

Physical Fitness for the Few or Physical Activity and Health for All: Coexisting Ideologies or  
Pushmi-Pullyu Tensions in the Quest for Building an Active, Healthy Nation?

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Abstract

Is it better to have a select few people serve as representatives of a nation's health and vitality, or to have the whole of a nation be active and healthy? The answer speaks volumes about a society's values and long-term interests in its citizens and their prosperity. If the emphasis is on a select few, then an illusion of a healthy and active society can be created. The mass public can bask in the reflective glory of the achievements of the representative few, but they themselves may never know or experience true health, happiness, or prosperity. This presentation will consider the value propositions associated with this question from the perspective of: (a) the academic discipline of physical education; (b) 21<sup>st</sup> century diseases, 19<sup>th</sup> century wisdom; (c) understanding physical activity behavior: psychosocial and sociocultural perspectives; (d) isothermical substitution model; (e) sociocultural relevancy model and community-based participatory research; and (f) syndemic nature of hypokinetic diseases and sedentary death syndrome. To positively affect change among the masses, those involved in delivering physical activity interventions and programming must not only address each lifestyle behavior and social affliction that contributes to hypokinetic diseases, but also to the social and environmental forces that link those causes together (e.g., stigma, unequal access to resources).

The aim of this presentation is to critically reflect on where the discipline of physical education has been and to offer suggestions about where it is going, with a keen interest in advancing inclusive physical activity practices that benefit the whole of society. The complexities of physical inactivity-related diseases will be discussed, leading to recommendations for assuring the sociocultural relevancy of the work that is being done, work that can be enhanced by employing community-based participatory research methods.

### ***The Academic Discipline of Physical Education***

There are mores in all academic disciplines, and physical education is no exception. The idea that physical activity is important for the acquisition, maintenance, or restoration of health dates back centuries (Berryman, 2010; Tipton, 2014), yet it was not until the 19<sup>th</sup> century that the discipline of physical education began to codify (Lee & Bennett, 1985) and it did so primarily under the leadership of medical doctors (Berryman, 2010). As it codified, certain traditions began to set in place, with the pendulum swinging within the degrees of freedom established by the discipline's early leaders.

For example, the Department of Physical Education and Hygiene at Amherst College, recognized as the first of its kind in the United States, was instituted in 1859-1860 due to concerns over student health, not for the development of military personnel or sportsmen (Cardinal, Sorensen, & Cardinal, 2012). Counter to this inclusionary<sup>1</sup> and health promoting perspective were those who promulgated a more exclusionary perspective whereby they believed the discipline should be focused on "...improving the development of the best developed, of improving the health of the healthiest" (Lambeth, 1914, p. 187). Even though there is evidence that this exclusionary position has negatively affected the physical activity participation levels of the population at large, exclusionary practices persist (Canadian Heritage, 2013; Cardinal, Yan, & Cardinal, 2013; Community Foundations of Canada, n.d.).

These extreme value propositions have pushed and pulled the discipline of physical education to one degree or another – like the mythical Pushmi-Pullyu animal described in *The Story of Doctor Doolittle* (Lofting, 1920) – for the past 150+ years.<sup>2</sup> Such tension continues to this day (Community Foundations of Canada, n.d.; Pratt, Epping, & Dietz, 2009). Consider, for example, that many in the United States who are seeking baccalaureate degrees in the field and/or are interested in careers in physical education teaching, tend to be Caucasian, male, middle-class, conservative, and athletic (McCullick, Lux, Belcher, & Davies, 2011; Melville & Hammermeister, 2006). They also appear to be growing up in an increasingly narcissistic (i.e., self-oriented) society (Twenge, Konrath, Foster, Campbell, & Bushman, 2008), which is perpetuated and reinforced by at least some in the commercial fitness industry (Cardinal, Rogers, Kuo, Locklear, Comfort, & Cardinal, 2015).

Concurrently, the science of physical activity and public health – and the more inclusionary physical activity practices that it aspires to foster and promote (Cardinal, 2015) – has matured immensely during the later part of the 20<sup>th</sup> century and this has continued into the 21<sup>st</sup> century. The work of Pate et al. (1995) and the U.S. Department of Health and Human Services (1996) two decades ago clearly accelerated progress in this area. There is now an unprecedented cadre of talented scholars from within and outside of the discipline of physical education who have a more inclusionary and health promoting orientation (Evenson, Dorn, Camplain, Pate, & Brown, 2015), and new talent is being recruited and developed with this orientation (Cardinal, Kang, Farnsworth, & Welk, 2015).

### ***21<sup>st</sup> Century Diseases, 19<sup>th</sup> Century Wisdom***

This shifting orientation is due to the rise of hypokinetic diseases, which are the diseases associated with disuse and physical inactivity (i.e., hypo = less, kinetic = movement; Kraus & Rabb, 1961). Hypokinetic diseases encompass a range of medical conditions that afflict the

world's population, such as cardiovascular disease, diabetes mellitus, hypertension, and obesity, to name only a few. At least in part, these medical conditions are preventable or otherwise mitigated through regular physical activity participation (Lee, Shiroma, Lobelo, Puska, Blair, & Katzmarzyk, 2012; Naci, & Ioannidis, 2015). Unfortunately, few people engage in physical activity at the level recommended to avoid or delay the onset of hypokinetic diseases and therefore they miss out on the many benefits that a physically activity lifestyle affords (Kohl et al., 2012).

To some degree the benefits of physical activity are also characterized as the polar opposites of hypokinetic diseases. That is, *not* having cardiovascular disease, *not* having diabetes mellitus, *not* having hypertension, or *not* having obesity. While certainly avoiding or preventing disease is a worthy cause, loss-frame messaging such as this is not as effective as gain-frame messaging (i.e., emphasizing the positive benefits and values of physical activity participation; Li, Cheng, & Fung, 2014). Moreover, the benefits of physical activity can encompass so much more than what is depicted in loss-frame messaging, such as freedom of expression and will, fun and enjoyment, joy and pleasure, and the pursuit of meaning and self-fulfillment (Kretchmar, 2001, 2006). These latter benefits can be immediate. Hiking a mountain trail and seeing and experiencing the natural beauty along the way and the vista at the trail's end are prime examples. Another example is walking or biking to complete short-trips and errands rather than driving or riding in a car. This has the immediate benefit of achieving tangible tasks while simultaneously having one less automobile on the roadway, which results in fewer carbon emissions being produced, and the personal value of saving money (and a natural resource for those who are environmentally conscious) by not consuming gasoline unnecessarily.<sup>3</sup>

As the second example begins to illustrate, the benefits of physical activity extend beyond the individual level. It also begins to illustrate how complicated and intertwined the world we live in is. This was elegantly expressed by Chief Seattle (circa 1780-1866), the Native American Indian Chief of the Duwamish Tribe that inhabited the region of the United States that is now known as Seattle, Washington, when he said: “Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect” (California Indian Education, 2008).

For example, societies benefit from a healthy citizenry (Burgess, Johnston, Bowman, & Whitehead, 2005; United Nations Office on Sport for Development and Peace, 2011). Families function better when they play together (Brown, Schiff, & van sluijs, 2015). Children are more attentive and have better behavioral regulation and cognitive outcomes in school (Fox, Barr-Anerson, Neumark-Sztainer, & Wall, 2010). Employers’ also benefit by having a healthier workforce through reduced absenteeism, lower health care costs, and higher employee morale and productivity (White et al., 2016). Additionally, those who enlist to serve and defend their nations (i.e., military personnel) and those who choose to protect and serve its citizens (e.g., firefighters, police officers) are better able to do so (Kazman, de la Motte, Bramhall, Purvis, & Deuster, 2015; Zimmerman, 2012). Clearly, an active, alert, engaged, healthy, and globally minded citizenry has many benefits.

That said, and though some have suggested people have a moral, patriotic, and/or social responsibility to be physically active (Kennedy, 1960; United Nations Office on Sport for Development and Peace, 2011), physical activity participation has most often been conceptualized at the individual level (e.g., Nike’s *Just Do It!* campaign) and/or with a strong emphasis on school- and sports-based programs delivered to children, youth, and young adults (McKenzie, 2013). However, in the latter part of the 20<sup>th</sup> century and early part of the 21<sup>st</sup>

century, in particular, a paradigm shift emerged whereby physical activity participation increasingly was acknowledged to be dependent on factors residing beyond an individual's control (e.g., person-environment interactions), with programming and intervention efforts necessary across the lifespan (i.e., "womb to tomb"), in multiple settings (e.g., schools, worksites, healthcare, community, home-based), and under various life circumstances (e.g., well, apparently healthy, unhealthy, ill) (Cardinal, 2010).

This is consistent with the third iteration of public health, which recognizes that lifestyle behaviors "...are powerfully driven by the social and physical environments in which people live, learn, work, and play" (DeSalvo, O'Carroll, Koo, Auerbach, & Monroe, 2016, p. 621). This shifting emphasis, along with the two value extremes noted earlier in this paper and the backgrounds and interests of many who enter the field, has created opportunities and challenges for those involved in physical activity behavior change, promotion, and retention efforts, as have other changing social forces and conditions, many of which are sociocultural in nature (e.g., diversity, environmental concerns, human conflicts, population growth, self-entertainment, urbanization; Cardinal, 2013; Kosma, Buchanan, & Hondzinski, 2015; Putnam, 2000).

### ***Understanding Physical Activity Behavior: Psychosocial and Sociocultural Perspectives***

Within physical education the sociocultural domain encompasses the historical, philosophical, anthropological, and sociological aspects of human movement. History and philosophy, humanities based disciplines, inform several social science disciplines including anthropology, the study of the whole of humans and societies; from which sociology emerges, the study of humans in their social context, including their constructed social institutions, social groupings, and social interaction patterns. Individuals operate within these constructed societies (i.e., social structures) and social realities (i.e., social dynamics), and this is the essence

of social psychology, a sub-discipline of psychology, which is a behavioral science that seeks to understand the mind and behavior (Cardinal, 2014). Operationally this collection of humanities and social and behavior science disciplines moves from the broad base of anthropology, to the narrower sociology, to the still narrower social psychology, to the still narrower psychology. All are informed by past and existing knowledge and simultaneously construct new historical and philosophical knowledge, which is a dynamic and forever iterative process.

Against this backdrop, spend a moment perusing the map showing the prevalence of obesity in the United States (Dwyer, 2015) along with the map showing the availability of physical activity spaces in the United States (Roubal, Jovaag, Park, & Gennuso, 2015) and an interesting correlation emerges. That is, the regions of the country with the lowest prevalence rates of obesity are in the Northeast and the West, which corresponds with the regions of the country that have the highest prevalence rates of access to physical activity opportunities. Moreover, those who actively transport to and from work vis-à-vis biking or walking – which generally corresponds with these same regions – are least likely to have diabetes, hypertension, and obesity and most likely to meet the recommended guidelines for physical activity (Alliance for Biking and Walking, 2016). Affluence, ethnicity, and race are important moderators in many of these relationships (Alliance for Biking and Walking, 2016), as are other factors such as age, disability, gender, immigration status, location (e.g., rural vs. urban), and sexual orientation (Community Foundations of Canada, n.d.).

Some of these factors are the opposite of what was occurring in the past. For example, historically physical activity levels were thought to decline when people moved from rural to urban environments because of the conveniences associated with living in urban settings. As Kraus and Rabb (1961, p. 3) said:

Since the invention of the wheel, mankind [sic] has tried to substitute machines for its own labor. The logical development culminates in our mechanized era. Today more daily activities are performed by machines, and physical exertion has become unnecessary. When we analyze our daily lives, we can see how the active function of our muscles has been taken over step by step by labor-saving devices. We do not walk, but ride; we do not climb stairs, but use elevators; we do not lift anything of any weight, but we have devices that do that lifting for us. Most of the chores that used to require a certain amount of physical activity have been taken over by machines. We do not mow our lawns by pushing a lawnmower – it is become motorized. We have pushbutton heating, we have vacuum cleaners, we have dish washers. In short, we do not move at all.

Similar ideas have been expressed for centuries (Berryman, 2010; Tipton, 2014). Moreover, these ideas are not dissimilar to what appears in contemporary literature (Cardinal, 2010, 2014).

In theory, the conveniences of automation, laborsaving devices, and technology should afford people more leisure time. However, a lack of available leisure time is often expressed as a primary barrier to physical activity participation (Dishman, Heath, & Lee, 2013). Similarly, as people move out of the workforce and into retirement they should have substantially more leisure time available for physical activity participation. However, physical activity participation rates trend downward throughout the lifespan (Dishman et al.). These are just a few of the contradictions within the realm of physical activity behavior studies, many of which center around time and how people use their time.

### ***Isotemporal Substitution Model***



The isotemporal substitution model seeks to “...estimate the effect of replacing one physical activity type with another physical activity type for the same amount of time (e.g., replacing slow walking with TV watching, by taking TV watching out of the model)” (Mekary, Willett, Hu, & Ding, 2009, p. 520). From a physiological perspective, this calculation seems rather straightforward. That is, by engaging in slow walking instead of television watching energy expenditure doubles (Ainsworth et al., 2011). However, from a sociocultural perspective, the matter is much more complicated than this. Consider:

The number of hours in a day is finite and can be distributed among working, eating, sleeping, and discretionary time. However, not only can the activities in which one engages during discretionary time be highly heterogeneous between individuals (depending on socioeconomic status, occupation, and other social circumstances), but the relative expense and sacrifice of different activities displaced to partake in a period of activity may also vary widely. For example, although it may seem that a 1-hour walk by an unemployed individual should be equivalent to a 1-hour walk by a highly time-limited individual, the activity displaced by an unemployed individual (e.g., 1 hour of TV watching) is likely very different from the activity displaced by the busy individual (e.g., 1 hour of sleeping or jogging). Therefore, although the physiologic benefits of a 1-hour walk may be similar across individuals, the actual overall impact of a 1-hour walk may have a wide range of effects, depending on each individual’s time limitations and general lifestyle. (Mekary et al., 2009, p. 524)

### ***Sociocultural Relevancy Model and Community-Based Participatory Research***

Morgan, Young, Smith, and Lubans (2016) proposed a sociocultural relevancy model to guide physical activity health behavior change interventions and programs. Their model

presupposes an understanding of the sample characteristics (i.e., population of interest; their challenges, motivations, preferences, values), which they note is paramount to the ultimate success of any physical activity behavior change intervention. From that foundation a sociocultural lens is then applied to aid with participant recruitment strategies, and four core intervention components, namely content, format, facilitator, and pedagogy. They suggest that these four core elements are directly related to the participants' engagement in the intervention and ultimately the outcomes of the intervention (i.e., whether the intervention is successful [and sustainable]).

The sociocultural relevancy model also serves as a reminder that those in physical education likely have very different views of and experiences with physical activity than do the majority of people with whom they interact and hope to serve. Consider the following statement: "I love telling people how to love exercise and how to treat their bodies with respect" (McCullick et al., 2011, p. 184). This rather naïve and narrow perspective is controlling, implies authoritative knowledge, and demonstrates little understanding of or respect for others. It seems doomed to failure and may very well do more harm than good. To address this, the sociocultural relevancy model integrates well with the community-based participatory research paradigm, which is "...a transformative research paradigm that bridges the gap between science and practice through community engagement and social action to increase health equity" (Wallerstein & Duran, 2010, p. S40).

### ***Syndemic Nature of Hypokinetic Disease and Sedentary Death Syndrome***

Emerging from Morgan et al.'s (2016) model, the syndemic nature of hypokinetic disease becomes clear. The term syndemics is used to account for the interplay and synergistic nature of person, place, and timing in the development of disease (Singer, 2009). Not only are the individual lifestyle behaviors and social factors considered in syndemics, but so too are the

forces that tie the various afflictions together. Intervention and programming efforts must not only be directed toward addressing each lifestyle behavior and social affliction that contributes to hypokinetic disease, but also to the sociocultural forces that tie those afflictions together. This necessitates the use of the community-based participatory research paradigm in order for genuine, systematic changes to not only occur, but to endure (Wallerstein & Duran, 2010).

### Conclusion

Physical activity is unquestionably good for health. It is also good for the human spirit. It allows people to partake in life and to experience the joys and fullness of life. Regrettably, and in spite of efforts to promote physical activity to the masses for decades if not centuries, there is wide recognition that people and societies suffer from an affliction known as spectatoritis (Nash, 1932). Spectatoritis is the propensity of people to watch others do physical activity rather than to participate themselves. Identified more than eight decades ago (Nash, 1932), spectatoritis remains a modern day concern (Kupchella, 2009).

Many sociocultural forces affect whether or not someone will engage in physical activity. However, most efforts to bring physical activity to the masses have had a strong individual orientation aimed at people between 5-18 years of age. This orientation has been informed and reinforced by the discipline of physical education, and in many ways it has failed.

Fueled by the Surgeon General's Report on Physical Activity and Health in the mid-1990s (U.S. Department of Health and Human Services, 1996), and an increased recognition that there are factors affecting physical activity behavior that reside beyond an individual's personal control, in the 21<sup>st</sup> century a greater emphasis has been placed on the social ecological factors that may influence an individual's physical activity behavior. To understand these factors, frameworks such as the sociocultural relevancy model (Morgan et al., 2016), and methodological paradigms such as community-based participatory research (Wallerstein &

Duran, 2010), have emerged. These approaches encourage a deep understanding of people and their communities; they value local knowledge and partnerships; they are cooperative rather than authoritative; and they occur across the lifespan.

## Notes

<sup>1</sup> While the word “inclusionary” is used here, it is important to remember that Amherst College was an all-male institution at the time, with the students being Caucasian and from affluent families primarily.

<sup>2</sup> Both within and outside of the discipline of physical education, other approaches and perspectives have existed (and do exist). For example, the discipline has contributed to advances in basic science (e.g., mechanistic work in exercise physiology and motor behavior); therapeutic and rehabilitation science and practice (e.g., the professions of athletic training and physical therapy); product design and safety in both sport and non-sport settings (e.g., adapted physical activity and biomechanics); acceptance, diversity, equity, human understanding, and international relations (e.g., sport and exercise psychology, sport history, sport philosophy, sport sociology); among others.

<sup>3</sup> Dargay, Gatley, and Sommer (2007) estimated that the demand for private automobiles would grow from 800 million units in 2002 to more than 2 billion units by 2030. Much of that growth is expected to be in non-Organisation for Economic Co-operation and Development (OECD) countries, with a 20 fold increase expected in China alone. Beyond this sobering estimate, if American automobile passengers weighed what they did in 1960, an estimated 958,000,000 gallons of gasoline would be saved each year (The Score, 2013). Given projections in population growth, the increased demand for automobiles worldwide, and the worldwide obesity trends, the pending demands on the biosphere could be cataclysmic.

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