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The John Massengale Paper

SOME THOUGHTS ON THE FUTURE OF KINESIOLOGY FROM A HISTORIAN

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INTRODUCTION

Why would a sport historian write about the future of Kinesiology (here meaning sport/physical activity) within academia and life in general? Because an analysis of past trends gives the best, if often inaccurate, way to infer what the future may hold. What follows are some thoughts regarding what the field of Kinesiology may look like in 25 years, a timespan that will be roughly the working life of those becoming established in the profession right now, encompassing what they may encounter and for which they should plan. Thus, the purpose of this paper is more to help us think about the future and some possibilities in our field rather than it is to be 100% correct. Indeed, I hope to re-read this in 2045 and possibly get a good laugh! This paper represents *the author's* thoughts about possible future scenarios. As with any paper, references are provided, but the underlying thoughts are mine. Feel free to disagree.

First, the usual caveats: all predictions--even those based on the best data--are, of course, fraught with potential miscalculations because any one factor could disrupt trends. For example, September 11th was not generally foreseen but as a major disruptor it changed all manner of actions and calculations. What follows, therefore, does not take into account major disruptors because they cannot generally be foreseen but does include some factors/trends that have already been widely established, such as climate change, for example. While space tourism was predicted in the 1950s to be commonplace for the public by the year 2000, the implications of the widespread use of personal computers were largely overlooked. What follows is written using North American/European trends that may or may not apply elsewhere.

METHODS

This paper is divided into three overlapping sections: academic, professional sport, and physical activity/recreation for all. The information has been gleaned by a search of both academic and popular sources with the latter being, unsurprisingly, rather less conservative and far more numerous. In fact, the relative dearth of academic sources on the subject was striking. One exception was Laker's 2003 edited book, "The Future of Physical Education," which looked at sport in culture as well as physical education.

Some trends/predictions, however, will be relevant to all of these three areas. First and foremost, climate change (recognized around the world by scientists in many different disciplines, even if whether the causes are "man-made" may be argued over in some places) affects almost every aspect of life as a whole, sport included. Will golf course keepers continue to be able to/should they be allowed to water courses or will golf return to the dry greens, "unimproved" fairways, and natural obstacles such as those made by animal activity, that hark back to its origins? Or maybe drought resistant turf will continue to be developed, using more clover or other grass-like vegetation. Of course, climate change does

not only mean higher temperatures; it also feeds coastal erosion which will affect a range of surfing/boating activities, and extreme rain and/or wind events will have widening impacts (Climate Nexus, 2019). Will snow sports continue to use artificial snow as many resorts have had to do already, for example in Sochi, Russia, where temperatures during the 2014 winter Olympic games reached 61 degrees F? Taken to the possible extreme, will heat cause the winter Olympics, or at least their outdoor events, to cease altogether? Simply playing sport in greater heat may take a toll on athletes (and spectators) and water/heat breaks or changing the times of competition may become more common. An interesting competition to watch in this regard will be the men's soccer World Cup of 2022, planned for Qatar. This will be the first such tournament not played in May/June/July but instead in November/December because of temperature concerns. Even so, cooling technology will be employed in the stadia. The US Tennis Association now allows special heat breaks when temperature and humidity combine to make conditions difficult.

The United Nations has started a "Sports for Climate Action" initiative that attempts to support and guide organizations and individuals "engaging in the climate neutrality journey" (United Nations, 2019). Even the World Economic Forum (perhaps because it meets in the Swiss Alps in January) has paid attention to climate change's effects on sports, also identifying heat stress on athletes, too much rain in some places, and winter Olympics heat challenges (Taylor, 2019). Wetter weather in the UK is having an increased effect on soccer, golf, cricket, and rowing, among other sports, and these conditions have resulted in cancelled or curtailed events, and cost the organizers dearly (Climate Coalition, 2019). Changes in sport nutritional habits toward a more plant-based diet have already been seen in many western countries and this trend, plus the greater intake of "fake" or lab-grown meat will continue. Whether this impetus comes from fears over climate change or simply the desire for a healthier diet, religion, or a concern for animal welfare, the numbers of vegetarians continues to grow. A recent poll in the US showed the numbers of vegans/vegetarians increasing from 1% in 1971 to 13% in 2013 (Gleiser, 2017). Although other estimates put the numbers as far lower, the consensus is that the numbers have grown rapidly in the years 2007-2017.

A second wide-ranging impact will be the greater role of China in world affairs. Already, the People's Republic of China (PRC) has the largest purchasing power parity in the world and many predictors put the PRC ahead of the USA as the world's top economy in late 2020, if not already. Certainly, the PRC's "Belt and Road" initiative gave, is giving, and will give, the PRC both direct and indirect influence on more countries around the world than any other, by design. As early as 1991 while on sabbatical, I was struck by the amount of Chinese investment in Kenya. This has now spread to many other African, Asian and some European countries but generally does not (yet?) create many jobs in those countries. In sport, this expanding Chinese financial influence will lead also to increased influence in sport, as the NBA debacle over the Houston Rockets' general manager's support for freedom in Hong Kong showed. Anyone attempting to do business in China must conform to the host's requirements; the fact that it was the NBA (arguably the most socially conscious of the major sports leagues) that fell foul of this perhaps shows us that in a dispute between free speech in sport and business, business will win (Adams, 2019). As well as Chinese consumption of "western" sports, likely also will be greater numbers and influence of top Chinese athletes and officials in a range of sports on the worldwide stage, from soccer to badminton to basketball, increasing Chinese hegemony even more. Privacy seems to matter to many western people less than it used to, and this lack of concern for privacy tends also to be a typical Chinese trait (Dryer, 2018). Where once sport/physical activity, especially for the masses, in the PRC was a very high priority, now it has fallen down the Party's list of priorities. Where once the PRC used sport to challenge Taiwan's membership of organizations on the international stage, having now largely accomplished this goal and become a much richer country, too, the government now pays less attention to most sport except at the very highest level. One result has been, and continues to be, that since the late 1980s, the rate of childhood obesity in the PRC has increased phenomenally from 5% in 1995 to 20% in 20 years in places where the economy is good and fast food is readily available

(Hunt, 2019). This effect is increased by the old belief when food was scarce that being fat was good. Expect this to become a major issue for China in the coming years. Anyone doubting all this should read Morris' (2004) excellent book in which he recounts that since at least 1907, China's sport leaders have sought to catch up and surpass the west, ironically of course, started by US YMCA missionaries. In 1997, the PRC national swim team coach stated: "Just as our women [swimmers] dominate you now, so will our men dominate you in four, five, six years, and so too will we dominate you in world economics" (Morris, 2004, p. 4).

A third trend of general importance is the growth of technology. Because this is mostly about specific applications, this will be examined in detail in each of the three areas separately and a few brief examples will suffice here: wearable technology tools for all will increase, from heart rate monitors 20 years ago, to tracking of many health markers today—including monitoring for potential injury and making health care increasingly personalized. With the impending failure of existing antibiotics, there will be a race to produce new ones or create other methods of treatment. This may increasingly include health care providers prescribing physical activity in place of drugs, where appropriate. In top level sport, referees will find more and more of their jobs taken over by technology, and in academia, teaching methodology will continue to be transformed by technology.

ACADEMIC AREA PREDICTIONS

In this section, trends within elementary, secondary, and higher education are examined in terms of sport/physical activity. While we hear much at present about artificial intelligence (AI) replacing many occupations, teaching/coaching as professions are perhaps among those least likely to disappear. Although there are many AI programs that augment the teacher in the classroom, it is difficult to see how a teacher can be completely replaced, especially in the teaching of physical activity classes. Indeed, one of the main reasons that students take physical activity classes, aside from the important health benefits, is for the "real" personal interactions that cannot be gained via social media. One might even go so far as to say such classes might be one of the strongest glues that may continue to hold academic institutions together when other reasons for meeting have been supplanted.

Predicted top jobs of the future include elementary and secondary school teachers, a variety of health care workers, teachers of physical activity to seniors, PTs, OTs, nurses, doctors, and PAs (Kiersz, 2019). Any career based on face-to-face human interaction seems to be a relatively safe choice for future employment. Kinesiology departments should be ideally positioned to contribute to this workforce production. Given the clear trend of aging populations in most countries, however, perhaps more time should be devoted to teaching/learning about older populations' needs/abilities with regard to physical activity. For the first time in human history, the number of over 65s worldwide outnumbers those under 5 (Duarte, 2019) and this trend will continue. It has happened very quickly; in 1960, the proportion was almost exactly the opposite of what it is predicted to be by 2050. Better health for these older populations is thus of paramount importance if nations are not to go broke with health care for the elderly. Expect the promotion of physical activity for older populations to be high on the agenda as a result and Kinesiology departments must play a significant role in this.

Distance learning is, of course, already well established in higher education and MOOCs (Massive Open Online Courses) are used for both individual courses and even entire degree programs. Most predict this trend will grow and spread "down" to secondary and elementary schools. Coupled with this is the growing trend in homeschooling (for reasons ranging from religious conviction to rural living) but one interesting point is that when possible, homeschooled children may go to a local school or homeschool association to join in physical education classes and/or athletics, mostly because of the social benefits to be gained. The homeschooling trend is likely to continue to grow thus perhaps providing opportunities for Kinesiology graduates to set up places for sport for homeschooled children of all ages. Sport education may fit well into this model. Sport education provides long term (multi-seasonal), multi-sport teams of mixed abilities, in which records and statistics are kept, and provides a culminating experience and links to the wider sport culture

(Wallhead & O'Sullivan, 2005; Penney & Chandler, 2010).

On the other hand, several authors have noted a trend in society away from traditional team games and toward more individual activities (Anderson, 2015). Participation in youth sport (ages 6-17) is down nearly 10%, according to the Sports and Fitness Industry Association although their figures from 2009-2014 show growth in rugby, ice hockey, and lacrosse. Baseball shows some decline then increasingly basketball, soccer, track and field, field hockey and (touch) football are declining the most. High school football is "nearing a decade of decline" according to the National Federation of High School Associations due to costs and sport specialization as well as fear of injury (Cook, 2018). Indeed, one may note that team games are largely a product of the 19th century wholesale movement of society from rural to urban living and the consequent need to recreate in relatively confined spaces, within short time periods, as befitted "modern" life. With the growing gig economy of the 21st century and the related increasing difficulty of finding a common time and place to meet to play a team sport, it is likely that it is the individual activities, such as skateboarding, surfing, or rock climbing that may increase in popularity. It is no coincidence that these are the three sports that will be added to the Olympic program in Tokyo 2020 and break dancing is under consideration for 2024 (Kortemeier, 2019). Schools and colleges should consider these facts when selecting relevant physical education programs and athletics offerings for the future.

In the UK, the Youth Sport Trust has a website (http://www.classof2035.com/) that examines the role that "PE, sport and physical activity [will] play in the development of our future generations." A report from 2015 suggested that physical education and school sport might have an essential role to play for future generations who are digitally distracted, want to lead healthier lives, yet often lack the infrastructure to achieve this. A reduced level of physical activity among the youth of the world is likely to continue to be a problem. In the UK, the 2012 Olympics in London largely failed to provide a boost for youth sport but physical education teachers there and elsewhere continue to hope for increased attention to, and results from, greater activity in such classes (Marsh, 2015). Youth sport is at a crossroads: some parents want their children to have top level training in a single sport from the earliest years with visions of their child earning a scholarship to attend college and/or perhaps earning a living from their sport. Others understand the need for children to have a wide variety of sports experiences that are fun, so that physical activity becomes ingrained in them for life. The future is likely to offer both roads to parents.

With AI and the prospect of possible less than full future employment, the "fight" between liberal education and an increasingly vocational university education where students are interested only in getting a good job, is likely to intensify and polarize, as much of society seems bent on doing, too. This seems to me to be a classic case of long-term vs. short-term thinking. When one grasps that students graduating in 2020 will reach (the current, likely to be increased in the future) retirement age in the 2060s, it becomes apparent that being able to deal with change and "re-invent" ones-self will be a key factor for success. Graduates who possess at least some skills/knowledge gained from a liberal education are surely likely to have greater success than those more narrowly and restrictively educated. Perhaps most successful will be those institutions that do both well; they will not only provide skills and knowledge for the present-day fast-growing areas of employment but also provide the critical thinking skills necessary for successful future change (Hechinger Report, 2018).

A growing field of study of the past 30 years has been in providing opportunities for those with disabilities in sport. Indeed, I recall in the early 1980s having a guest speaker in the Introduction to Kinesiology class talk about his life in a wheelchair. That he mentioned adults staring, and children asking him why he was in the chair, only highlights the relatively recent practice of those in wheelchairs being increasingly independent and "out and about" in the real world. How far we have come in this regard when we recall that the ancient Spartans placed new-born children outside to see if they were hardy enough to survive. This trend of all manner of "disability," from near sightedness to paraplegia being "corrected" or overcome by technology can only grow. Thus, exoskeleton sport may become commonplace and those using such devices will likely

become completely integrated into school sport. How far can this go or how far will we be comfortable with this progressing? Will we get to the point where we pay to watch robots compete, with or without direct human involvement? The range of possibilities here extends from the already existing consumption of better food to using banned performance-enhancing substances, to the wearing of special clothing (such as the Speedo full body suits banned after the 2008 Olympics, or Nike's AeroSwift tooth-studded tape applied to the body or clothing). A cyborg, or a human frame augmented by mechanical components built into the body is increasingly to be seen: think Oscar Pistorius aka "Blade Runner." However, every Olympic contender has used technology to better his/her performance in some way, from the humble stopwatch on up (Rhodes, 2016; Butryn & Masucci, 2009). The idea of "plugging in" a device able to control movement directly gives us the possibility of extraordinary advances: more people currently in wheelchairs may be helped to walk or those with Parkinson's may gain control of tremors, for example (Gallagher, 2019).

College athletics point to the need for more revenue, more diversity, and more participation. E-sports may be one way to achieve this. Over 60 universities already offer e-sports (up from 7 in 2016) within their intercollegiate offerings and several also provide scholarships. E-sports revenues are predicted to reach $1.5 billion by 2020 because expensive and expansive facilities are not needed, just fast internet access. It all sounds good except that college sports were begun largely to give young men an opportunity to pursue an activity that helped them maintain physical fitness (Keiper et al., 2017; Game Designing, 2019). This may be an area that needs major philosophical thinking in the future as it undoubtedly grows, and a good look at the topic is provided by van Hilvoorde (2016). There may in future be an intersection of e-sports for the masses and professional sports, as reported by Murray (2019), as professional sports teams seek to interest and engage youth by providing gaming opportunities for these young fans.

Complicating matters even further for athletic directors now and in the future will be the reality of college student-athletes being paid. While some have talked of this for years, the State of California passed SB 206--the Fair Pay to Play Act--in September 2019. Effective in January 2023, this will allow athletes at California four-year colleges to have agents and be paid whenever the college uses their "name, image or likeness," although it does not permit direct payment for play (CA SB-206, 2019). Within one month, and in the face of many others states moving to take similar action, the NCAA itself took action, permitting fair pay to play in all 50 states (Brooks, 2019). Founded in 1905 in an attempt to make college football safer and under faculty control, the NCAA will have to change its business model fast. Perhaps by 2045, some college athletes will be paid not only when their likeness is used, but for actually playing the sport. Paying student athletes seems to be supported by the majority of college students (Hess, 2019). This will likely be the biggest change in college athletics since 1905 and looks to have the potential to be quite divisive. Possibly, instead of the current Divisions I, II and III, college sport might be divided into paid and unpaid divisions.

PROFESSIONAL SPORT AREA PREDICTIONS

In 2019, the Wall Street Journal summed up the future of sports as "interactive, immersive and intense" (Pierce, 2019). An observation already made is the growing trend away from team sports and into individual "experience" activities, such as parkour. Certainly, US Olympic officials are highly cognizant of this; their change in outlook may be gleaned from a quick glance at their various online news pages, which frequently highlight skateboarding, surfing, and sport climbing.

Equipment evolution is another area where trends in top level sport are clear. As well as the football helmet having undergone significant changes with regard to sturdiness, protection, and radio communication, the helmet will likely continue to show innovation in future (unless it is abandoned completely in a return to the game's roots). In Europe, bicyclists can already purchase an alternative to a bike helmet: a collar that contains a mini airbag that deploys when a crash is sensed, an idea that might be incorporated into a football helmet (Camarillo, 2017). One can expect fewer youngsters to participate in football unless/until the concussion issue is resolved. The helmet will likely soon include a camera so that TV viewers, or those in the stadium, may choose to

watch what any player is seeing from the player's perspective. Google Glass and GoPros are already being used to help players get immediate feedback on their performance instead of waiting for the coach to show them films. In 2014, the IOC used Google Glass at the Youth Olympic Games and several young athletes wore them for film making (Miah, 2014). Indeed, various forms of augmented reality (AR) are likely to provide personalized training for athletes and allow better viewing choices for spectators (Borel, 2014). Individualized training, as with individualized health care, is likely to filter downward, even to amateur, club athletes. Perhaps athletes, while actually on the field of play, will be permitted by technology to see more of what is going on at the macro and micro levels and adjust their performances accordingly, in real time. Immediate feedback to athletes and coaches seems likely to play an ever-greater role in training and play. Of course, all this equipment is not cheap and the gap between the "haves" and the "have nots" at the top will become even greater, leading some to want a more level playing field from the point of view of technology. Where once it was performance-enhancing drugs that made for a non-level playing field, now and in the future, it will be access to expensive technology. Examples include feedback sensors in tennis rackets (http://en.babolatplay.com/play) or force measurements on rowers' oarlocks (Kleshnev, 2018); these are examples from widely different sports that show the future for instant self-analysis and sharing with coaches and team mates.

Technology has already made strides in officiating and is likely to continue with each sport's authorities trying to find the level of acceptance that their fans will tolerate. A recent good example was the use (or some might say overuse) of VAR (Video Assistant Referee) in the women's soccer World Cup in the summer of 2019. Introduced at the top level in the men's World Cup in 2018, where it was generally considered a success in promoting "fairness" and with a guiding philosophy of minimal interference, it was brought into the women's game only three months before the tournament. Another significant rule change (regarding goalkeeper positioning on her line until a penalty was kicked) was implemented only six days before the tournament began and the two changes together made for controversial use of VAR. Often there were delays of several minutes that many viewers thought disrupted the flow of the game. Cricket and tennis, on the other hand, have used Hawkeye (a system of cameras that show and/or predict the pathway of the ball) since 2001 with minimal delays and general fan acceptance. As technology improves, we may move away from human refereeing much more. Also in regard to officiating, there are but a handful of female referees in football or men's basketball in the US but a few women now regularly appear as assistant referees in European and South American soccer and Germany had its first female referee of top flight men's soccer in 2017. When one remembers that the governing body of football (FIFA) banned women from playing the game from 1921 until 1971, perhaps it is not such a surprise that they seem to have been quite slow in promoting the idea of female officials. Look for this to change as the women's game itself becomes more prominent.

As well as personalizing training, exercise physiology may be used to "fool" the body into being able to do more work. Using a system that delivers oxygen at a higher concentration than atmospheric oxygen (hyperoxic training), athletes can work harder and derive benefits from that when they return to atmospheric conditions, in a similar way that athletes of the 1970s began to train at altitude and then return to sea level. Sport psychology may also "trick" athletes into thinking the temperature is not so hot, or into doing more than they might normally think they were capable of achieving, by direct electrical manipulation of the brain (Borel, 2014).

The stadium will change, too. Predictions for the future here range from facial recognition for greater security, to changes in transportation requiring less space for parking and greater space for more fans, to cooling of spectators on hot days. Super leagues are likely to proliferate in all sports, with much growth in pay-per-view and decline in broadcast events as owners try to pay for the ever-increasing salaries of superstars (Brady, 2016).

The continued growth of women's professional sports and their televising, seems a trend most likely to continue. Indeed, in summer 2019, I watched on UK broadcast (i.e. not pay per view) TV, the soccer women's World Cup, the women's (and men's) finals at Wimbledon, women's netball,

women's Ashes cricket, and the women's Open golf, through the BBC's #changethegame initiative of showing more women's top-level sport (https://www.bbc.com/sport/48078252). Any one of these women's sports (except Wimbledon, and that only because it is one of the few mixed gender events) would have been difficult to watch 25 years ago. However, free-to-air sports are currently declining and this may prove an obstacle to spreading sports to a wider population. Already, (men's) cricket in Britain is suffering this fate as the top matches are now rarely seen on free-to-air TV, and thus most of the extremely exciting cricket matches of 2019 went unseen by potential new cricket recruits.

Mixed gender teams, long a staple at the lower skill end of sports where social goals are often as important as "real" goals, are likely to become increasingly the norm at the elite level, too. Wimbledon's mixed tennis now gets greater coverage than before, when it was often thought of as almost a joke; the Olympic games (long against first women's participation, then keeping the genders strictly apart) looks set to include a greater number of mixed events in the future: in Tokyo, there will be nine new mixed gender events (in swimming, athletics/track and field, archery, judo, shooting, table tennis, triathlon) plus the continuation of mixed doubles in badminton (from its start in 1998), equestrian (from the 1960s), sailing (from 2016), and tennis (from 2012) (Price, 2019).

In the future, expect more women owners of professional teams. In the US in 2018, there were only 9 women owners of the 133 professional football, baseball, basketball and hockey teams (Szczepanek, 2018). The NFL does best with 6 of 32 but all these figures include women who co-own or co-owned with their husbands, to produce an artificially "high" number. As for head coaches, the numbers of women are even lower: in 2018 only six women were active in coaching US men's professional sports: five in the NBA and one in the NFL (Struby, 2018). In the UK, it is even fewer: the first female soccer football manager (coach) was appointed in 2014, and that to the fifth tier of the Scottish game (Kessel, 2014).

Alongside this, men's soccer football, so long the staple sport in most of the world, may finally break into the US market in a big way, led perhaps by the growth of the Latinx population. The World Cup of 2026 may be the deciding factor for the men's game's future in the US when it will be jointly hosted in the US/Mexico/Canada.

Will the Olympic movement survive into the 2030s and beyond? Already, signs of problems are clear to the International Olympic Committee (IOC): finding a city willing to host the games (especially winter) has become more difficult, once again. The "hosting problem" was temporarily solved in the 1980s with the corporatization of the 1984 Los Angeles Olympics, which made hosting an attractive proposition again for some 20 years thereafter. The previously sporadic attempts by tax payers to stop the games coming to their city (for reasons ranging from low income housing either not being built or being demolished to make way for the facilities, to forced "removal" of those who are likely to give a poor impression of the city, to perceived corruption within the IOC and locally, to security/terrorism concerns, to environmental issues about facilities built at great cost and then lying un-used or rotting afterwards, among other factors) are becoming more organized (see https://nolympicsla.com/). Costs have spiraled and the sought-after viewership of the most-desired 18-30 age group is being wooed by the IOC by ever more visually exciting sports of the non-traditional nature. Rowing (one of the few sports to be scheduled in every modern Olympic games) is a good example to show the possible changes: coastal rowing (held on or in the often-rough open seas, and rounding buoys en masse, with all the unpredictability that those features entail) is now being considered by the IOC, just as first lightweight rowing, and then possibly all "traditional" or flat water rowing is being discussed for discontinuation (Oldham, 2019). Among reasons given are cutting athlete numbers and allowing countries to bid without the need to build an expensive, purpose-built, flat water rowing facility if that does not already exist (Moran, 2019),

Will the IOC continue to insist that all athletes represent a nation or will multi-national corporations begin to field teams? At a time when athletes increasingly gain new nationalities in order to represent a team more likely to provide them with good facilities, perhaps this national representation concept will be considered old-fashioned in the same way that the ancient Olympics, once only for Greek,

free-born, male citizens gradually opened to a much wider catchment, only to find that not having a similarly-focused religion and philosophy eventually brought about their downfall.

Sports gambling is a really large part of life in many countries and with recent legalization via the US Supreme Court is likely to loom much larger in the US in the next few years (Dubner, 2019b). Opportunities for US sports betting will spread, especially online, and expect the organizations of the sports concerned (MLB, NFL, NBA, etc.) to demand and likely get a "cut" of the revenues. Fantasy sport, where people "buy" their own team roster players and, using those players' real sports statistics, score points to determine who wins what money, has grown from a small local start (not yet online) in New York in 1980 to an estimated $8 billion a year business in the US alone in 2018, involving over 60 million people. In India, over 100 million people play, mostly using cricket as their basis for teams. This currently generates money for the fantasy organizations (DraftKings and FanDuel primarily); perhaps in the future, both youth sport and those with a gambling addiction may get assistance (Fountain, 2018).

Several commentators have suggested that the apparent decline in the human attention span shown by many people may lead sports to change their format. Cricket has already shown the way, reducing some formats of the game from five days to a few hours in very limited over games such as Twenty20 (one innings of 20 overs each) in the UK or the Big Bash in Australia. Benjamin (2018) writes that MLB must do something more than tinkering to reduce game duration to attract younger fans as the current average age of spectators is 57.

PHYSICAL ACTIVITY AND RECREATION AREA PREDICTIONS

Car ownership is no longer increasing and, in some areas, is actually declining, especially among the college age population. Scooters, whether human or battery powered, skateboards, and short-term rental bicycles have become very popular modes of non-distant transportation to/from classes. Whether cycling or scootering under one's own power will win out over powered methods is currently not clear but what is clear is that bike lanes are appearing in more cities every day. Now is the time to help students realize the benefits of building cardiovascular activity into their daily lives. Not owning a car may also be a feature for seniors: on demand, self-driving cars were once confidently predicted to be "just around the corner" and even though the prediction is now more often "within 30 years," they will, eventually, help older populations remain mobile when such drivers might have been forced to give up their independence in earlier years. Thus, they may be enabled to continue to attend places for recreation.

Scherer and Whitson (2009) indicate that in Canada, keeping hockey and specifically "Hockey Night in Canada" on broadcast TV will serve as a cultural good for mass consumption by the populace. Begun on radio in 1931, and on television in 1952, it continues on CBC, although it is no longer exclusive to the broadcasting company. Thus, the move away from broadcast to pay-per-view is an international phenomenon but in other countries certain events are required to be on broadcast television. In the UK since the 1990s, events such as the men's soccer World Cup, the Grand National horse race, Wimbledon tennis, and the Olympic Games must be available live and free-to-air; other events such as England cricket test matches, The Open (golf), and the Commonwealth Games must have highlights/delayed coverage on free-to-air. As a result of the 2019 cricket World Cup coverage and England's last gasp win, many are calling for this event to return to free-to-air broadcast airing.

One blogger, Goldsmith (New Sport, 2017) opines that old sport is dead: amateur sport clubs are struggling worldwide, volunteer coaches and officials are harder to find, regional sporting organizations are in difficulties, and the Olympic Games are "close to extinction." While this argument perhaps ignores the ability of tradition and traditionalists to struggle along for decades, it is an argument colored by the fact that he claims his own company ("New Sport") is the answer to such overly conservative thinking. Goldsmith has been involved in a range of sports in Australia and while these comments are provocative, there is clearly some predictive value in them, too.

Several sources indicate that mass "unemployment" or "underemployment" may be a consequence of the growth of AI. If this occurs, then a knowledge of Roman history of the first to fourth centuries AD may be useful. A series of emperors

sought to give the free-born both "circuses" (entertainment) as well as "bread" (food) in order that they be placated. In the future, perhaps our citizens will demand (and get) ever more engaging mass public sporting spectacles and even more mass public sporting involvement for the weekend warrior.

As weekend-warrior baby-boomers realize that they *are* aging after all, and yet still wish to get a good workout, new equipment will likely come along to help them. One recent example of such is stand up cycling, which can give a similar workout for former/injured runners or cyclists but one which is elliptical, low impact and more full body. Other trends in mass sport are for better monitoring for the recreational player (with money) from golf club head information gleaned from small accelerometers, to sensors in the end of a baseball bat that record swing data, to the tennis and rowing examples provided above. Technology may also assist with the actual powering of recreation centers: in Germany, there are public and private gyms where the energy captured from treadmills, rowing machines and spin bikes has been shown to work in a limited way with lighting of the facility. Even the once humble sneaker is now, and in the future will be more so, an instrument of technology. The superlight Nike "Vaporfly," four years ago seen only on the feet of the elite, is now available to all (who can pay $250-300) and it is the recreational runner who may gain the most from such shoes (Higgins, 2019). The ever swifter up-take of what was once available only to the elite by the masses will continue.

Although the beneficial effects of exercise are now very well established and the cost of physical inactivity to developed nations is exorbitant, rising and spreading (Carlson, et al., 2015), the numbers of those who are obese/overweight continue to increase. What if there were an alternative to exercise--a pill, that gave the same benefits, without the effort? For those in the field of physical activity, mimicking the effects of exercise via a pill may sound counter-intuitive but if the end result is a social good, perhaps it deserves a look. A drug that works on the body in the way exercise does has been developed over the past few years and in the Beijing Olympics in 2008, some cyclists were caught using it. In the future, perhaps additional breakthroughs in research may make such a drug widely available but the ethical questions of who should use it, when, and how, will become very important, along with comparisons to "real exercise" benefits (Dubner, 2019a).

Whereas the 1850s-1890s was the heyday of team sport invention/codification, the 2020s-2040s may show a new peak of technology usage in sports. And as to possible new sports—space travel may finally be possible for ordinary people. Travel to distant planets will require much more research into the effects of long-term exposure to reduced gravity on the human body, already under way in many research labs. Moon golf (not only confined to Al Shepard) anyone? Cyborg soccer? Jetpack quidditch? (Gravity, 2019).

ABOUT THE AUTHOR

Dr. Shirley Reekie received an undergraduate degree from I.M. Marsh College of Physical Education, Liverpool, and the University of Liverpool, UK and a master's degree from the University of Leeds. Following three years teaching physical education, English and geography at Keswick School, she earned a Ph.D. from The Ohio State University with a dissertation entitled "A History of Sport and Recreation for Women in Great Britain 1700-1850." Shirley came to SJSU in 1982 and had one book "Sailing Made Simple," published in 1986, another "Bean Bags to Bod Pods" that chronicles the Kinesiology Department's 150 years, published in 2012 and a third book, "Time and Tide: A History of Trearddur Bay Sailing Club 1919-2019" was published in 2019. Shirley served as Chair of the Department of Kinesiology from 2006-2014.

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ABOUT THE JOHN MASSENGALE PAPER

Formally known as the Western Society Review Papers, the John Massengale Paper is so named to reflect the outstanding contributions Dr. Massengale made to the WSKW organization. The John Massengale paper author is selected by the JKW Editorial Board and approved by the WSKW Board of Directors.

Dr. John Massengale (1939-2013) served as the 1999 Western College Physical Education Society (which is now the WSKW) President. He began his professional academic career in 1969 at Eastern Washington University, before retiring in 2008 from UNLV. Dr. Massengale was a respected leader and mentor during his nearly forty years of service to the field of physical education. He steadfastly defended the importance of physical education and helped shape the field into what it is today. Dr. Massengale was a lifelong learner and physical education enthusiast who served as a P.E. teacher, coach, professor, department chair, dean, professional association president, and respected leader during his career.

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