelley is a sociology teacher and researcher from Kenner, Louisiana. She graduated from Loyola University in New Orleans in 2010 with a Bachelor of Arts in Sociology. In 2011, Rose began her graduate work at Louisiana State University where she earned her Master of Arts in Sociology. She then began working toward her doctorate at LSU.