IS CORONAVIRUS SPEEDING THE LINK BETWEEN MEGATREND & SPORT?

MEGATREND & SPORT: UN'ACCELERAZIONE DAL CORONAVIRUS?

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Abstract

The time of the coronavirus pandemic makes us aware of the social changes that this has caused, and that mankind has experienced; changes inherent also to the world of professional and/or amateur sport. A time out has been called. At the restart, will everything be as before or will the hypotheses of change that various analysts had prefigured also restart? Is any change desirable? If yes, in which direction? Thanks to digitization, people are more informed and connected; changes require new approaches to education and the education/training system must shape critical people, open to novelties and capable of working in a team. Rather than having a business perspective, sport should prefer a systemic perspective: sport is a multi-valued system. The paper will analyze futuristic hypotheses, deriving from Australian, American, and European experiences; the results that will be intertwined, will be a first step in outlining whether the pandemic will produce appreciable, achievable, or desirable changes, in the world of sport.

La pandemia da coronavirus, ci rende coscienti dei cambiamenti sociali che questa ha provocato, e che il genere umano ha vissuto; cambiamenti inerenti anche il mondo dello sport professionistico e/o amatoriale. E' stato chiamato un time-out. Alla ripartenza, tutto sarà come prima o ripartiranno le ipotesi di cambiamento che vari analisti avevano prefigurato? È auspicabile qualche cambiamento? In quale direzione? Grazie alla digitalizzazione, le persone sono più informate e collegate; i cambiamenti richiedono nuovi approcci alla formazione e il sistema educativo/ formativo, deve plasmare persone critiche, aperte alle novità e capaci di lavorare in squadra. All'ottica aziendale, si dovrebbe preferire l'ottica sistemica: lo sport è un sistema plurivaloriale. Il paper analizzerà le ipotesi futuristiche, di esperienze Australiane, Americane, ed Europee; i risultati che si intrec-ceranno, saranno un primo step per delineare se la pandemia produrrà cambiamenti apprezzabili, conseguibili, o auspicabili, nel mondo dello sport.

Keywords

Megatrend, analysis of the future, sportiness, globalization of sport, utopia / dystopia.

1. Introduction

The "anticipation discipline" is the visible horizon in the field of development of advanced applications, which are part of the innovations inherent to the "fourth industrial revolution" (Schwab, 2015); it's the great leap forward we needed also to face the dangers deriving from the ongoing unpredictable transformations - not least the coronavirus pandemic- and requires avoiding to look to the future in a naive way, imagining or hoping that it will be the continuation of the present.

The scope of *future studies* shows that there are theoretical approaches and methods that help to intercept and recognize changes; in Italy, recently, thanks especially to the University of Trento, we already have familiarity in this area (Bonesini et all, 2017). The world of sports with the coronavirus pandemic has undergone a freeze, a sort of still image.

In other times we would have easily hypothesized - knowing the canovaccio- the continuation of the sport frame in the film of existence: unfortunately, the pandemic is not a stop and go, so this work would like to hypothesize the possible scenarios, - *sport is the activity which most has an assonance with the term globalization* ¹- and what positive surprises or what problems we will have to face in order to eventually choose the ones most adhering to our idea, or rather, which cultural type of sport we would like to offer to the generations to come.

We could end up with results between the utopian and the dystopian².

2. Megatrends

Megatrends are system analysis that have a profound impact on society, economy and culture; interacting and analyzing different events, they indicate the changes, that is, the trends, which even if born autonomously can intersect and completely change their function. The term is little known, yet, unwittingly, we already know various types: those that we classically call epochal, the *industrial revolution*, or in recent years, the *aging of the population*, or strategic ones, *new consumption models*, technological innovation, *e-commerce*, or even what we might call pervasive *social media*, the *app-economy*. That is to say that they shape the future starting from the present, following the macro-trends, linked to structural factors such as demography, environment, scientific and / or technological innovation, mentality, which have a strong impact on how society, economy, culture and business evolve. The term was coined by J. Naisbitt,³ in 1982. Metaphorically we could define megatrends as phenomena, which remain hidden to inattentive eyes, as they only superficially manifest mediated effects, which are clearly revealed only later on, as in the karst streams that emerge after having made himself heard for a long time while remaining unspoken. Better still, however, is the analogy between megatrends and weather forecasts:

On 10/14/2015 meteorologists detected an area of low pressure that was expanding in the

¹ Paradoxically, 211 national teams are affiliated to FIFA (Fédération Internationale de Football Association); 193 countries belong to the UN; sport is a "lingua franca" accessible to all, which prompts people to face with anyone in the name of an "objective" result that is independent of race, economic and social condition (Castaldo, 2019; Aledda, 2005).

By *dystopia*, we mean a forecast, description or representation of future things wherewith negative situations, developments, political-social and technological structures are prefigured; *utopia* (T. Moro, 1516) is a term that refers to the formulation of a political, social, religious structure that is not reflected in reality but which is proposed as an ideal and as a model (not achievable, and / or abstract).

³ John Naisbitt, an international futurologist, collaborated with the Kennedy and Johnson administrations, and taught at the University of Moscow, Harvard and Nanjing. In Megatrends 2000, he presents the trends for the 90s.

Gulf of Tehuanteptec, Pacific Ocean: no element allowed unusual or suspicious considerations; subsequently, the lo-pressure area slowly developed and was classified as a tropical disturbance. Within a few hours, combining with new conditions, the phenomenon intensified reaching the maximum degree of the *Saffir-Simpson scale*. Hurricane Patricia was born, one of the most powerful and dangerous climatic events ever observed. Anticipating the possible changes affecting human life such as demographic, technological, social, environmental, biopolitical or geopolitical elements, has much in common with meteorological forecasts. Both disciplines monitor a wide range of *micro-level forces* that constantly shape and transform the environment in which we live, in order to identify all those apparently weak signals, which can prove to be of fundamental importance and become powerful forces of change (Billari , 2015; Dunlap et all, 2010). Naisbitt's work takes its beginnings in the *Institute for the future*, (1968, Palo Alto), a non-profit organization, born as a spin-off of Rand corporations. From this *overture*, similar experiences will start in other countries, favoring the birth in 1973 of the *World Futures Studies Federation*. In the 2013 we even see the birth of the *Italian institute for the future*.

3. The future of sport, Australia.

Australians love sports; it is an integral part of their cultural identity. The majority of Australians play, watch and enjoy sports; at the same time, Australia is establishing its future on science and innovation. Its national scientific agency, CSIRO, is an incubator of ideas, technologies, skills, to encourage the increase in prosperity, growth, health and sustainability. It serves governments, industries, businesses and communities across the nation. The Australian Sports Commission (ASC) has partnered with Australian Peak Science Agency, the Commonwealth Scientific and the Industrial Research Organization (CSIRO), to conduct jointly researches into the future of sport. The results were published in April 2013. The sports practiced in Australia, as we know them, are changing; the CSIRO report will be important in shaping the government's policy, investment and planning strategies in the long run, and the population. The report highlights six megatrends that would redefine the sports sector in the future. We report them in tabular form using the left side to show them in their original formulation, alongside them with an example for idiomatic expressions that are not directly understandable:

Tab. n° 1

CSIRO for ASC	Our exemplification
1 A perfect fit Personalised sport for health and fitness	Australians are more health conscious; <i>ad personam</i> sports and fitness activities will increase; people will do sports to get fit, rather than get fit to play sports.
2From extreme to main- stream The rise of lifestyle sports	Unconventional sports for everyone: the rise of an adventurous lifestyle and alternative sports (free climbing, parkour,) with complex and advanced skills and elements of intrinsic danger and / or thrill seeking. The activity will be characterized as a lifestyle, with a strong identity and self-expression.
3More than sport The attainment of health, community and overseas aid objectives via sport	Sport helps to achieve mental and physical health, crime prevention, social development and international cooperation goals; It is effective to reduce rising rates of obesity and chronic diseases. It is very effective in achieving social inclusion for marginalized groups and reducing crime rates. It can build bridges to other countries and foster peace, development and foreign policy goals.

4Everybody's game Demographic, generational and cultural change	Sport for all regardless age: the aging of the population is a constant fact; this will change the sports practiced and the way you practice them. Societies will continue to be multicultural, with different sports habits and recreational preferences. In order to have high participation rates, the elderly will have to be satisfied and the changing cultural structure of the individual countries must be taken care of. The challenge will be to interest and involve other cultures.
5New wealth, new talent Economic growth and sports development in Asia	With the increase in income, Asian peoples will be more interested in sport. The Asian countries will invest in sport skills and, especially for China, there will be better results for gold at the Olympics. This could create new markets for television, tourism, equipment, services and sporting events
6Tracksuits to business suits Market pressures and new business models	The market will exert additional pressure; elite athletes will enjoy considerable wages and sponsorships, but not for all disciplines: those with high wages change the <i>appeal</i> of those with low wages. Non-profit sports associations will be replaced by organizations with more formal <i>governance</i> , with a weakening of volunteering. The cost of participation will increase and will be an obstacle to the participation of many

source: Our elaboration from The future of sport AU, 2015.

The sports that Australians play are the result of cultural evolution over the past two centuries. In 2040 Australians are likely to still follow and participate in large numbers in AFL, Cricket, Rugby, Touch football, Netball, Sailing, Football, Swimming, Basketball, Bocce, and will continue to compete in the Olympics, Paralympics and other international events. However, for public and private sector decision makers, the change on the horizon will require new responses: new markets will open while others will change, or even close. People are changing the way they allocate their time, or access information and interact with each other. These changes are creating challenges and opportunities for the Australian sports sector.

4. The future of sport, USA.

In 2015, Future.org was born, a private organization with three companies: Delaware North; Jacobs Institute; Attention Span Media. Its mission is to look to the future of the main sectors with surveys and research. In a few years, they published two reports (2015, 2016) on the future of sport. The results, also visible online, converge on both innovative and existing data in the Australian report. The 2015 report is introduced by Chairman Jeremy M. Jacobs as follows:

Sport is timeless, but each generation, new technologies and different social dynamics have changed and intensified the way we live sport. [...] The changes on the horizon are likely to be even more disruptive. Advances in medicine are allowing us to alter the body of athletes. The computing power of smartphones doubles every 18 months. The appetite for sports is almost insatiable: fans expect full access passages in the clubhouse and boardroom. [...] Discussing the future of our sector can cause anxiety, simply because it seems very uncertain. Nobody wants to bet on the wrong trend. Some predictions of these futurists will come true, and others will not; historians one day will write the right chapter. We want the next generation to look back on this moment and appreciate the foundations we have laid for them. We report in tabular form the points that the report offers (on the left) accompanying them with annotations and examples (on the right).

Tab. n° 2

Anno 2015	Our exemplification
The Stadium	Will going to stadiums continue to be important in sports culture? External screen technologies will raise.
Broad- casting	How will the broadcasts change? Google, Facebook or other players will overtake the traditional broadcasters and offer their vision for free.
The Athlete	How will scientific innovations change equity, safety, and the meaning of sport? Professional and school sports will become <i>like NASCAR</i> , (National Association for Stock Car Auto Racing) with the human body enhanced as standard cars. (<i>Today we would say enhancement for everyone</i> . Editor's note)
The Third Venue	Many fans, due to the high costs, do not participate in live events. Where will they turn? <i>Third places</i> will emerge, as spaces to experience augmented reality, interactive technology, holographic replays and 3D screens in dedicated places.
Sponsor + Advertising	How will brands adapt to sports content and distribution formats? Red Bull's approach as a sponsor will become a rule rather than an exception. Not only the brand name on the stadium: the sport itself will embody the brand.
Teams + Leagues	With access to global sport, which teams, which sports, will win the race to become a global superbrand? For this reason, some rules are standardized internationally: Japanese baseball adopts the largest MLB ball, while European basketball adopts the NBA rules; there will be similar effects to the standardization of rails and containers to unify the sport trade.
E-Sports + Fantasy Sports	The definition of sport will gradually change as videos and games converge in real life. The Dallas Cowboys stadium will sold out because the fans will watch <i>Diamond Vision</i> , that is teenagers playing <i>League of Legends</i> , or <i>Fantasy of Azeroth</i> , role-playing games through video games. Rise of exergames
The Fan	Being a fan is no longer equivalent to just being a face in the crowd. Technology will change the relationship between fans and teams. The social media feedback circuit and the 24h /7d news cycle will give greater influence on the decision-making process of teams and championships. Super fans will be born(eg <i>Clipper Darrell</i> , <i>superfan of L. A. Clippers</i> (Editor's note);is easy to find analogies: the influencers.
Extreme + Adventure Sports	On the rise, extreme sports will challenge professional and amateur sports, for the most followed sports category title. <i>Action cam</i> sales grow nearly 50% annually (USA); videos produced with GoPro on YouTube will grow exponentially. Extreme sports with their videos will be considered <i>juggernaut</i> (unstoppable, real or metaphorical force).
Payments + Ticketing	Ticketing with AI continues: the system will maximize wishes with the sales platforms (Facebook), which have more detailed data on the buyer than the old stores; the ticket can be personalized in various ways: Do you want to sit near Facebook friends? DO you want to send 35 employees to the game as a reward? Do you want to be close to other families? Do you want to go with guys or meet single women? The system can handle everything. All the various reasons why people want to participate in the sports show can be extracted and evaluated, based on their personal profile.
Fanbase Economics	Some futurists predict that by 2030 over 2 billion jobs will disappear for automation: cars without a driver will eliminate taxis and delivery vehicles, as well as staff from parking lots and traffic police departments. No kiosks, but vending machines; robots will replace services in fast food restaurants. Lower remuneration for teachers, as education will be interspersed with online courses.

source: Our elaboration from The future of sport 2015

In the 2016 report, the authors present a report based on the acceleration that digital technologies have produced in sport and the related trends that may arise. We report in tabular form

the summary of the ten points that the report offers (on the left) accompanying them with annotations and examples (on the right).

Tab. n° 3

	AND II J	
Anno 2016	Our Exemplifications	
Youth Sports Reform	Skyrocketing costs, obsessive rankings; each competition is a judgment on the future of many little athletes. Every year unsatisfied parents take their children out of sports in protest; every year, other parents push children to play. In 1990 Jennifer Capriati at 13 years old, reaches the WTA finals; at 14, she ranks 6th in the world, and can become the greatest American player. At 17, Capriati wins in Sydney, but begins and alternates a decline, dictated by bad relationships with his father and by the earliness of the impact with professionals. Following these events, the WTA will establish strict regulations on child prodigy tennis players.	
Alt-Athletes	Not just physical exercise, but also seeking the meaning, identity and belonging. Climbers and surfers look for experiences that connect them to natural environments. Yoga and Tai Chi devotees seek intercultural spiritual transcendence. 42% of the US gym market is made up of clubs that cater to specific requests, such as yoga, pilates, Brazilian jiu-jitsu, dance, rock climbing, CrossFit, etc., with rates of 450% per year from 2010. At this rate, the gyms of non-strictu sensu athletes will soon surpass the traditional gym.	
Machine Med- icine	The wasted salary for injured players affect up to 89% in the NFL team's losing record. It is not only necessary to heal injuries from traumas related to sport: you have to foresee and avoid them completely. For this reason, a high number of athletes are monitored with sensors. So much data is collected, in so many new ways, that we can distract ourselves from the real question: what do we do with it? Are they just a way to have effective / efficient athletes?	
College Mega- business	The era when college sports did their best to imitate professional sports is over. The inversion will increase: professional sports championships will have to keep an eye on the way in which university sports are played, produced and consumed. In Italy we would say "pay attention to the minor series".	
The Epic Battle	Traditional sports risk losing a significant portion of their audience. Millions of post-millennials around the world idolize esports champions like Lee "Faker" Sang-hyeok from South Korea and Enrique "xPeke" Martinez in Spain. Many ignore who won the Premier League, but not the CDEC Gaming which awards \$ 2.8m to the 2015 championship.	
Betting / Fanta- sy Convergence	Beyond the classic bets: the fantasport are games in which the participants are required to create virtual sports formations, choosing among real professional team sportsmen. Fantasport grows rapidly to become a sector of \$ 1.1 billion, mainly for advertising; the game is enhanced by the offer of prizes; this has tripled the market of fanta-sport.	
Ar-Vr Roadmap	AR and VR are acronyms that stand for "Augmented Reality" and "Virtual Reality"; AR refers to a technology capable of superimposing the digital world on the offline world, "increasing" the user's perception of the latter by the user. VR, on the other hand, refers to a technology capable of creating an entirely digital reality. It is a total reconstruction from scratch of a virtual environment, a simulation of actual reality aimed at the complete immersion of the user, who finds himself transported in a sort of "new dimension". We find major applications in videogaming that use special glasses and headphones.	

Neurocoaching	Socio-cognitive neuroscience shows that the brain is a predominantly social organ; NeuroCoaching is a coaching model that uses an approach based on these discoveries to help individuals, groups and companies to identify and release their most significant potentials and to express them concretely and effectively. In addition to the parameters of speed, power and agility, the mental aspects of sports are also analyzed in neuronal abilities. Next evolution of this field, neurohacking (by hackers): application of the principles of computer piracy in the analysis of the functioning of the brain and central nervous system, providing specific brain-body states optimized for individual sports and individual athletes. Often the achievement of results is bound to the use of <i>Transcranial Magnetic Stimulation</i> . Muscle memory is not in the muscles. It is in the brain. Electrical stimulation of <i>tDCS</i> neurons accelerates learning and improves neural boost.
Globalized Fandom	The fan community is globalizing. Migration, tourism and universal access with broad-casters and social media, unlock billions of potential fans who do not live in the same city and do not speak the same language. The next 10 years will be a gold rush, as professional teams and leagues will compete to claim this emerging audience.
Generation Remix	The term Generation Z (Post-Millennial, or Zoomer), identifies those born after the Millennials, generally limited by the second half of the 90s and the end of the 2000s. An important aspect of this generation is its widespread use of Internet almost from birth. Zoomers are considered accustomed to the use of technology and social media, which correspond to their socialization process. Generation Z lives in the convergence of fashion, sport, culture and techno. They experiment - through clothing - sport and vice versa. They have a communicative style made of postures, non-verbal, encrypted slangs with references to music; sportswear is a communication / exhibition channel.

source: Our elaboration from The future of sport 2016

5. The future of sport, Europa

The Zukunftsinstitut (IZA, Institut zur Zukunft der Arbeit) is a private and independent German research center on labor economics, based in Bonn; founded in 1998, has significantly influenced the trend and research in Germany since birth. Today the institute is among the most influential reflection groups in the European trend and in future research and is the source of information and inspiration for all decision-makers or *spin-doctors*. The core business they face on a daily basis is simply made up of questions: what changes - which trends and megatrends - shape our present and what conclusions can be drawn for the future of society, companies and culture? In 2014 this institute published a work: Sportivity (Muntschick et al., 2014).

In the presentation, they offer this caption: *The future will no longer be a matter of breaking records, but of anchoring a new attitude to life in everyday life. This phenomenon will change sport in the coming years. The society of the 21st century. will create a completely new sporting universe.* We report in tabular form the summary of the five points that the report offers (on the left) accompanying them with annotations and examples (on the right).

Tab. n° 4

Sportivity step	exemplification
Sport must be brought to the people and not the people to sport	Sport will become a matter of time, so the spheres of work and leisure will merge more and more. Yoga, fitness or other classes during the lunch break are no longer a rarity. People want to remain independent from time and place, so <i>sport has to go to people, not people to sport.</i>
Informal sport commu nities will replace sport clubs culture	The culture of the movement and / or sport always evolves further away from the clubs, toward informal sports community; this is particularly true among adults, the group of workers aged 40 to 50. With careers and family, these are already under pressure; an additional obligation in a club is not favored; membership in flexible sports clubs will be required.

Technology is the new co-trainer	Technology is becoming our coach; the rapid development of wearable devices is changing sports. Smart clothing can correct movements during exercises; lower costs will allow results even for amateur athletes. Sales of wearables devices are expected to double by 2022.
Sports are happening in a real-digital world	The barriers between the real and the digital will become less and less separate; with the advertising campaign of Pokémon Go, or Counterstrike <i>shooter multiplayer video game</i> , execution groups have formed without age barriers; an example: the <i>Silver Snipers</i> , a Swedish team made up exclusively of people over 60 gamers born with the aim of expanding the audience of virtual competitions to an older audience. The goal is to differentiate the world of video games and demonstrate that age is only a number. (Initiative sponsored by Lenovo.NdA)
Sport is lifestyle and needs redefining	Sport is an attitude towards life, and in its different aspects, it is a lifestyle, interpretable in a slow, extreme or self-expression way. Sport is not just a performance: every form of movement of every human being - with or without the help of a machine - has its justification.

source: Our elaboration from Sportivity 2014

6. Data Analysis

Although statistically not completely superimposable, a *fil-rouge* between the twenty-one points of the various tables shown can be extrapolated:

Artificial intelligence and machine learning (data analysis capable of automating the construction of analytical models) allow professional and non-professional athletes, and also technical staff, to access predictive analyzes and detailed suggestions that allow the optimization of a strategy or a technical gesture. Professional clubs, prestigious tournaments and an increasing number of sports leagues resort to the use of Big Data using information, as a useful tool to study and improve performance. With *Wearables* and *Internet of Things*, sport becomes hi-tech and sports wearables become a support to monitor the athlete's health, like his physical condition during the performance or his state of hydration or fatigue; for athletes of any age, and of any grade.

Computer Science, Artificial Intelligence and Machine Learning together with Neurosciences are the paradigm (Dell'Aversana, 2019) that Australian and American reports mainly present, and which offer a strong possibility of using technology in a congruent way with human needs, in this case of sport.

The European report also intersects with overseas models several times, leaving the user's cognitive and emotional aspects to be leaked even more. The difference between US and EU economic *governance* models would still seem respected.

A subtle, profound *sentiment* accompanies these analysis, overcoming the aspects related to *governance* or the implementation of the economic aspects: a request for greater freedom from the constraints of the classic methods of carrying out physical and / or sports activityNew places, new specialties, new performances.

7. Conclusions

The Covid-19 pandemic has provoked an unprecedented health and economic crisis for European society. The fitness and physical activity sector in particular has seen major work-places, health clubs and fitness centers shut down in most countries in Europe and this financial impact will continue to have a negative effect for many months to come. At the same time, we have seen governments and media recognize, as never before, the benefits of individual's phys-

ical, social and mental well-being; new studies and data clearly show that a solid majority of consumers and members of sports communities are eager to return to their activities and their fitness and wellness clubs.

Using purely sporting language, the pandemic emergency forced us into an unprecedented global time-out; the recovery could offer an opportunity for the sports world to emerge stronger, better or perhaps fundamentally different from how it has ever manifested itself in history.

The data submitted essentially say that there is a gap: on the one hand the economic aspects, on the other the health aspects. The fulcrum of the two blades express a mix made by Computer Science, Artificial Intelligence, Machine Learning, and Neurosciences. Is the meeting between the two blades the sport or lifestyle of the future?

8. Between utopia and dystopia

Since the dawn of time sport has never been perfect⁴; the temptation to look to the past or Retrotopia, is our recent attitude to place in the past time - and no longer in the future - the imagination of a better society (Bauman, 2017); very often, in the sports field, we find that many think and plan a return backwards as the best possible solution to the present evils in this sector. The future, even or particularly in sporting activities, creates anxiety; it is the symptom of a cultural myopia, which would tend to make the sacredness of sport immutable. A change of perspective is crucial: a systemic approach, with sport as a *multi-value system, based on Pedagogical, Sociological, Medical, Cultural, Economic, Ludic values* (Castaldo, 2010), a system that if integrated, can accompany, by routing it, the significant push resulting from the current megatrends examined. We will have to adapt to the needs of a new normality influenced by the C19 and unlock the potential of this sector, currently considered *only* as an important element of economy and public health, adding to it the a stronger European position, which sees sport as a *relational good* (Castaldo, 2010; Bruni, 2011).

Nobody would choose to live without friends, though was provided in abundance with all other goods (Aristotle, Nicomachean Ethics)

Bibliography and essential sitography

Aledda, A., Fabbris, L. & Spallino, A. (2005). Multiculturalità e Sport. Atti del XV Congresso del Panathlon International, Milano, F. Angeli.

Bauman, Z., (2017), Retrotopia. (trad. di M. Cupellaro), Bari-Roma, Laterza.

Billari F.C. (2015) Integrating macro- and micro-level approaches in the explanation of population change. *Population Studies*, 69:sup1, S11-S20

Bonesini A., Brunori F., Cristoforetti L., Scolozzi R., (2017), (a cura di): Made in Future, Connessioni, paesaggi, responsabilità Progetto sperimentale di didattica orientata al futuro e al pensiero sistemistico. Trento, Reverdito Ed.

Bruni L., (2011), Le bonheur et les biens relationnels, *Revue du MAUSS permanente*, 5-12 [en ligne].

Castaldo F.B., (2010) Sport management: un indirizzo etico-filosofico. Napoli, Ed. Albano . Castaldo F.B., (2019), Sportività liquida. Formazione & Insegnamento XVII, Pensa MultiMe-

⁴ According to Lauren Schwaar, the famous basketball coach, founder of the Fathom Performance website, for every example of solidarity and congruence in the world of sport, fifty cases of corruption, capitalist pre-eminence, systemic inequality or abuse can be found. www.sportanddev. org May 4, 2020

dia Editore

Castaldo, F.B. (2013). Bioethic(s): bridge to the future (of sport). UNESCO Chair in Bioethics 9th World Conference Bioethics, Medical Ethics & Health Law Towards the 21st Century, 11-19/12. Naples.

Dell'Aversana P. (2019) Complessità, Machine Learning e Neuroscienze Introduzione ai nuovi strumenti per la formazione manageriale. *Performance Management Review.org* [online].

Dunlap E, Johnson BD, Kotarba JA, Fackler JL. (2010) Macro-level social forces and micro-level consequences: poverty, alternate occupations, and drug dealing. *J Ethn Subst Abuse*.;9(2):115-127.

Hajkowicz, S.A., Cook, H., Wilhelmseder, L., Boughen, N., (2013), The Future of Australian Sport: Megatrends shaping the sports sector over coming decades. A Consultancy Report for the Australian Sports Commission. CSIRO, Australia.

Miah A. (2017), Sport 2.0: transforming sports for a digital world. Cambridge, Mass.; London: MIT press.

Muntschick V., Kirig A., Huber T., (2014) Sportivity. Bonn, DE. Ed. Zukunftsinstitut

Sandel M. J., (2013) Quello che i soldi non possono comprare: I limiti morali del mercato. Milano Feltrinelli

Schwab K., (2015) The Fourth Industrial Revolution Foreign Affairs Magazine.

www. http://futureof.org/sports-2015

www. http://futureof.org/sports-2016

www. https://www.zukunftsinstitut.de