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Alfred W. Hubbard and the Sport Psychology Laboratory at the University of Illinois, 1950-1970

Alan S. Kornspan

University of Akron

Abstract

Although most history of sport psychology literature provides information about Coleman Griffith, little is known about Griffith's activities related to the discipline after 1940. Thus, the purpose of the present paper is to explain Griffith's influence on the re-institution of the Sport Psychology Laboratory at the University of Illinois in 1951. Additionally, the work of the sport psychology laboratory at the University of Illinois under the direction of Alfred W. Hubbard is documented. Specifically, this manuscript provides information about sport psychology at the University of Illinois between 1950 until 1970.

Keywords: Alfred W. Hubbard, Coleman Griffith, history of sport psychology

Alfred W. Hubbard and the Sport Psychology Laboratory at the University of Illinois, 1950-1970

In recent years, the development of the sport psychology discipline in North America has continued to be understood more fully (e.g, Green & Benjamin, 2009b). For instance, details have begun to be provided about the early years of this field. Specifically, during the formation of the sport psychology discipline, individuals at various laboratories began to investigate psychological issues related to athletics. Researchers such as E. W. Scripture applied the "new psychology" to the study of sport and called for psychology to be examined from a scientific perspective (Goodwin, 2007). Additionally, Norman Tripplet analyzed the historical records of cyclists riding alone or versus a competitor and established that when a cyclist was competing, increased performance was observed (Davis, Huss, & Becker, 2009). Although, Scripture, Tripplet and other psychologists and physical educators explored the psychology of sport between 1890 and 1920, formal sport psychology laboratories were nonexistent (Weinberg & Gould, 2011). In North America, the first laboratory to focus on the psychology of sport was initiated in 1925 at the University of Illinois under the direction of Coleman R. Griffith. The work completed at this laboratory from 1925-1932 brought attention to the psychology of sport in North America.

Research which has focused on the history of sport psychology has provided a description of activities that occurred at the University of Illinois Athletic Research Laboratory (Gould & Pick, 1995; Green, 2009). Specifically, Griffith and his students completed research related to the learning of skills and personality in sport (Gould & Pick, 1995). In addition, many of the investigations concentrated on the sports of football and basketball (Green, 2009). Throughout the years of guiding the laboratory, Griffith produced many manuscripts which described the

research findings (Gould & Pick, 1995; Green, 2009). Additionally, numerous graduate students completed investigations under Griffith's guidance. Specifically, Weiss and Gill (2005) recognized the seminal work of Chester O. Jackson, a student of Griffith's, who was the first to publish research in the *Research Quarterly* related to emotion. Although Griffith and his students made significant contributions to the advancement of the field of sport psychology, the Athletic Research Laboratory was closed in 1932[1] and subsequently Griffith became the director for the Bureau of Institutional Research at the University of Illinois (Green, 2009).

After the closing of the Athletic Research Laboratory at the University of Illinois, few details exist regarding laboratories that investigated the psychology of sport between 1932-1965. Despite, scarce information about laboratories that focused on sport psychology research during this era, overviews of the field suggested that during the time period between 1950 and 1980 the sport psychology discipline evolved into a more established field (Landers, 1995). For instance, Warren Johnson, Artur Slatter-Hammel, Alfred W. Hubbard, and Franklin Henry were influential scholars who conducted sport psychology related investigations throughout this time period (Landers, 1995). Specifically, Landers (1995) mentioned Johnson's (1960) influential text *Science and Medicine in Exercise and Sports*, which summarized the research literature in the sport and exercise sciences. One section of this text was related to the psychological aspects of sport. Within this book, Alfred W. Hubbard, a chapter author, was listed as the Supervisor of the Sport Psychology Laboratory at the University of Illinois.

In addition to Landers' (1995) portrayal of the field of sport psychology, Vealey (2006) also described the progression of the discipline during the 1950s and 1960s. Specifically, Vealey explained that graduate students who became influential sport psychology professionals matriculated to the University of Illinois during the mid to late 1960s. Vealey (2006) also noted

the availability of brochures which advertised the sport psychology laboratory and may have influenced graduate students to attend the University of Illinois. Thus, given the fact that Alfred W. Hubbard was the Supervisor of the Sport Psychology Laboratory and students were entering the university with an interest in sport psychology during the 1960s, inquiry should be undertaken to fill this notable gap in the sport psychology literature. Therefore, questions of interest are after the subsequent closing of the Athletics Research Laboratory in 1932, when and how was the sport psychology laboratory at the University of Illinois reinstituted and what was Alfred W. Hubbard's role in supervising the laboratory?

Thus, the main purposes of this manuscript are to explain how the sport psychology laboratory at the University of Illinois was re-instituted, provide a description of the activities of the sport psychology laboratory between1950 and 1969, and to specifically present a timeline of sport psychology related events at the University of Illinois. First, background information will be provided about Alfred W. Hubbard. This will then be followed by an explanation of why the idea to reinstitute the sport psychology laboratory may have been developed. Next, a description of how the sport psychology laboratory was re-instituted is provided. Specifically the roles of Coleman Griffith, Seward Staley, and Alfred Hubbard in restarting the laboratory are described. An overview of the activities of the sport psychology laboratory between 1950 and 1959 will follow. Specifically, the influence of Coleman Griffith's work on early research conducted at the laboratory is detailed. Also, information is provided on research that was related to the application of psychology to sport performance. This is then followed by describing the research, activities, and contributions of the sport psychology laboratory between 1960-1969. The contributions of various women and doctoral students to the field of sport psychology are highlighted.

A discussion of Alfred W. Hubbard's ten year plan for the advancement of sport psychology during the 1970s at the University of Illinois is presented next. Lastly, a summary and explanation of how the important sport psychology events at the University of Illinois laid the groundwork for the future application of psychology applied to sport are provided.

Who was Alfred W. Hubbard?

Alfred W. Hubbard was a professor of physical education who helped re-institute the sport psychology laboratory at the University of Illinois (Hubbard, 1962a). Hubbard, born in Canton, Ohio on December 25, 1907, (Noteworthy People in the Profession, 1962) completed his undergraduate degree in English at Oberlin College, in Oberlin, Ohio in 1929. After finishing his undergraduate studies, he spent three years in graduate school studying the history of art and archeology at Oberlin and Princeton (Hubbard, 1962a). After surveying these subjects, Hubbard determined his interest was in physical education and for that reason returned to Oberlin to attain a master's degree in that area. While working on this degree, Hubbard also became drawn to the study of psychology. In order to acquire knowledge of this field, he enrolled in numerous psychology courses offered at Oberlin College and additionally worked as an assistant in Raymond Herbert Stetson's[2] psychological laboratory (Hubbard, 1962a).

Hubbard completed a master's degree in 1937 at Oberlin College. His thesis was titled, *The relation between contractions of representative muscles of the lower limb and the movements of locomotion: An experimental study, with a discussion of trained and untrained runners, and with comments on the training of runners***.** In addition to the completion of his master's thesis, Hubbard published, *An experimental analysis of human locomotion***,** in the *American Journal of Physiology* (Hubbard & Stetson, 1938). Also, in 1939 Hubbard published two additional articles including, *An experimental analysis of running and of certain differences between trained and*

untrained runners (Hubbard, 1939a) and *"Muscular force in reciprocal movements"* in the *Journal of General Psychology* (Hubbard, 1939b).

While completing his graduate degree in physical education, Hubbard was a teacher and coach at St. Johnsbury Academy in Oregon between 1934 and 1939. From 1939 to 1947 Hubbard was an instructor at Reed College and also served in the military (Hubbard, 1962a). In 1947, Hubbard decided to enroll in the physical education doctoral program at the University of Illinois and was a research assistant in the physical fitness laboratory under the supervision of Thomas K. Cureton (Noteworthy People in the Profession, 1962). Although Cureton's main academic focus was related to the field of physical fitness, the fact that Hubbard decided to study under Cureton's supervision is not surprising. Cureton also was interested in the psychology of sport and exercise. For example, Cureton previously published two manuscripts on the psychology of teaching swimming (Cureton, 1931a; Cureton, 1931b) and was also an influential leader in the study of the psychology of exercise (Landers, 1995). Additionally, Cureton supervised masters' theses and dissertations related to the psychology of sport and exercise (Cureton, 1953).

Hubbard (1962a) provided three main reasons for pursuing a doctoral degree at the University of Illinois. Specifically, working in the Physical Fitness Research Laboratory, teaching physical education courses, and obtaining a doctoral degree were primary reasons for attending (Hubbard, 1962a). In corresponding with his parents, Hubbard recounted meeting Thomas K. Cureton prior to making the decision to enroll in the University of Illinois doctoral program **(**Hubbard, ca. 1947). Hubbard explained that Cureton expressed that there was opportunity to conduct sport and physical education research and that the assistant to the president of the University of Illinois supported Cureton's work. Hubbard (ca. 1947) wrote, "He

apparently has the confidence and backing of the assistant to the President of the University of Illinois who is very much interested in the work."[3] Further, Hubbard (ca. 1947) stated, "He said his biggest problem was to find people in physical education with ability in research and some experience in it, especially along the lines that I followed." Hence, perhaps conversations with Coleman Griffith inspired Cureton to recruit an individual with a background in psychology to complete a doctorate in physical education and then remain at the University of Illinois to re-institute the sport psychology laboratory which Griffith had started. For instance, Cureton (1949) wrote: "Griffith began stimulating work in this area, but the research has lagged behind the importance of such work" (p. 39).

In 1950, Hubbard completed his dissertation titled, *The upper limits of slow movements and the lower limits of ballistic movements* (Hubbard, 1950). After completing his doctoral work, Hubbard remained at the University of Illinois to oversee the sport psychology laboratory. From 1951 onward, Hubbard directed the Sport Psychology Laboratory[4] at the University of Illinois until his retirement.

A Rationale for the Reinstitution of the Sport Psychology Laboratory

Although the Athletic Research Laboratory supervised by Coleman Griffith closed in 1932, the idea to re-institute a sport psychology laboratory on the University of Illinois campus resurfaced in early 1950 (Hubbard, 1951). Seward Staley, the Director of the School of Physical Education asked Hubbard to prepare a proposal for a new sport psychology laboratory (Hubbard, 1951). A question of interest is what led to the idea to re-institute the sport psychology laboratory?

One hypothesis that seems tenable is that Cureton, Staley, and Griffith collaborated to develop the vision of the reemergence of the sport psychology laboratory. For instance, Coleman Griffith entered university administration in the late 1930s and was appointed provost of the University of Illinois in September of 1944 (Green, 2009). Additionally, Seward Staley became the Director of the School of Physical Education in 1937 and occupied that position until 1957. Prior to entering administrative positions, Staley and Griffith worked together as part of the faculty of the athletic coaching school during the 1920s. Also, Griffith and Staley served on committees together for the University of Illinois Athletic Association. In fact, on one committee in 1939, both Coleman Griffith and Seward Staley were involved in reviewing the salary of football coach Bob Zuppke (Brichford, 2008). In addition, approximately, two years after Griffith became provost, Staley proceeded to arrange conferences for graduate program directors which concerned the amelioration of graduate education in the field of physical education (Berryman, 1996). Shortly thereafter in 1948, a doctor of philosophy degree in physical education was approved to be offered at the University of Illinois (University of Illinois, 1948).

According to Berryman (1996), by 1950, 16 universities in the United States had instituted physical education laboratories principally centered on fitness and physiology of exercise. Specifically, other universities also offered graduate students in physical education an opportunity to complete laboratory research. These institutions included Springfield College, George Williams College, New York University, and the University of California Los Angeles (Van Dalen, Mitchell, & Bennett, 1953). However, it does not appear that these universities offered an opportunity to conduct sport psychology laboratory experiments. Thus, the University

of Illinois was not competing against many schools who were offering graduate students the opportunity to conduct sport science research.

A reasonable assumption can be made that Staley and Griffith were both knowledgeable of the dearth of research laboratories in physical education that specifically studied sport psychology. Consequently, with Griffith's previous familiarity in directing a sport psychology laboratory, Staley may have been influenced by Griffith to request that Hubbard propose the initiation of a sport psychology laboratory. Acknowledgement of Griffith's and Staley's support for the development of the study of the sport and exercise sciences at the University of Illinois was provided by Cureton (1969). He stated:

> The emphasis we have put on the scientific aspects of exercise and sports would not have been possible without the insight and interest of men like Seward Staley, Coleman Griffith, Dean Carmichael, and former President Stoddard, who helped us get this upper-level training under way. (p. 12).

Similarly, the development of the idea to reinstitute the sport psychology laboratory may be related to various political and economic conditions extant in the late 1940s and early 1950s. For example, Green and Benjamin (2009) described economic influences present in academia during this time period. Specifically, more veterans were enrolling in postsecondary education which caused enrollment to increase at colleges and universities. For instance the years after World War II between 1945 and 1965 within the United States were a time of increased enrollment within higher education (University of Illinois, 2012a). During this era the United States became one of the wealthiest nations in the world (University of Illinois, 2012a). Additionally, before the end of World War II, the United States Congress passed the GI Bill of Rights which covered most of a veteran's higher education tuition (University of Illinois, 2012a). Also, during the post-

war era the birth rate had risen to an all-time high in the United States (Kerr, 2001). The impact of the GI Bill of rights, the wealth and prosperity created, and the increased birth rate in the United States led to expanded higher education enrollments throughout the United States. For instance, at the end of World War II there were approximately 1.6 million students enrolled in higher education in the United States. Shortly after the end of World War II, higher education enrollments almost doubled to approximately 2.3 million students by 1947 (Mumper, Gladieux, King, & Corrigan, 2011). This enormous growth led to major changes related to curriculum and instruction on college and university campuses (Mumper, Gladieux, King, & Corrigan, 2011). Specifically, on the University of Illinois campus, the graduate program in physical education grew a great deal during this time period. For instance in 1944, six students earned masters or advanced degree certificates from the school of physical education at the University of Illinois (University of Illinois, 2012b). However, by 1951, the year of the re-institution of the sport psychology laboratory, 41 students had earned master's degrees or advanced certificates (University of Illinois, 2012b).

Thus, the field of physical education was influenced by the influx of students directly after World War II. Because of the increase of students entering higher education, the physical education profession needed to prepare more individuals to obtain graduate degrees. Graduate education and research in physical education had been focused on the physiological aspects of fitness and exercise (Cureton, 1949). Perhaps knowing that a need existed to train professionals to teach physical education at the higher education level throughout the United States, and that few graduate programs offered alternative options, the University of Illinois administration realized that reinstituting the sports psychology laboratory provided more graduate level research opportunities for those wanting to teach physical education at the college and university level.

Concurrently as enrollment increased greatly and there was a need to train professionals to teach at the college level, research began to be viewed as an extremely important component of higher education institutions throughout the United States (Green & Benjamin, 2009a). Thus, as both a need arose for research to be conducted, and increase in the demand for more individuals to be trained to teach in higher education occurred, the United States government began to provide increased research funding for universities (Green & Benjamin, 2009a). Therefore, politically and economically, conditions appeared favorable for the University of Illinois to add a second research laboratory within the School of Physical Education.

Additionally, another possible explanation which may have supported the idea to re-institute the sport psychology laboratory was the importance of trying to help Olympians continue to demonstrate a high level of athletic prowess. For instance, Green and Benjamin (2009a) explained that during the 1948 Olympics, the Soviet Union did not win any medals. Yet, by 1952, they had won the second most medals at the Olympic Games. On account of the Soviet Union's successful athletic accomplishments, Green and Benjamin (2009a) proposed the notion that physical education professionals may have wanted to establish research agendas to demonstrate how sport science research could be utilized to help athletes enhance performance and obtain public approval. Hence, the idea to develop a sport psychology laboratory may have related to the necessity of illustrating how research at the University of Illinois School of Physical Education laboratories helped athletes improve performance and therefore led to physical education professionals gaining support from both professionals in academia and the general public.

Unquestionably, the hypotheses that administrators and faculty may have desired to publicize their research in sport psychology as a way to demonstrate that they were helping the

Olympic movement is quite plausible. For example, at the end of the 1940s Cureton was appointed to the Medical and Nursing subcommittee of the United State Olympic Committee (USOC); (Berryman, 1996). Cureton's involvement and appreciation for the USOC and the Olympic movement may have influenced the University of Illinois School of Physical Education to become actively involved in completing research related to the study of Olympic athletes. Therefore, in conjunction with the initiation of doctoral education at the University of Illinois in physical education, Cureton completed experimental investigations of Olympic athletes which was documented in Cureton's (1951) text, *Physical Fitness of Champion Athletes*. Interestingly, Hubbard assisted with these research studies (Cureton, 1951). Specifically, one psychological variable studied in these experiments was reaction time. In addition, Heusner (1953, as cited in Cureton, Barry, & Cureton, 1964) under Cureton's supervision studied the personality traits of former Olympic champions and suggested that the findings revealed that previous champion athletes appeared to have lower anxiety and were more extroverted than the general population.

The Reinstitution of the Sport Psychology Laboratory at the University of Illinois in 1951

The Process Leading to the Reinstitution of the Laboratory

As the idea for the development of a sport psychology laboratory gained acceptance, Hubbard provided Staley with an overview of the present status of sport psychology at the University of Illinois (Hubbard, 1950a). Specifically, he described the PE 407 Sport Psychology course and acknowledged that this class was common in graduate physical education curriculum. In commenting about the course, Hubbard stated, "In general, they are designed to acquaint the student with application of psychological findings and concepts to physical education and sports" (Hubbard, 1950a). Hubbard also explained that most of the focus on sport psychology at that

time at the University of Illinois occurred in the PE 407 Sport Psychology class. Students in this course were assigned course readings from experimental psychology textbooks by Woodworth and Andrews (Hubbard, 1951). Hubbard stated that, "The course has emphasized getting back to original sources, the evaluation and interpretation of research in the area or related to the area and the experimental approach to psychological problems in relation to sports." (Hubbard, 1951).

In addition to providing information to Staley about course work available in sport psychology, Hubbard rendered his opinion about existing facilities. Considering the facilities inadequate, Hubbard wrote to Staley, "Controlled observation requires laboratory facilities which are not provided at the University of Illinois at the present time" (Hubbard, 1950a). Upgraded facilities were important to Hubbard since he believed that using experimental psychology to study sport and physical education would assist students in their comprehension of how psychological methods could be applied to athletics (Hubbard, 1950a). In proposing a sport psychology laboratory, Hubbard concluded that a need existed and that this facility would not duplicate existing research centers at the University of Illinois (Hubbard, 1950a). Hence, space in Huff Gymnasium was requested with an estimated cost for the development of the laboratory at approximately $30,000-$35,000 (Hubbard, 1950a).

After receiving the proposal for the sport psychology laboratory, Staley requested facility space from Coleman Griffith (Staley, 1950). In communication with the provost, Staley asked for funding to develop a laboratory facility in the southwest corner of Huff Gymnasium (Staley, 1950). Subsequent to the authorization of physical space, Staley asked Griffith for funding to purchase laboratory equipment (Staley, 1952a). This inquiry was based on Hubbard's initial request (Hubbard, 1952). In correspondence with Griffith, Staley referred to various

conversations in which they discussed equipment for the new laboratory. Specifically, Staley (1952a) wrote to Griffith:

> Dear Provost Griffith: You will recall that during the month of July I discussed with you the matter of equipping the new laboratory facility constructed on the third floor of Huff Gymnasium, pointing out that we had no funds to provide equipment. I mentioned the fact that it would cost in the neighborhood of $1,000 to provide the very basic essentials. You advised me that you could assist in this matter.

The University of Illinois announced the reinstitution of research work in sport psychology in the *Biennenial Report of the Office of the Superintendent of Public Instruction for the State of Illinois*. In this report Staley (1952b) stated, "A modest program of research in the field of sports psychology was re-instituted in September, 1951. This program was originally carried on during 1926-1931[5]" (p. 68). See table one for a timeline which shows the sequence of events that led to the reinstitution of the sport psychology laboratory.

After the reinstitution of the laboratory, Griffith remained supportive and viewed Hubbard as a resource for sport psychology information. For instance, while provost of the University of Illinois, Griffith received a letter from P. H. Hylton, a reference librarian, asking him for assistance on compiling references related to the psychology of coaching (Hylton, 1952). Griffith (1952) in forwarding the request to Hubbard wrote:

> Professor Hubbard: Here is a copy of a letter I have just had from Mr. P. H. Hylton who is librarian at Carthage College. I have written to Mr. Hylton to say that perhaps you would be willing to help him. I hope you can do this.

Hylton was very appreciative of the sport psychology information that Hubbard provided and Hylton asked Hubbard to thank Coleman Griffith for his assistance (Hylton, 1953). Hylton

stated, “I am writing to thank you for your kindness in sending me material on “Psychology of Coaching”. Further he stated, “Kindly convey to Dr. Griffith my sincere thanks for his assistance (Hylton, 1953).

Activities of the University of Illinois Sport Psychology Laboratory (1951-1959)

Documentation of Sport Psychology Laboratory Activities in the 1950s

In order to record the activities of the sport psychology laboratory, Hubbard submitted annual reports to the Director of the School of Physical Education.[6] These documents summarized research, publications, presentations, and the PE 407 Sport Psychology course enrollment. The first sport psychology report was sent to Seward Staley in June of 1951 (Hubbard, 1951). This document, titled, *Report on Sports Psychology Research*, detailed three studies conducted by University of Illinois graduate students under the direction of Hubbard. The investigations concerned practice methods in gymnastics efficiency, foot position in relation to basketball free throw performance and the effects of fatigue in relation to basketball free throw shooting (Hubbard, 1951). Additionally, Hubbard reported that a new line of research was initiated which focused on the exploration of vision and perception in sport.

In addition to the sport psychology reports written by Hubbard, the initial activities of the sport psychology laboratory were documented in various publications. These included the *Biennial Report of the Office of the Superintendent of Public Instruction of the State of Illinois* and the *University of Illinois Abstracts of Graduate Theses in Physical Education* (Cureton, 1953; 1954). In the *1952-1954 Biennial Report*, Staley (1954) wrote:

> The southeast corner of Huff Gymnasium was partially reconstructed so as to provide more adequate facilities for the Sports Psychology Laboratory – Fall of 1952. Three

> students prepared theses in this area the first year (1952-1953); four the second year (p. 138).

Additionally, Cureton (1953) stated, "The Sports Psychology Laboratory is new and no theses show from that laboratory until the last three years" (p. 3). Also, Cureton (1954) wrote, "Dr. Alfred W. Hubbard directed several theses related to the psychology of sports" (p. 4). Cureton (1954) provided an overview of these theses which were written by Buckellew (1954), Robertson (1954), Gephart (1954), and Leonhardt (1954).

Coleman Griffith's Influence on Studies Conducted During the 1950s

As the study of sport psychology at the University of Illinois proceeded throughout the early 1950s, topics investigated were similar to those examined by Griffith in the 1920s and 1930s in the Athletic Research Laboratory. For example, analogous topics explored in the early 1950s included blindfolded practice, peripheral vision, blinking, and basketball free throw shooting. Initial laboratory studies were conducted by Wilkinson (1951) and Klitzing (1951). The influence of Griffith's research is apparent in both the Wilkinson and Klitzing studies. To illustrate, the first study Wilkinson cited in his review of literature was the Griffith (1930b) investigation. Specifically, Wilkinson stated, "C. R. Griffith made a study on free throw shooting using as his subjects nine freshman varsity squad men of the University of Illinois (p. 6)." Furthermore, Wilkinson referenced two additional research studies, Griffith (1930a) and Griffith (1930c). Klitzing (1951) also specifically referred to the Griffith (1930c) research.

Blindfolded practice was a further area of sport psychology inquiry at the University of Illinois in the early 1950s. Griffith initially conducted investigations on blindfolded practice to enhance learning in basketball (Griffith, 1930c) and golf (Griffith, 1931). To continue this line of research, Gephart[7] (1954) completed a master's thesis titled, "*The Relative Effect of Blindfold,*

Sighted, and No Practice on Free Throw Accuracy". Three pages of Gephart's (1954) literature review were focused on Griffith's previous studies on basketball free throw shooting. Specifically, Gephart (1954) stated:

> Preliminary study of the scientific analysis of free throw shooting was done by Coleman Griffith. He reasoned that blindfold practice required concentration on the feel of the shot and that this type of practice would be very beneficial for developing the proper shot. He pointed out that errors shooting free throws could be broken down and measured in terms of errors in distance and errors in direction. (p. 9)

Another topic Griffith investigated in the Athletic Research Laboratory during the 1920s and 1930s was vision (Griffith, 1932). Just as Griffith had analyzed vision in athletics during the 1920s and 1930s, Hubbard was also interested in developing a line of research related to this topic. Hubbard's students Johnson (1952), Seng (1952), Buckellew (1954), and Gill (1955) conducted studies on vision in sport as part of the work of the sport psychology laboratory. Interestingly, Buckellew (1954) and Gill (1955) both referenced Coleman Griffith's book *Psychology and Athletics* in their review of related literature.

The Application of Psychology Applied to Sport

In analyzing the work completed by Hubbard's students in the sport psychology laboratory, many were very appreciative of the guidance and assistance Hubbard provided and also believed that the sport psychology course provided a valuable learning experience. For instance, McKinnon (1960) surveyed 52 students who had completed the PE 407 sport psychology class during the 1950s. Of the 52 that had taken the course 40 students had not had this type of course work at the undergraduate level. Additionally, a majority of the students viewed the PE 407 course work as having relevance to their future employment (McKinnon, 1960).

A reason that students may have believed that the PE 407 sport psychology course was of value was that in most topics within the course, discussion of how the material could be applied to physical education and coaching was presented (Hubbard, ca. 1950b). Examples of applied material that were covered within the course included leadership, motivation, communication, and emotional control. Additionally, subjects related to the development of character and the influence of physical activity on mental health were discussed.

In addition to the discussion of how psychology could be applied to sport and physical activity within the PE 407 Sport Psychology course, students began to research the application of psychology to sport. For example, such applied topics that began to be studied in the sport psychology laboratory in the 1950s included mental practice (Schlosser, 1952), hypnosis (Hottinger, 1958), and levels of aspiration (goal setting); (Leonhardt, 1954). Studies investigating applied topics were also conducted during the 1960s (e.g. Day, 1965; Williams, 1961).

Interestingly, students studying in the sport psychology laboratory during the 1950s were becoming aware of how psychology was beginning to be applied to enhance athletic performance. Hottinger (1958) documented the work of David F. Tracy who provided mental skills training to the St. Louis Browns in the 1950s[8]. Hottinger (1958) wrote: "Tracy used hypnosis and taught autosuggestion to several members of the St. Louis Browns in 1949. By many, Tracy's experiment was considered a failure because the Browns failed to win the pennant. Tracy, however, was successful in enhancing the athletic performance of several baseball players." (p. 18). Hottinger (1958) also described how an Olympic champion, Parry O'Brien, had been reported to use psychological skills such as positive thinking to enhance performance.

In addition to Hottinger's discussion of athletes using hypnosis and positive thinking to enhance performance, Schlosser (1952) described how athletes used their imagination to visualize performing athletic skills. He suggested that coaches often thought about how this technique influenced athletic performance. Schlosser believed that his research would help to provide scientific evidence which would support the use of mental practice in sport.

In addition to hypnosis, autosuggestion, and mental practice being discussed in the research work of the sport psychology laboratory, level of aspiration or goals were also investigated in the sport psychology research conducted. Leonhardt (1954) completed an applied research study analyzing how a gymnast's goals or levels of aspiration influenced their performance in various gymnastics events throughout the course of the season. Results of Leonhardt's study revealed that competitive gymnasts kept their performance goals at high levels during the season. [9]

Research, Activities, and Contributions of the University of Illinois Sport Psychology Laboratory (1960-1969)

Throughout the 1960s, Hubbard continued to generate reports documenting the activities of the University of Illinois Sport Psychology Laboratory (e.g., Hubbard, 1961; 1962b; 1963a; 1965; ca. 1966; 1968)[10]. These documents illustrated investigations carried out by graduate students as well as publications and presentations Hubbard completed. Additionally, teaching and enrollment in the PE 407 sport psychology course was detailed.

Doctoral Student's Contributions to the Field of Sport Psychology

Commencing with sport psychology laboratory reports in the 1960s, Hubbard provided information about the work of his first doctoral advisees. These students included Richard Berger (1960), Edward Bernauer (1963), Florence Cullen (1964), Otis Karr (1964), Karl Stoedefalke (1964), and Phyllis Day (1965). The first doctoral student to complete a dissertation

under Hubbard's supervision[11] was Richard A. Berger (Berger, 1960). Despite the fact that Berger focused a majority of his career on strength and conditioning research, he was clearly interested in sport psychology. As an illustration, after finishing his doctoral education, he completed an additional master's degree in psychology (Berger, 1969) and also published studies on the academic achievement (Davis & Berger, 1973) and personality of athletes (Berger & Littlefield, 1969). Karl Stoedefalke became a professor and administrator at Pennsylvania State University. In an administrative role, Stoedefalke was the chairman of the College of Health, Physical Education, and Recreation curriculum committee which approved courses that would become part of one of the first graduate programs in sport psychology under the leadership of Dorothy Harris (Stoedefalke, 1970). Otis K. Karr began his master's degree work in 1954 and was one of the first research assistants for the Sport Psychology Laboratory (Karr, 1964). After the completion of his doctoral work in 1964, Karr in collaboration with Hubbard presented his research at the first International Society of Sport Psychology Congress in 1965 (Hubbard & Karr, 1965). Additionally, Phyllis Day completed her dissertation on the use of hypnosis on the performance of a motor skill. Gill (1995) cited Day's contributions to the field in her article titled, *Women's Place in Sport Psychology*. Day was active in the early 1970s at the North American Society for the Psychology of Sport and Physical Activity (NASPSPA) conference. Specifically, she was on a panel at the 1971 NASPSPA conference titled, *Women in sport: Needed research and future directions* (Gill, 1995).

The Continued Influence of Coleman Griffith During the 1960s

Administratively, an interesting element of sport psychology at the University of Illinois during the 1960s was that the leaders of physical education were former students of Coleman Griffith. For instance, the chair for the Department of Physical Education for Men was Chester

O. Jackson (University of Illinois, 2007) who completed his master's thesis under Coleman Griffith's supervision (Kroll & Lewis, 1970). Jackson contributed to student success by serving on doctoral committees for Richard Berger, Phyllis Day, Otis Karr, and Karl Stoedefalke. Also, Hubbard submitted annual sport psychology laboratory reports to C. O. Jackson for review. Additionally, throughout this time period, King J. McCristal was the Dean of the College of Physical Education from 1961-1973 (University of Illinois, 2007). McCristal's master's thesis was also supervised by Coleman Griffith (Kroll & Lewis, 1970). In the 1960s McCristal remained involved in sport psychology through presentations at conferences. For instance, McCristal provided an introductory presentation at the University of Iowa's Symposium for Motor Learning and Sport Psychology in October of 1969 (Smith, 1970).

Contributions of Women to the Development of Sport Psychology

Another aspect of the work of the sport psychology laboratory during the 1960s that is important to acknowledge is the involvement of women in teaching and research. For instance, Gill (1995) has recently encouraged researchers to better understand the contribution that women have made to the development of the field of sport psychology. Just as female researchers such as Minnie Giesecke (Giesecke, 1931) completed studies in the University of Illinois Athletic Research Laboratory (University of Illinois, 1930), various women completed thesis and dissertation research as part of the sport psychology research program under the supervision of Alfred Hubbard. These researchers included Alfreda Farina (1963), Frances Cullen (1964), Sherry Bovinet (1964), Phyllis Day (1965), Mary Slaughter (1968), and Helga Deutsch (1969). Additionally, Olive G. Young, a faculty member, was involved in the teaching of sport psychology. She taught the PE 407 Sport Psychology course in the Spring and Summer of 1965 (Hubbard, 1965; Hubbard, ca. 1966). In addition, Laura Huelster served on doctoral committees

for students completing dissertations as part of the sport psychology laboratory research program including the committees for Frances Cullen and Phyllis Day.

Contributions of Students and Planning for the Future

Continuing throughout the 1960s numerous faculty and administrators supported students who completed research in the sport psychology laboratory. These investigations were summarized by Hubbard who stated, "My past and current advisees have made extensive use of Rooms 300 and 301 and much research has emanated from the sport psychology laboratory area." (Hubbard, ca. 1963). Furthermore, as the field of sport psychology expanded worldwide Hubbard discussed the participation of University of Illinois students and faculty at international conferences. Hubbard (1965) reported his attendance at the First International Congress on Sport Psychology. Specifically, he stated: "I participated in the First International Congress on Psychology of Sport in Rome on 19-24 April. This involved preparation and presentation of three papers which will appear in the proceedings."

As the late 1960s commenced, students and faculty affiliated with the University of Illinois Sport Psychology Laboratory remained productive. In particular, Hubbard (1968) documented the work of graduate students that would lead the continued development of sport psychology both nationally and internationally throughout the next four decades. Specifically, Hubbard explained that graduate students were utilizing the sport psychology laboratory to complete doctoral dissertation research, independent research, and social psychology and psychology course projects.

As the 1970s approached, Hubbard was cognizant of the emergence of sport psychology in the United States and throughout the world (Hubbard, 1969). Evidence of this awareness is found in his Hubbard's response to Rollin G. Wright's (the Department Chair of Physical

Education) request to prepare a ten year plan (Wright, 1969) for sport psychology at the University of Illinois. Specifically, in his written response to Wright, Hubbard stressed that sport psychology was expanding as evidenced by recent international congresses in Rome (1965) and Washington, D. C. (1968). Moreover, Hubbard believed that sport psychology research from the University of Illinois was making an impact (Hubbard, 1969).

In addition to discussing the growth of sport psychology throughout the world, Hubbard predicted continued and increased graduate student interest in sport psychology at the University of Illinois (Hubbard, 1969). Specifically, Hubbard estimated that the number of graduate students enrolling in the sport psychology program would double or even triple by the completion of the 1970s. The forecast for expansion of sport psychology at the University of Illinois throughout this decade was accurate. This is substantiated by a statement written in the 25th anniversary text for the College of Applied Studies at the University of Illinois (Trekell, 1982). Specifically, Trekell (1982) stated: "The graduate program has expanded, building from recognized strength in the bioscientific aspects to encompass strong programs in the Social Science of Sport (Psychology and Sociology)…" (p. 15). Additionally, Salmela (1981) wrote, "The University of Illinois at Champaign, ranked with Penn State as the premium SP [Sport Psychology] program in the country. Again tradition is on their side, since Coleman R. Griffith set up the SP [Sport Psychology] program at the Athletic Research Laboratory at the University of Illinois in the 1920s" (pp. 120-121).

Summary and Conclusions

The purpose of the present section is to provide a conclusion in a clear manner. Thus, the sequence of events that occurred have been placed into a cohesive timeline. Hence, this section of the manuscript documents the beginning of sport psychology at the University of Illinois in

the 1920s, the reinstitution of the sport psychology laboratory in the 1950s, and finally the growth and expansion of sport psychology at the University of Illinois during the 1970s. See Table 1 for a listing of the main events that occurred.

The field of sport psychology began to be systematically studied in the United States when Coleman Griffith developed the first sport psychology laboratory at the University of Illinois in 1925.[12] Much success related to the study of the psychology of sport at the University of Illinois occurred, although only for a short period of time. In 1932, the athletic research laboratory at the University of Illinois closed, and in the years following few laboratories in the United States continued to systematically investigate the psychology of sport. In the years subsequent to the closing of the laboratory, Coleman Griffith entered administration and eventually became the Provost of the University of Illinois in 1944. Concurrently, Thomas K. Cureton joined the physical education faculty at the University of Illinois and started the Physical Fitness Research Laboratory during the 1940s. Realizing that the study of sport was multidimensional, and that there was a lack of laboratories in the United States focused on the psychological aspects of sport, the physical education administration at the University of Illinois encouraged Alfred W. Hubbard to prepare a proposal to develop a sport psychology laboratory. With the support of the Director of the School of Physical Education, Seward Staley, and Provost Coleman Griffith, the sport psychology laboratory at the University of Illinois was re-instituted in September of 1951. Much research was conducted as part of the sport psychology laboratory program throughout the 1950s and 1960s. An increasing amount of students with an interest in sport psychology began to complete doctoral work at the University of Illinois.

Sport Psychology at the University of Illinois began to flourish in the 1960s as various doctoral students completed their education. In 1968 under the direction of Michael Ellis the

Motor Performance and Play Research Laboratory was initiated at the University of Illinois. This center would become the main laboratory for sport psychology related research at the University of Illinois during the late 1960s and early 1970s. Rainer Martens and Daniel Landers completed a plethora of studies in this laboratory in the late 1960s (Ellis, 1970). The growth of sport psychology research and course work at the University of Illinois would lead to the development of a formal graduate program which would become recognized as one of the top programs in the United States (Salmela, 1981).

Undoubtedly, the influence of Coleman Griffith, Seward Staley, Thomas Cureton, and Alfred Hubbard was an important aspect in the development of sport psychology graduate education at the University of Illinois. Although the Sport Psychology Laboratory research program was not a formal sport psychology graduate degree, it provided students in the 1950s and 1960s an opportunity to obtain sport psychology knowledge through a physical education graduate program.

These seminal events related to the development of sport psychology at the University of Illinois can be viewed as having provided the groundwork for continuing to help maintain the focus and interest that faculty, administrators, and students had toward to the field of sport psychology. By reinstituting the Sport Psychology Laboratory in 1951, Griffith, Staley, Cureton, and Hubbard assured that this institution would continue to be a leader in the development of the discipline. Having a laboratory devoted to the study of sport psychology clearly brought students with an interest in this field to the University of Illinois. This is significant since many future leaders that helped develop the field of Sport Psychology during the 1970s and 1980s completed doctoral degrees from the University of Illinois. For instance, Rainer Martens, who would become a leader in applied sport psychology was drawn to the University of Illinois

because of a brochure he saw that advertised the sport psychology laboratory (Vealey, 2006). Additionally, Daniel Landers and Glyn Roberts initially started at the University of Illinois planning to study the philosophy and history of sport respectively, but changed their plans to focus on the psychology of sport (Vealey, 2006). Certainly, it would appear plausible that the existence of a sport psychology laboratory provided support from faculty and administrators to encourage these future leaders to pursue their agendas in developing the field of sport psychology. Although their focus was initially related to the social psychology of sport (Vealey, 2006), these individuals would become involved in the applied aspects of sport psychology during the 1970s and 1980s.

As a faculty member at the University of Illinois, Martens would continue to be influential to many graduate students studying sport psychology. Specifically, a leading professional in the field of applied sport psychology today, Daniel Gould heard Rainer Martens speak at a conference in 1971. Martens' presentation, which discussed how sport psychology could be applied to help coaches and athletes, inspired Gould and thus led him to attend the University of Illinois to study sport psychology at the doctoral level (Straub & Hinman, 1992).

Certainly, there are countless stories of how leaders in the psychology of sport at the University of Illinois influenced students to apply psychological skills to help athletes and coaches. Thus, the influence of the University of Illinois Sport Psychology Laboratory and other laboratories during this time period should continue to be studied. For example, little is known about the type of research or activities that were being conducted at similar laboratories under the supervision of Franklin Henry (University of California) and Buris Husman and Warren Johnson (University of Maryland). Additionally, future studies could focus on conducting oral interviews with various individuals who were master's and doctoral students at the University of

Illinois and completed research that was part of the sport psychology laboratory between 1950-1970. In addition, future scholars should analyze the sport psychology investigations that occurred in the Motor Performance and Play Laboratory and the development of the graduate program in sport psychology at the University of Illinois during the 1970s.

Table 1. The Development of Sport Psychology at the University of Illinois

Timeline of Events

YEAR	EVENT
1922	Griffith named to faculty advisory staff of Coach Bob Zuppke
1925	Athletic Research Laboratory is initiated
1932	Athletic Research Laboratory is closed
1937	Coleman Griffith enters administration at the University of Illinois
1937	Staley appointed Director of School of Physical Education at the University of Illinois
1940	Thomas K. Cureton joins the faculty of School of Physical Education
1943	Master's Degree Program in Physical Education started
1944	Coleman Griffith becomes Provost of the University of Illinois
1944	Physical Fitness Research Laboratory is started in the School of Physical Education at the University of Illinois
1947	Alfred W. Hubbard begins doctoral work at the University of Illinois under the Supervision of Thomas K. Cureton and is an assistant in the Physical Fitness Research Laboratory
1949	PE 407 Sport Psychology course first appears in the University of Illinois graduate catalog
1950	Hubbard completes doctoral education and remains at the University of Illinois as an Assistant Professor
1950	Seward Staley requests that Alfred W. Hubbard prepare a proposal to re-institute the Sport Psychology Laboratory at the University of Illinois
1950	Hubbard submits the sport psychology proposal and a formal request for facilities is made to provost Coleman Griffith
1951	The Sport Psychology Laboratory at the University of Illinois is reinstituted

1951	Hubbard produced his first report titled *Report on Sports Psychology Research*
1951	Wilkinson and Klitzing complete the first masters thesis research as part of the sport psychology laboratory program under the supervision of Alfred W. Hubbard
1952	The southeast corner of Huff Gymnasium is remodeled to provide facilities for the Sport Psychology Laboratory
1953	Cureton documents the work of the sport psychology laboratory in *University of Illinois Abstracts of Graduate Theses in Physical Education*
1955	Hubbard produces the first of twelve Sport Psychology Laboratory Reports documenting the research, presentations, and publications produced by the laboratory
1965	Hubbard and graduate students attend the first International Congress of Sport Psychology in Rome Italy
1968	Hubbard and graduate students attend the second International Congress of Sport Psychology in Washington, D. C.
1968	Hubbard issues a brief statement reporting that over 50 masters and doctoral students had completed research in the Sport Psychology Laboratory at the University of Illinois
1969	Hubbard develops a Ten Year Plan for Sport Psychology at the University of Illinois
1969	As senior researchers in the Motor Performance and Play Laboratory Rainer Martens and Daniel Landers begin to lead the development of sport psychology research and course work at the University of Illinois

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[1] According to Green (2009) there are two theories as to why the laboratory was closed. First one explanation was that financial issues related to the Great Depression led to a lack of funding to support the laboratory. Additionally, a rational that provided is that the program of research began to lose support from football coach Bob Zuppke. Hubbard (1969) also provided a reason for the closing of the Athletic Research Laboratory. Specifically he stated, "Coleman Griffith began studying the psychological aspects of sport in the 1920s, but the Athletic Association terminated the work when he began to move beyond the psychology 'applied' to sport phase." (p. 2)

[2] R.H. Stetson was a psychology professor and chair of the psychology department at Oberlin College. See http://www.oberlin.edu/archive/WWW_files/stetson_b.html for more information about R. H. Stetson.

[3] An assumption is made that Hubbard is referring to Coleman Griffith.

[4] Although the field is referred to today as "Sport" psychology. Hubbard referred to the field at the time as "Sports" psychology.

[5] Although this document listed the dates of the research occurring from 1926-1931, the laboratory was in existence from 1925-1932.

[6] Annual reports were requested by the Director of the School of Physical Education in order to document the activities of the laboratory and programs to the President's office.

[7] Gene Charles Gephart completed his masters thesis at the University of Illinois and then joined the Army. Gephart taught and coached at Astabula high school in Ashtabula Ohio. He coached basketball for 11 seasons and then retired from coaching and became the principal at Ashtabula High School (Hamilton, 2004).

[8] It should be noted that although Tracy claimed to enhance the performance of the baseball players, there is little scientific evidence to support his contentions. Also, very little is known about his academic background and training. Green (2011, p. 44) in critiquing the work of Tracy stated, "In 1950 the St. Louis Browns hired a hypnotist named David Tracy. The Browns didn't do any better as a result, but Tracy who was more showman than academic wrote a book about the experience"

[9]In addition to Leonhardt, other students were also interested in goals and levels of aspirations. Agnes M. Hooley, a doctoral student at the University of Wisconsin sent Coleman Griffith a letter asking him for input about the psychological concept of level of aspirations in coaching and athletics (Hooley, 1953). Griffith forwarded the letter to Hubbard, and asked Hubbard to respond to Hooley (Griffith, 1953). Hubbard responded with information about the topic to Hooley (Hubbard, 1953).

[10] Sport Psychology laboratory reports were not located for the years 1964, 1966, or 1967.

[11] Hubbard had however served as a member of dissertation committees before. For example, Hubbard served on Paul E. Meadows (1959) dissertation which was chaired by Coleman Griffith's former student C.O. Jackson.

[12] Griffith's laboratory is considered to be the first sport psychology laboratory in the United States. Schulte's laboratory that began in Germany in 1920 is considered to be the first sport psychology laboratory worldwide.