“Riding the Wave”: Transforming Sport and Exercise Psychology Within an Interdisciplinary Vision

Maureen R. Weiss

A metaphor of riding the wave is used as a means of envisioning the future of sport and exercise psychology given what we know about past and present waves in the field. First, I review the waves of the 1980s, 1990s, and 2000s to understand critical issues in the field and to evaluate the waves as smooth, choppy, or turbulent today. Second, Christina’s (1989) model that views basic and applied research as interdependent and reciprocal is used to situate sport and exercise psychology research. Third, discussion revolves around misperceptions of the term “applied sport psychology” as synonymous with performance enhancement, and a case is made for dropping the term “applied” to be more inclusive of all types of applied research that sport and exercise psychologists do. Fourth, integration among theory, research, and practice is featured as a central and recurring theme that must be sustained for the field to survive and thrive. Finally, I advocate for transforming sport and exercise psychology within an interdisciplinary vision over the coming years in an effort to elevate impact on scientific research and professional practice. This interdisciplinary vision, I believe, is the wave of the future for advancing knowledge, translating research to applications, and maximizing professional development of our students.

Jane Clark has referred to the last three years of Academy meetings as the trilogy of the past, present, and future of kinesiology as a discipline. She challenged us to envision how our fields, in my case sport and exercise psychology, will look in the next 10 years. Specifically, what are the challenges and significant scholarly questions facing us, and how do we see our area of research interconnected within the field and interconnected with other fields of inquiry? Sport and exercise psychology is the scientific study of human behavior in physical activity contexts, which include organized sport, recreational activities, formal exercise, physical education, dance, motor skill development programs, recess, and active transport (e.g., walking, biking). Whenever I use the term physical activity, I am referring to all of these contexts.

Given that my contribution rounds out the trilogy, I reviewed Robin Vealey’s (2006) historical review of the paradigm evolution (and revolution) in sport and exercise psychology and Penny McCullagh’s enticing look at defining the academic

The author (AAKPE Fellow #360) is with the School of Kinesiology and Tucker Center for Research on Girls & Women in Sport, College of Education and Human Development, University of Minnesota, Minneapolis, MN 55455. E-mail: mrweiss@umn.edu
core in our field (McCullagh & Wilson, 2007). I feel honored to be part of this trilogy team, as I highly respect Robin’s and Penny’s sustained commitment to scholarly and professional issues in our field. I also consulted commentaries on research trends and issues facing sport and exercise psychology by many of my colleagues to help me derive a vision for the future. Such a vision should strategically position us to address both scientific and socially relevant issues related to two questions: (a) How does participation in physical activity contribute to the social and psychological well-being of individuals? (b) How do social and psychological factors influence participation behavior in physical activity?

In the 1980s and 1990s when I was at the University of Oregon, countless numbers of students applied for admission to the graduate sport psychology program. When I would ask, “Why are you interested in sport psychology?” they all responded with “how cool” sport psychology would be to study and pursue as a career. One young man beamed with excitement as he boldly answered, “I want to ride the wave of sport psychology!” I was quite amused by his answer. As a native Californian, I intimately know that waves are diverse and dynamic, ever changing with the tides. What wave did he think he would be riding? Inside I knew exactly what he meant because performance enhancement with high-level athletes dominated media attention at the time, rather than exciting scientific achievements of this evolving field. What was most amusing to me was that this was certainly not the wave I was riding in sport psychology! Thus the metaphor of riding the wave seems appropriate for envisioning the future of sport and exercise psychology given what we know about past and present waves of the field.

Having studied philosophy of science, I learned that it is important to know about the past to understand the present and to envision the future. So I begin with a review of some emerging and recurring themes in sport and exercise psychology research—or how the waves have been characterized. In taking a historical perspective, we can identify which waves were smooth, choppy, or turbulent, and which ebb and flow over time. More important, what will be the wave of the future? I will propose that we transform the field within an interdisciplinary vision—one that goes beyond intradisciplinary collaborations to interdisciplinary partnerships that simultaneously contribute to the scientific knowledge base and address practical challenges to serve the greater good.¹

Waves of the 1980s, 1990s, and 2000s

I purposefully start with a classic article by Dan Landers in Journal of Sport Psychology in 1983, “Whatever Happened to Theory Testing in Sport Psychology?” I consider this narrative to be an incisive and thoughtful analysis of where we have been and where we should be going to make an impact on the scientific knowledge base. Landers acknowledged how sport psychology had progressed as a field over the previous two decades but also argued compellingly that theory testing had not kept pace with applied research and dissemination. He maintained that a balance of theoretical, applied, and dissemination aspects is essential to advance the field at all levels. Landers identified several desired research directions in an effort to achieve this balance. I mention just a few of these ideas—ones that revolve around methods, settings, and theories to lay the foundation for what waves existed and to offer a means of comparison with present trends.
First, Landers (1983) encouraged sport psychology researchers to become less method oriented and more problem oriented by relinquishing dependence on a single research method or setting. His recommendation was based on the predominance of laboratory studies in the 1960s that led to an overemphasis on descriptive studies in field settings in the 1970s. He outlined how programmatic research might include field studies, field experiments, and laboratory experiments at various stages of theory testing. Over the past 25 years since his publication, I believe this wave has been a smooth one for sport and exercise psychology. Field studies and laboratory and field experiments have all been generously used, as well as a multitude of quantitative and qualitative methods to answer research questions.

Trends in research settings and methodologies are substantiated by an exhaustive review of sport and exercise psychology research by Weiss and Gill (2005) for the 75th anniversary issue of Research Quarterly for Exercise and Sport. They revealed a trend of diverse settings used in sport and exercise psychology research, such as youth development programs, older adults’ exercise programs, rehabilitation clinics, physical education classes, and competitive athletics. Although some individuals still conduct laboratory-based studies using sport-type tasks, field studies and field experiments abound in these contexts. Weiss and Gill also uncovered a diverse number of methods routinely used over the past 25 years, including questionnaires, experimental designs, model testing (e.g., structural equation modeling), qualitative methods (interviews, ethnographies), and mixed methodologies. Several of these methods have no doubt been made more accessible through technological advancements. In sum, Landers’s plea to be inclusive of research methods and contexts was heeded in the ensuing years of his publication.

Second, Landers (1983) urged researchers to determine the practical or meaningful significance of research findings that go beyond statistically significant differences between groups or relationships among variables. Early laboratory studies, for example in social facilitation, showed statistical differences between experimental groups but nevertheless featured small effect sizes that lent questionable generalizability to real-world physical activity settings. I would classify this wave as still a bit choppy. Today we routinely report effect size and other measures of strength of association to satisfy APA guidelines and reviewer requests. But authors often do not go beyond reporting a small effect size to comprehensively discuss the missing links in the research design or model they were testing that might add substantive explanation in outcome variables. It is not unusual in the social sciences to be limited by the number of variables that can be accommodated in a particular research design. Yet we can address such limitations by thoughtfully identifying the crucial variables and relationships for inclusion in subsequent theory testing. Given the capability for greater sophistication in research designs and statistical models, yesterday’s limitations can be minimized by today’s methodologies and computer technologies (but not at the expense of asking good research questions).

Third, Landers (1983) contended that strengthening theory-oriented research means that researchers must avoid premature commitment to a particular theory to address important research questions. Landers substantiated his discontent with researchers’ dependence on a particular theory by making an analogy to Dunnette’s (1966) label for this phenomenon, “the pets we keep.” Dunnette stated, “The theory . . . can be viewed as pets inherited by fledgling psychologists and kept and nurtured
by them, in loving kindness, protecting them from all possible harm due to the slings
and arrows and attacks from other psychologists who, in turn are keeping their own
menageries” (p. 344). Landers cited examples of studies in sport psychology that
set out to prove, rather than disprove, theories. Then when data fail to support a
theory, researchers second-guess their own methods rather than replicate the study
or offer suggestions for modifying theory. Landers concluded, “Until we adopt a
set to disprove and modify theories, sport psychology will remain theoretically
immature” (p. 143). I believe this issue continues to be one of the choppy or even
turbulent waves in sport psychology today.

Just before and just after publication of Landers’s (1983) article, a number of
theories emerged from educational, social, and developmental psychology related
to motivation in achievement contexts. These include self-determination theory
(Deci & Ryan, 1985), competence motivation theory (Harter, 1978), achievement
goal theory (Ames, 1992; Nicholls, 1989), expectancy-value theory (Eccles et al.,
1983), self-efficacy theory (Bandura, 1977), and attribution theory (Weiner, 1985).
Many of these theorists were invited to speak at NASPSPA and AAASP to share
their worldviews and lend their perspective on physical activity motivation. Sport
and exercise psychology researchers were inspired to conduct empirical investiga-
tions of how relevant these theories were to explaining motivation in the physical
domain. Along the way, allegiance to pet theories emerged and many of us are guilty.
Favoritism toward certain theories has led to an abundance of studies that come in
“waves” depending on what particular theory is in vogue, only to switch to another
theory when interest wanes from iterative studies or when another theory grabs the
spotlight in mainstream psychology. In addition, aligning with a particular theory
has led to debates in the literature about which is the best theory and even about
how constructs within the same theory are interpreted (e.g., Harwood, Hardy, &
Swain, 2000, 2001; Treasure et al., 2001). Although a certain amount of dialogue
is desirable for scientific growth, we should “ride a wave” of being inclusive by
identifying common features of multiple theories to advance scientific knowledge
and to guide practitioners in their efforts to maximize positive experiences.

If we consider self-determination, competence motivation, achievement goal,
and expectancy-value theories, for example, we find there are several common or
overlapping features. In fact, there are many more similarities than differences
among theoretical constructs and their interrelationships. Each of the four theories
overlap in their emphasis on determinants of motivated behavior—developing
competence, providing opportunity for autonomy or choice, promoting positive
adult and peer relationships, and maximizing enjoyment and minimizing anxiety.
These four features take into account theory and applied research to inform practice.
As a youth development researcher, I have integrated these commonalities among
motivation theories to inform coaches and parents at workshops sponsored by youth
sport organizations and in advising governing bodies about why youth stay involved
in or discontinue sport. At a time when our field is so central to concerns about
physical inactivity and health outcomes, integration of theories to identify common
or robust findings will be more useful and make more sense to practitioners than
to constrain ourselves to elements of one particular theory. The same points about
pet theories could be made for adult exercise behavior and self-perceptions, among
others. Rather than lock into a pet theory, we should be inclusive by considering
implications from multiple perspectives.
It is probably not surprising, given their collegial friendship, that Bob Christina (1989) wrote a companion paper to Dan Landers’s piece in a publication targeting future directions in exercise and sport science research. In “Whatever Happened to Applied Research in Motor Learning?” Christina identifies the opposite problem in motor learning to what Landers identified for sport psychology—that applied research has not kept pace with basic or theoretical research. He attributed this decline to the view that applied research is subordinate to and dependent on basic research. According to Christina, this view suppresses studies that seek solutions to practical problems and discounts the potential of applied research to build on the scientific knowledge base. To this end, Christina proposed a model depicting levels of research according to their relevance for finding solutions to practical problems (see Figure 1). I find his model to be highly relevant to sport and exercise psychology and a terrific bookend to Landers’s ideas. In fact, Christina stated that although his model was customized for motor learning research, the concepts are relevant for other disciplines within kinesiology because we all address theoretical and applied research and professional practice.

Christina (1987, 1989) specifically defined three levels of research. Basic research Level 1 refers to testing hypotheses in a laboratory setting using experimenter-designed motor tasks. The goal is to develop theory-based knowledge for understanding sport-skill learning in general with no requirement for solving practical problems. Applied research Level 2 refers to testing hypotheses in a field or laboratory setting using sport skills or motor tasks that have properties of sport skills. The goal is to develop theory-based knowledge for understanding sport-skill learning with no requirement to find practical solutions to problems in sport. Applied research Level 3 refers to testing solutions to specific learning problems in sport settings using sport skills. The goal is to find immediate solutions to learning problems in sport.

---

**Figure 1** — Basic and applied research viewed as independent but cooperating endeavors. Reprinted with permission from Christina R.W. (1987). Motor learning: Future lines of research. In M.J. Safrit & H.M. Eckert (Eds.), *The cutting edge in physical education and exercise science research* (pp. 26–41). Champaign, IL: Human Kinetics.
with no requirement to develop theory-based knowledge at either Level 1 or Level 2. The diagram in Figure 1 depicts basic and applied research as independent but cooperating endeavors by situating each within a bidirectional model. The diagram and concepts are analogous to the notion of reciprocal determinism promoted by Bandura (1986)—basic research at Level 1 has an impact on applied research at Level 2 and Level 3, but applied research at Level 2 and Level 3 can influence each other as well as influence basic research at Level 1.

Given this model and definitions of basic and applied research, I contend that sport and exercise psychology, by definition, is applied. Sport and exercise psychology research predominates at Level 2—theory testing using real-world skills and, although there is no requirement to find solutions to problems in sport, we use information gleaned from such research, especially if repeated across studies, to inform professional practice (e.g., motivating participants, developing character). In addition, applied research substantiates the knowledge base at Level 1, which is compatible with Landers’s stance for more theory testing. Christina’s (1987, 1989) depiction of basic and applied research provides a timely and important forum for addressing what I consider to be a turbulent wave in sport and exercise psychology—namely how the term applied is defined, as in applied sport psychology. This is one of my pet peeves, and so I now turn to discussion of the term applied sport psychology.

“Applied” Sport Psychology or Simply Sport (and Exercise) Psychology?

Robin Vealey (2006) used the term applied sport psychology to allude to performance enhancement, mental skills training, certified consultants, and psychological services to athletes. Penny McCullagh did not mention the phrase, applied sport psychology, but reported that “performance modification” topics (e.g., imagery, goal setting, flow states) commanded the greatest amount of space and attention in undergraduate sport and exercise psychology textbooks and syllabi (McCullagh & Wilson, 2007). Also recall that a performance-focused view of sport psychology was the impetus for my metaphor, riding the wave.

Ironically, Robin and I engaged in a stimulating dialogue (via e-mail!) following her Academy presentation. I argued that using the term applied sport psychology to mean performance enhancement or mental skills training infers that other aspects of our work such as youth development through sport and adult exercise and well-being are not applied endeavors. This is simply not the case—most, if not all, scholars in sport and exercise psychology do applied research and inform practice in the areas of youth sports, adult exercise behavior, individuals with disabilities, rehabilitation from injury, and overall personal development. Performance might not be a desired focus, but other behaviors such as motor skill development, prosocial behaviors, and physical activity adherence are. Yet the phrase applied sport psychology used interchangeably with performance enhancement (typically with high-level athletes) conjures up an inadequate and incomplete picture of the breadth of sport and exercise psychology research and, more importantly, continues to create confusion, and even divisiveness, in the field and among students. Many students believe that applied and research are not compatible terms!
It wasn’t surprising that Penny McCullagh didn’t use the phrase applied sport psychology in her Academy talk because 10 years earlier in her presidential address for AAASP (McCullagh, 1998), she questioned, “What is the applied in applied sport psychology?” She made the point that students say they want an “applied” program, but they don’t mean applied research. They want to “apply” services to elite athletes. Penny argued that we need to make a clear distinction between applied research and application and suggested that we use the term intervention as the practice of sport psychology and leave the term application out of it altogether. I agree that clearly distinguishing applied research and the practice of sport psychology is an essential step, simple and logical as it might seem.

To exacerbate confusion over the term “applied” sport psychology, the Directory of Graduate Programs in Applied Sport Psychology (Sachs, Burke, & Schrader, 2001) asks faculty members to rate their graduate programs on a continuum with anchors of applied and research orientations. These are not opposite ends of a continuum. Just like Christina’s model, basic and applied contrast types of research that vary in their goals for informing practice. A dichotomy of applied versus research orientations promoted in this directory and found in the literature is misleading to students, consumers, and colleagues in other disciplines. In my experience, prospective students and university colleagues interpret the term applied sport psychology as synonymous with performance enhancement with high-level athletes.

I maintain that applied is a redundant word—sport and exercise psychology is an applied subdiscipline that focuses on applied research, mostly Level 2 applied research in which the goal is to develop or test theory with no requirement for solving practical problems. But sport and exercise psychology researchers are also committed to translating theory-based findings to teaching, coaching, and consulting applications. What if we simply remove the word applied? If we subscribe to Strunk and White’s (2000) principle of “omit needless words,” we would achieve inclusion of all sport and exercise psychologists who do applied research, there could be less confusion about what the field of sport and exercise psychology is all about, and fewer individuals might align sport psychology predominantly with performance enhancement.

To substantiate my point, the Association for Applied Sport Psychology (AASP) posts this narrative on their Web site: “AASP promotes the science and practice of sport and exercise psychology. . . AASP advocates the application of psychological principles that have been supported by research in sport and exercise.” And they define the field as such: “Applied sport and exercise psychology involves extending theory and research into the field to educate coaches, athletes, parents, exercisers, fitness professionals, and athletic trainers about the psychological aspects of their sport or activity. A primary goal of professionals in applied sport psychology is to facilitate optimal involvement, performance, and enjoyment in sport and exercise.” Now go back and read this narrative but skip over the word applied. See what I mean? I like their purpose statement and definition a lot because they are inclusive of the levels of research implied by Christina’s (1989) model, and they distinguish applied research from application or the practice of sport psychology. But the term applied is unnecessary—sport and exercise psychology specialists do applied research that bolsters theory-based knowledge and translates to practical applications. By now you might be thinking, “She’s making much ado about nothing,” but I genuinely believe that we need to be crystal clear about terminology, definitions,
and goals that will project sport and exercise psychology as a cohesive, coherent, and consistent area of applied research and practice.

### Integration Among Theory, Research, and Practice

Integration is a recurring and distinctive wave of the future for sport and exercise psychology, echoed by many doing applied research and translating research to inform best practices. Penny McCullagh (1998) spent most of her presidential address making a case for integrating areas within AAASP (social psychology, health psychology, performance intervention) and integrating theory, research, and practice in much the same way that Christina made a case for coupling basic and applied research according to goals for solving practical problems. Bert Carron (1993), in his Coleman Griffith address for AAASP, also made a compelling case for integrating theory, research, and practice as necessary and important endeavors to allow sport and exercise psychology to thrive as a credible field. He eloquently concluded, “It is important to emphasize that we should continue to strive for an integrated AAASP . . . where research/theory, intervention, and the quality of life are considered to be compatible, complementary and interdependent activities” (p. 218).

Like McCullagh, my AAASP presidential address (Weiss, 1998) envisioned sport psychology in the new millennium within an integration theme. The publication lies buried alongside McCullagh’s in a supplement of *Journal of Applied Sport Psychology* that houses the conference abstracts. It was timely to resurrect these ideas; I discovered that my observations then are highly relevant for my task now to envision sport and exercise psychology in the coming decade. I synthesized the challenges discussed by previous presidents of AAASP and weaved them with ideas from a book I found highly relevant for conceiving future research trends—*Composing a Life* by Mary Catherine Bateson (1990), writer and professor at George Mason University. *Passionate collaboration* is the main theme of the book, referring to the possibilities of productivity when two or more individuals, with different but complementary perspectives, seek a common goal for which they have passion or intense emotion. Passionate collaboration implies integration, interdependence, and mutual respect—concepts emphasized by Scott Kretchmar in his keynote address on the future of kinesiology research (Kretchmar, 2008).

Emphasizing the method of passionate collaboration, I proposed future directions for enhancing the sport psychology knowledge base and for enhancing our professional development and image. One is clearly an applied research-oriented theme and the other a practice-oriented theme, consistent with my earlier discussion of basic and applied research and practical application. Within the theme of enhancing the sport psychology knowledge base, my synthesis of previous presidents’ visions combined with my own vision for the field resulted in three dimensions: (a) measurement issues, (b) interventions, and (c) lifespan development. I will elaborate briefly on each of these three dimensions in relation to future directions for the field.

First, the quality of our work depends on the accuracy with which we measure psychological and behavioral constructs. We have progressed significantly since Schutz and Gessaroli’s (1993) chapter on use, misuse, and disuse of psychometrics in sport psychology research. We have expanded our types of research designs,
statistical methodologies, and psychometric instruments. Even so, I suggested that we must keep pace with developments in measurement, design, and statistical analysis to maintain cutting-edge research and make a significant impact on theory-based knowledge. To reinforce this view, Bob Schutz gave a colloquium at the 1998 AAASP conference titled, “The Big Five in Sport Psychology Questionnaires: Valid, Visionary, Verified, Veracious, and Versatile; or Vacuous, Vulnerable, Vague, Vaporous, and Voluminous?” He acknowledged improvements since his critique in 1993, such as use of confirmatory factor analysis and validation steps in developing new or modifying existing instruments. He also pointed to examples in the literature of misusing statistical procedures, inaccurately interpreting findings, and making premature conclusions about validity. We have come a long way since 1998, with evidence of a wide array of quantitative and qualitative designs and methods routinely seen in our journals (Weiss & Gill, 2005). The implication for graduate education is that we must prepare students to go beyond the usual introductory and intermediate statistics classes to advanced offerings, such as structural equation modeling and longitudinal data analysis, as well as naturalistic designs and qualitative methods that will avail our future scholars of the necessary tools to become contributing researchers.

Second, we need more intervention research, in general, and especially evidence-based research for effectiveness of psychological methods such as imagery, self-talk, and relaxation training (Vealey, 1994). Such research is necessary not only for academics using traditional research designs (Level 2 applied research) but also for clinicians who work closely with individuals in real-world contexts (Level 3 applied research). The latter research could be done using appropriate alternative designs and methods such as case studies, interviews, or single-subject analysis. It is imperative that consultants and clinicians move away from anecdotal accounts of working with athletes, as I’ve seen at some conferences, and move toward providing data-based evidence of impact for particular methods. Such evidence of effectiveness must include magnitude of effects (i.e., practical significance), along with whether effects are short-lived or enduring, by taking multiple assessments and charting change over time. More intervention and evaluation research is long in coming (Gould, 1982; Smith, 1989) and would considerably enhance our ability to make informed recommendations to practitioners.

Finally, lifespan development is a third critical issue in the future of sport and exercise psychology research (Weiss, 1998). Our knowledge base is chockfull of studies on youth in middle/late childhood and college-age participants but is less rich for young children, adolescents, and middle and older adults. We need more research on these understudied age groups, as well as underserved groups such as people of color, individuals from varying cultures, and those varying in socioeconomic status. Tracking attitudes, emotions, and behaviors from early childhood on will enhance the impact of our research such as many developmental psychologists have done through programmatic longitudinal studies (e.g., see Eccles, Wigfield, & Schiefele, 1998). In sum, measurement, intervention, and lifespan issues represent three content-based goals for future sport and exercise psychology research. And passionate collaboration—or integration of perspectives, methods, and goals—is an effective and appropriate means of achieving these goals.

Recently, Gill (2007) presented a riveting perspective on integration as a key to sustaining kinesiology in higher education. Despite its importance, she contended
that integration is a missing link in academic kinesiology and in sport and exercise psychology. Gill alluded to the dualism of “sport psychology” and “exercise psychology” that is fueled by our journals, textbooks, graduate specializations, and organizations—a split that is artificial and misleading. Separating sport psychology from exercise psychology, Gill implores, “destroys the integrative nature of both the subdiscipline and kinesiology” (p. 279). Psychological theories and methods cut across sport and exercise contexts (e.g., motivation, self-perceptions, emotions) and, as such, sport and exercise psychology should be viewed together rather than divided and lacking integration.

Vealey (2006) referred to “infant (exercise) and adolescent (sport) psychologies” in her paper to accentuate the emergence of “a distinct knowledge base” in exercise psychology. Although historically accurate in that interest in applying psychological principles to exercise settings emerged later than interest in traditional sport settings, such terminology (i.e., psychologies) might give the impression that sport psychology and exercise psychology are separate entities. When Journal of Sport Psychology became Journal of Sport and Exercise Psychology in 1988, this was done to avoid misperceptions of the term sport and to cast out a wider net for studies that address psychological aspects in fitness and health programs (Gill, 1987). Today, most of our university graduate programs are labeled “sport and exercise psychology” for the same reason.

The term sport psychology was handed down from our European roots in the field (Vealey, 2006), in which sport is used as an umbrella term for physical activity in its various forms. But in North America, we tend to associate sport with athletic participants (youth sport, collegiate sport, elite sport) and exercise with adults doing physical activity for health-related reasons. As an example, two staff members in my university department go to the recreation center during their lunch hour. The American woman says, “Let’s go exercise,” and the European woman says, “Let’s go do sport!” The conundrum of sport psychology and exercise psychology being perceived as separate entities is more than just a semantic debate, and I agree with Diane Gill (2007) that we need to be clear, precise, and consistent with how we portray our field to students, consumers, and the general public. For instance, Joe Hamill (biomechanics researcher) asked me after my talk what the difference is between sport and exercise psychology, “Because it’s confusing for us in the field to understand this!”

The danger of separating “sport” and “exercise” psychology is already seen when job descriptions specify candidates in “exercise psychology” rather than in “sport and exercise psychology.” This might likely exclude good candidates who study psychological topics in “physical activity” settings that are inclusive of organized or recreational sports and physical activities, based on a perception that those who study social psychological factors in “exercise” settings are of a different breed than those who study social psychological factors in “sport” settings. McCullagh’s solution to this problematic divide is to use the more inclusive term psychology of physical activity to refer to our programs and research focus (McCullagh & Wilson, 2007). Time will tell if this phraseology will be adopted or, perhaps more appropriately, physical activity psychology.
Transforming Sport and Exercise Psychology Within an Interdisciplinary Vision

To integrate the past and present waves, I now turn to perspectives on “transforming” sport and exercise psychology within the coming decades. I came up with the phrase *trans-forming* because every radio show, television program, and other media forms highlight the *trans fat* revolution! Trans fat has made a huge impact on society—it has completely changed the way retailers and restaurateurs market their goods and how consumers make purchasing decisions. Everywhere you look, “0g trans fat” is a featured label on food products (e.g., Tostitos, Wheat Thins) and highlighted when fast-food chains advertise their offerings. Even the Girl Scouts espouse that their cookies contain 0g trans fat! I could not help but think, “How can we *trans-form* sport and exercise psychology to make such a significant impact on scientific knowledge, practical applications, and societal relevance?” How can sport and exercise psychology, with its focal interest on thoughts, emotions, and behaviors in physical activity contexts, achieve a greater sense of interconnectedness as a field of scientific inquiry?

The potential for comparable impact to that made by trans fat, I believe, lies in a commitment to interdisciplinary research (National Academy of Sciences, 2005). Although many scholars say they do interdisciplinary research, or tout the benefits of such a perspective, I don’t see many individuals in sport and exercise psychology really immersed in interdisciplinary research beyond collaborating with scholars in psychology. As an example, I was past-president of NASPSPA in 2007, which meant I was in charge of coordinating and planning the conference program. I received an e-mail from an author whose abstract had not been accepted for presentation. The abstract described how she and her coauthor would report groundbreaking results from a national conference they attended, the National Academies Keck *Futures Initiative*, which focused on facilitating interdisciplinary research, and then discuss how such findings could be bridged to the field of motor behavior. She was curious why reviewers were not favorable toward this idea given that interdisciplinary research is the hot commodity in scientific circles and that it has much to offer motor behavior and related fields in kinesiology. I shared reviewer comments with her that went something along the lines of, “This isn’t original research,” “This doesn’t seem to fit the type of presentations we do at this meeting.” I also reread the abstract and thought, “We really need this type of presentation to inform scholars on developments in interdisciplinary research in the biological, physical, and social sciences, and how we can incorporate concepts and methods to motor behavior and sport and exercise psychology.”

I followed up by phone and informed the author that I decided to accept the abstract for presentation. At the meeting, she presented me with a copy of the book that was produced as a result of the conference, *Facilitating Interdisciplinary Research* (National Academy of Sciences, 2005). Indeed this was an unintended and unexpected benefit of my decision! The book was not only an invaluable resource for my own research directions but was exactly the missing piece to star in my vision for the future of sport and exercise psychology.
The National Academy of Sciences (2005) clearly define the term interdisciplinary and the conditions for satisfying this type of research. Specifically, interdisciplinary research is defined as “a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice” (p. 2). They go on to say that “interdisciplinary research is pluralistic in method and focus,” and that it “may be . . . driven by scientific curiosity or practical needs” (p. 2). This definition is inclusive of both basic and applied research (i.e., Levels 1, 2, and 3 in Christina’s, 1989, model) and recognizes the complementarity of research and practical foci.

The National Academies (2005) clarify why interdisciplinary research is essential to the advancement of science and practice. They claim, “As a mode of discovery and education, it has delivered much already and promises more—a sustainable environment, healthier and more prosperous lives, new discoveries and technologies to inspire young minds, and a deeper understanding of our place in space and time” (p. 16). Certainly this rationale for conducting true interdisciplinary research is integral to our goals as sport and exercise psychology researchers.

The National Academies (2005) identify four motives that “drive” the need for interdisciplinary thinking. These are (a) the inherent complexity of nature and society, (b) a desire to explore research problems at the interfaces of disciplines, (c) the need to solve societal problems, and (d) the power of new technologies. However, parallel with a convincing rationale for the need to increase the rate of interdisciplinary research are barriers to such research, “. . . the Futures Initiative was created to stimulate new modes of inquiry and break down the conceptual and institutional barriers to interdisciplinary research that could yield significant benefits to science and society” (p. ix). For me, the recurring theme of integrating theoretical knowledge and socially relevant issues reinforces the important and reciprocal influence of basic and applied research and its impact on professional practice.

Continuing with their compelling rationale for conducting interdisciplinary research, the National Academies (2005) reinforce that, “successful interdisciplinary researchers have found ways to integrate and synthesize disciplinary depth with breadth of interests, visions, and skills” (p. 2). In other words, one does not have to sacrifice disciplinary training and expertise to do interdisciplinary research; both depth and breadth are desired within this approach. In addition they contend, “social science research has not yet fully elucidated the complex social and intellectual processes that make for successful interdisciplinary research. A deeper understanding of these processes will further enhance the prospects for creation and management of successful interdisciplinary programs” (p. 40). This statement suggests that social science research is a late bloomer to the interdisciplinary game, which reinforces my observation made earlier of few individuals in sport and exercise psychology who do such integrated science. It would seem timely for sport and exercise psychology to join the bandwagon given the potential to be part of exciting and relevant interdisciplinary research with its implications for making a significant impact on scientific research and the greater good of society.

After reaching consensus on defining interdisciplinary research, determining the reasons for conducting such research, and pinpointing its numerous benefits,
several chapters subsequently focus on how academic institutions, funding organizations, and professional societies might facilitate interdisciplinary research (National Academy of Sciences, 2005). In the remainder of this section, I address the role of academic institutions in promoting the type of environment and resources conducive to encouraging scholars from multiple disciplines to embrace an interdisciplinary approach. Uppermost in my mind is how sport and exercise psychology fits into the puzzle of this exciting and provocative approach that will, no doubt, define the future of how students are trained, how problem-oriented research questions are addressed, and how socially relevant issues are solved.

**Intra-University Partnerships**

How can sport and exercise psychology partake of the kinds of interdisciplinary work outlined by the National Academies to make a significant impact on research and practice? One way is through *intra-university partnerships*. For example, at the University of Minnesota an interdisciplinary risk and prevention science minor was developed to meet the need for preparing doctoral students to conduct research, develop relevant curricula, and participate in civic engagement that requires knowledge and skills that transcend traditional disciplinary boundaries. Connections and collaborations are made among disciplines such as kinesiology, public health, child psychology, social work, educational psychology, family social science, school psychology, teacher education, psychiatry, and educational policy and administration. In this way, depth and breadth are achieved through coursework, seminars, and internships of salient prevention science topics such as children’s mental health and well-being; interventions in education, health, and social services; social policy; family and community studies; and methodology.

Kinesiology—and specifically sport and exercise psychology—is an essential core unit in this interdisciplinary minor for at least two major reasons. First, scholars focus on *prevention* of physically inactive lifestyles and associated health and quality of life consequences, as well as emphasize *promotion* of a physically active lifestyle and positive physical, psychological, social, and physiological outcomes. Second, we are also concerned with children’s and adolescents’ motor skill development and associated psychosocial and behavioral outcomes (e.g., perceived competence, emotions, continued physical activity). For example, researchers are interested in preventing delayed motor skill development in children and potential negative psychosocial outcomes like peer exclusion, low confidence, and anxiety in physical activity settings. According to Clark (2007), “Children who leave elementary school without a strong foundation of motor skills are ‘left behind’ in the same way that children are left behind when they leave without the prerequisite language or mathematical skills. . . . Motor literacy is as important as reading literacy” (p. 43). Because of our unique focus on physical activity behavior—its determinants and outcomes—sport and exercise psychology needs to make its presence known in many interdisciplinary endeavors such as risk and prevention science.

Positive youth development is another area that necessitates interdisciplinary approaches through intra-university partnerships. This approach emerged from “positive psychology” and characterizes a shift from the older deficits-focused view of children and adolescents that emphasizes prevention of problem behaviors, to an assets-focused view where promotion of life skills provides youth with resources
that maximize desirable outcomes in salient domains of their lives (Mahoney, Larson, & Eccles, 2005; Petitpas, Cornelius, Van Raalte, & Jones, 2005). In other words, positive youth development is all about promoting desirable behaviors such as responsibility and self-regulation as a means of preventing high-risk behaviors such as substance abuse and physical inactivity. As such, this approach focuses on cognitive, social, emotional, and behavioral competencies that children and adolescents can learn in one achievement context (e.g., sport) that can be transferred to other important domains such as school, home, and job (i.e., life skills). Examples of life skills include interpersonal, emotion management, goal setting, conflict resolution, and resistance skills. This is currently a hot topic and one that I believe will demonstrate sustainability over time.

At the University of Minnesota, several colleges, centers, and departmental units revolve around the interdisciplinary topic of positive youth development. This area comprises an Applied Research Collaborative on Positive Youth Development administered by the Center for 4-H and Community Youth Development. Units involved in this intra-university collaboration include kinesiology (sport and exercise psychology), child psychology, family social science, educational psychology, social work, public health, and centers of excellence. Faculty members from these areas cooperate, coordinate, and collaborate to maximize advances in positive youth development through interdisciplinary research, a speaker series, curricula development, and public outreach efforts. Understanding how to promote positive outcomes in youth requires depth of expertise from each of the units involved, and also breadth of interests, knowledge, and skills to derive effective strategies for making an indelible impact on the lives of youth in domains such as sport/physical activity, school, family, neighborhood, and extracurricular activities (e.g., 4-H, Future Farmers of America).

I need to take a step back for a moment and remind readers of our historical roots in youth development through sport participation. I don’t want people to forget that sport psychology researchers blazed the path to making significant contributions to the knowledge base in psychosocial development of youth. Suddenly a “new wine in an old bottle” (i.e., positive youth development) has emerged as a contemporary approach in developmental psychology, yet sport psychology research in youth development topics (e.g., self-perceptions, social relationships, motivation, moral development) goes back at least 25–30 years (see Reeve & Weiss, 2006; Weiss, 2004). Such contributions include programmatic research studies in the 1970s by Scanlan (see Scanlan, Babkes, & Scanlan, 2005, for a review) and Smith and Smoll and colleagues (see Smoll & Smith, 2002, for a review). Although sport psychology scholars have always viewed sport and physical activity as contexts of youth development, only recently have developmental psychologists expanded their focus from school, neighborhood, and family contexts of development to sports and physical activities. In reviewing book chapters and journal articles, I am troubled that our extensive knowledge base in youth sport psychology is infrequently cited. Recently, an edited book and a special volume of a journal on positive youth development through sport were published—only one of the lead authors of a chapter or article was a sport psychology researcher. I find this regrettable; youth development through sport has enjoyed a long and productive history, and this legacy should not be discarded. My take-home message is that we need
to ensure that our work is visible and recognized by engaging in passionate collaboration within interdisciplinary research and policy activities.

**University–Community Partnerships**

Interdisciplinary research relevant to sport and exercise psychology scholars can also be effectively accomplished within *university–community partnerships*. One logical example is youth development in physical activity contexts, where university units collaborate with schools, parks and recreation departments, sport leagues, youth organizations (e.g., YMCA), and community centers in efforts to promote accessible, safe, and enjoyable participation for all regardless of age, gender, ethnicity, culture, and socioeconomic class. Another area would be adult exercise and quality of life, where relevant university disciplines coordinate with fitness centers, health and wellness clubs, work sites, and corporations to strategize how to provide age- and gender-appropriate programs that motivate adults to embrace a physically active lifestyle. Because positive youth development through sport and physical activity is my area of expertise, I will use this as an example of exciting interdisciplinary research and service that is taking place at the University of Minnesota.

The Hennepin County/University of Minnesota Collaboration Initiative was conceived as a formal partnership to work on and solve important public policy issues. The *common* goal is to *connect* the scholarship and research of the university with the “in-the-field laboratory” of the county’s varied programs and services. This *collaboration* links the resources of all schools within the university to the services provided by all county departments. I have purposefully italicized *common*, *connect*, and *collaboration* to accentuate these ideas with my earlier advocacy of *passionate collaboration*—the possibilities of productivity when two or more individuals, with different but complementary perspectives, seek a common goal for which they have passion. Some examples of current projects under this collaboration initiative include the impact of the light rail system, improving reading skills, and decentralizing delivery of human services.

A recent, special project between the university and county is the Hennepin County Youth Sports and Physical Activities Initiative. What inspired this collaborative project was passage of a referendum to build a new Minnesota Twins baseball stadium. Because financing for the ballpark would necessitate a new tax imposed on the general public, the county commissioners designated up to $2 million per year of revenue from this tax to be distributed equitably countywide for youth sports and physical activities. An advisory team was formed consisting of university and county representatives whose expertise is in researching youth development (university faculty) or administering and delivering services related to youth development (county personnel). This interdisciplinary dream team consists of university faculty in sport psychology, child development, family social science, youth development, public health, and diversity and equity; county representatives from early intervention and prevention; children, youth, and families; public schools; juvenile corrections; and adolescent medicine. It’s hard to imagine a more diverse and passionate group who are united in their goal of enhancing youth development through sport.

The goal of this advisory team is to provide recommendations to the commissioners on how best to distribute funds to increase opportunities and improve
experiences for youth participation in sports and physical activities (e.g., after-school programs, community centers, parks and recreation leagues, specific organized sports). Sport psychology faculty and students occupy the main leadership role in this project because strategies to achieve goals are designed to focus on healthy outcomes (physical, academic, psychological, social) within a positive youth development framework. Because sport psychology scholars have been at the forefront of conducting research, modifying theory, and translating research to practical applications for youth development through sport for a long time, we were asked to lead the charge in this project that will likely make a substantial impact on the quality of youth sports in the largest county in Minnesota. The positive youth development approach is also compatible with the mission of Hennepin County, “. . . to enhance the health, safety and quality of life of our residents and communities in a respectful, efficient, and fiscally responsible way,” as well as compatible with the funding vision, “. . . to support healthy youth development through involvement in sports and activities which will lead to . . . more youth becoming healthy, safe and self-reliant adults.”

This university–community partnership among diverse parties is interconnected by a common, passionate goal of enhancing accessibility, reducing barriers, improving existing programs, providing new programs, and facilitating efforts of youth sport programs to promote positive youth development. The youth sports and physical activities collaboration was driven by the need to address real-world community concerns (Level 3 applied research). Down the line there will likely be an evaluation component to determine the effectiveness of recommended strategies that are implemented by the county on promoting positive youth development (Level 2 applied research). Such evaluation should include magnitude of impact and sustainability (i.e., meaningful significance). In turn, practical strategies and evaluation research of the impact of these strategies may provide compelling information to modify existing theory concerning positive youth development. To this end, Landers would be happy with this balance of theory testing, applied research, and dissemination for professional practice!

**Interdisciplinary Approaches to Professional Development**

Transforming sport and exercise psychology within an interdisciplinary vision also extends to professional development. In the past, most of us have been content to mentor our students in our own image or to be “mini-me” as in Austin Powers’s fame. That is, we’ve trained our students so they possess the knowledge and skills to conduct research, teach courses, and engage in public outreach just as we always have. But in the ever-changing world of higher education and a concerted move toward interdisciplinary research, the complexion of the job market has changed, as have criteria for tenure, promotion, and merit. As doctoral mentors, we must be accountable for the education of our graduate students by flexing with the changing times.

Academic job descriptions have dramatically changed since the days of seeking candidates who contribute exclusively to research, teaching, and advising within their own subdiscipline (e.g., sport and exercise psychology). For example, Northwestern University posted a job description last year in educational psychology that sought a person in “youth development”; their own specific research
interest could be within any achievement context, such as school, sport, neighborhood, and family contexts. I’ve seen other job announcements seeking faculty members with interdisciplinary expertise in the antecedents and consequences of children’s physical activity and in behavioral aspects of physical activity, which included youth sport as a relevant context. In addition to professorial positions within universities, interdisciplinary jobs are emerging within youth (and other) organizations. For example, the Girl Scouts offer programs that promote youth development, including physical activity, nutrition, and other healthy behaviors. Recently they posted position announcements for researchers in program evaluation and outcomes measurement who would be responsible for managing research teams and evaluating ongoing projects. As long as our students are trained in ways that make them marketable for such interdisciplinary positions, we will succeed in doing our part to prepare future scholars and leaders that align themselves with sport and exercise psychology but who have the knowledge, skills, and interests to cut across disciplinary boundaries.

Publishing in scholarly journals is another area of professional development that is navigating an interdisciplinary course. Last year *Developmental Psychology*, which has not recognized sport contexts as suitable for their journal in past years, put out a call for papers for a special issue on sport participation and youth development. This is likely an outgrowth of the current interest in positive youth development. In addition, journals such as *Applied Developmental Science* and *New Directions for Youth Development* have also featured special issues or articles on youth development through sport participation. In creating a vision for the future of sport psychology, it is imperative that we are not left behind when opportunities emerge for publishing our research in interdisciplinary journals. We need to continue to make our work visible and accessible to enhance our credibility in envisioning the future of youth development through sport as well as other areas of research.

Consultancies with governing bodies and professional organizations, and service on national advisory boards, represent civic engagement and public outreach opportunities when individuals are trained in interdisciplinary research. For example, the President’s Council on Physical Fitness and Sports Science Board consists of kinesiology and public health educators from a broad spectrum of specializations. Collectively, they contribute to guidelines, position statements, initiatives, and conference programs related to physical activity and health-related outcomes. The Ladies Professional Golf Association (LPGA) and Women’s Tennis Association (WTA Tour) created advisory boards to glean expertise on a range of issues related to adolescent development, psychological and social challenges, and performance optimization. Individuals trained in interdisciplinary approaches to youth development would be strong candidates to represent these and other advisory boards.

Recently, Scott Kretchmar has provided excellent leadership in an exciting interdisciplinary venture, *The NCAA Scholarly Colloquium on College Sports*. This initiative is concerned with college athletics as a scholarly area of inquiry, with special attention to topics such as sport and the educational process, physical and mental health outcomes, sportsmanship and ethics, gender equity, professionalization of youth sport, and sport and the media, to name a few. An interdisciplinary advisory board includes representatives from kinesiology (various subdisciplines including sport psychology), sports law, business, sports journalism, philosophy,
sociology, psychology, and educational policy. The advisory board also doubles as editorial board members for a forthcoming scholarly journal on sports and higher education and as organizers, moderators, and reactors for a conference program at the annual NCAA Convention. Opportunities implied by this NCAA group, like the ones previously mentioned for national organizations and sports governing bodies, all require expertise and interest in interdisciplinary perspectives on physical activity and well-being, adolescent development, and college student-athletes. In short, professional development of future graduate students must include the knowledge and skills to adequately prepare them for interdisciplinary research and contributions to professional and community service.

With such an interdisciplinary approach, common areas of interest such as youth development or adult physical activity can benefit from collaborative research, curriculum delivery, civic engagement and outreach, external funding, and national guidelines and impact. For example, Patty Freedson (pediatric exercise physiologist) asked me after my presentation why mainstream psychologists are so successful at getting NIH funding for youth physical activity research but sport and exercise psychologists have not fared as well. Could it be that the term sport is a limitation in grant panels’ perceptions of expertise, or perhaps there is an assumption that sport psychologists are more concerned with performance enhancement? One way for us to get our foot in the door more frequently is to collaborate as part of an interdisciplinary team that tackles children’s physical activity from different but complementary and interconnecting perspectives.

Keeping such an approach in mind, last year I had an opportunity of a lifetime to speak to a subcommittee of Congress on the importance of youth development programs using sport as a context for teaching life skills and promoting positive social and psychological outcomes such as character and sportsmanship. The panel was the epitome of an interdisciplinary team, consisting of a developmental sport psychologist (me), an elementary school principal, a lawyer advocating for gender equity under Title IX, and a golf legend in Jack Nicklaus. Opportunities to make an impact on national guidelines and public policies would be the ultimate in interdisciplinary goals related to physical activity and health outcomes. Such an impact would inspire more funding targeted for new and existing sport and physical activity programs.

**Conclusion**

Having started on the ground floor of sport psychology as a doctoral student in the 70s and having experienced the “thrills of the ride” through major developments in the 80s and 90s, I am proud of the advancements made in theory, research, and practice as we gathered for the Academy meeting in the early 21st century. Still, as a field, we can improve in conceiving of all levels of research as important and reciprocal in nature (i.e., Level 1 basic research, Levels 2 and 3 applied research), being consistent and cohesive in our field’s name of sport and exercise psychology, and making a commitment to truly integrating theory, research, and practice to promote physical activity and its beneficial outcomes. I also urge us to honor the legacy of sport and exercise psychologists’ scholarly accomplishments over the years by appropriately citing their contributions. Most important, I suggest that
we transcend our significant contributions to date by embracing interdisciplinary collaborations to enhance the scientific knowledge base and enhance professional practice, both of which might ultimately benefit socially relevant phenomena. This interdisciplinary vision, I believe, is the wave of the future, one that I hope future students and junior faculty will wade into and ride with passionate collaboration.

Notes

1. My ideas and perspectives in this manuscript are based on my own unique academic background, area of scholarly interest, and professional experiences, which no doubt would be the same sources of influence for other researchers in sport and exercise psychology had they been asked to tackle the challenge of envisioning the future of the field.

2. Thanks to Diane Wiese-Bjornstal for pointing out that physical activity psychology is a more suitable representation of kinesiology’s unique focus of inquiry.

References


