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USE OF TECHNOLOGY IN THE DEVELOPMENT OF SPORTS ACTIVITIES

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ABSTRACT: THE ROLE OF TECHNOLOGY IN SPORTS

From early on sport has always been very important to humans. You can enjoy it either by playing or watching it but either way it is about winning or seeing someone (or some team) win. To be that winning one an athlete, his/her team, his/her sponsors and whoever might have an influence on the athlete's career, will keep improving his/her condition, training methods and, very important, the equipment that is being used. And here comes a major conflict point in today's sports: Until which point should technology be used in sports? And what is its role?

KEYWORDS: sport and technology , clinical, quasi-legal inquiries.

TECHNOLOGY AS A PART OF SOCIETY AND SPORT – OR NOT?

This blog I found, is from the sport and technology debate at the British science festival in 2011 and the videos of the speakers are very powerful. Professor Haake claims that sport and technology have always coexisted and that technology has always been a part of sports. It started with starting heels for the sprints at the Olympics, the sports equipment like a soccer ball, a lawn mower which promoted lawn sports and a timer, and ended (for now) with portable 3D cameras, high speed videos and new materials like Titanium, to make sport equipment lighter. According to Professor Haake sport and technology reflect society and those advancement

should be allowed – at least up to a certain point. Dr. Parry, also participating in the debate, also claims that technology changes the sporting events into better ones but for him it is a question of which bits of technology WE want. The people want to see the best athlete and not the best equipment, which can turn the competition into an “unfair” game.

TECHNOLOGY AS AN UNNECESSARY INTERVENTION INTO NATURAL JUSTICE

And then there are the more concrete anti-technology opinions. M_Cambel123 states that decision reviews, video replays and goal-line technology ruin the spectacle of games, and reduce them to clinical, quasi-legal inquiries. The administrators always want to get everything right 100% of the time. This though takes the fun out of the game and up to this point sport had

survived as the spectacle, which enthral us without a sub-committee forming to discuss every contentious decision. Furthermore the blog explains that what these legal guys will never understand is that sport embraces natural justice; their intervention is not necessary. But they stand behind the argument around “well you’ve got the technology there, doesn’t do any harm to use it”. But according to the author it does do harm.

TECHNOLOGY AS A MODERN TOOL IN SPORTS

According to Lionjkt the RFID (Radio Frequency Identification) can enhance the games

themselves, secure ticketing and boost the quality of the in-stadium spectator experience. It can add value and visibility to different kinds of sporting events and can avoid bad offside decisions. But not only in soccer but also in other sports, like tennis, or marathon racing, RFID is used. It provides a very accurate timing of each athlete (as in the marathon racing) and also helpful video evidence when it comes to off decisions in tennis and similar sports (which are also enhanced by different methods like the Hawk-Eye line-calling system).

SPORT SPECIFIC

Tennis - it is now standard at the major tennis tournaments for a line review system to be in place, with players given power to review contentious line calls. It is powered by the Hawk-Eye ball tracking system. See more about Hawk Eye for Tennis.

Soccer / Football - Soccer is looking at joining the 21st century, looking at various technologies for the goal line to determine if the pass passes over the line or not.

Basketball - the NBA uses replay vision to review 'last touch' decisions in the final two minutes of games, and also to determine whether players release the ball before the shot clock expires.

Cricket - technology in cricket has been driven by advances in the TV coverage. Things that were once extra information provided by the TV networks are now being incorporated into the decision referral system (DRS), such as hawk-eye and hot spot, and maybe even the old favorite snicko. See more about Cricket Technology.

Aussie Rules Football - umpire review system has also been implemented in AFL, with an off field umpire in certain circumstances adjudicating on whether the ball passes over the line or is touched, using video evidence via multiple camera angles. See more about Technology in AFL.

Baseball - In 2014 a challenge system was put in place for the MLB to use replays to challenge certain umpiring decisions.

Rugby League - The NRL was an early implementer of using the video referee to help adjudicate questionable tries.

COMPUTER SOFTWARE

There are numerous software packages that are designed for fitness and nutrition professionals to organize data and produce reports, ideal for visitors to this site. Here are a couple of packages that come recommended by Top end Sports.

Team Beep Test— the most versatile and useful software for conducting and recording results of the beep / beep test, with results recorded directly onto your computer.

Body Bite— a universal standalone computer software program specially developed to comprehensively organize and manage all the information associated with nutrition, training and fitness.

What are the benefits of advanced sporting technologies?

Recent developments in sporting technologies have created a variety of products aimed at improving and increasing athletic performance. Athletic health can be maintained and observed, and injuries treated, through the production of modern sporting technologies such as heart rate monitors, pedometers and body-fat monitors. Through this, a greater deepened knowledge of the human body and its potential has been recognised, allowing athletes to train and compete in sports to a much older age. Participant safety at all times has also been made possible through the development of certain sporting equipment, such as helmets and body protection which are used in boxing and ice hockey to help prevent injuries. Modern sporting technologies have also made competition judging easier and more accurate, and spectator interest and excitement is enhanced by broadcasting and in-stadium displays (scoreboards).

Benefits

The recent developments and innovations in sports technologies have made it possible to produce various types of products designed to improve and increase athletic performance. With these technologies, athletic health can also be observed and maintained while injuries are also being treated. These are possible with the help of advanced sporting technologies like monitors for heart rates, monitors for body fat, pedometers, etc.

Because of such advancement in the field of sporting technologies, a profound sense of knowledge is recognized when it comes to the potential of the human body. This allows the athletes to undergo training and join sports competitions even when they are already old. These sporting technologies and equipment have also been developed to enhance the safety of every athlete participating in any sports events. Some of the common sporting tools and equipment which have been developed to enhance safety include helmets and other types of body protection used in the sports such as ice hockey and boxing. All of these are designed to help in the prevention of injuries.

With the aid of modern and advanced sporting technologies, judging and scoring have also become more precise and accurate. The interests and excitements of the spectators are also enhanced with the aid of stadium displays like scoreboards and modern broadcasting equipment.

How can technology be used to analyse athletic performance?

Technologies such as CAD (Computer Aided Design) can play a major role in the improvement of sporting equipment. CAD allows virtual design and testing techniques to be applied to all aspects of sport and leisure equipment research and development. CAD offers an efficient means of considering and assessing new products and ideas, and is primarily used to improve safety, comfort and effectiveness of specialised sports equipment. CAD is also used regularly in the justification of physical facts and figures, and for both competitive and training circumstances. Other technologies such as 'smart' equipment can be used to evaluate human performance. These include sensors and computers as part of their utility and can be used by athletes as part of their training regime. Examples of 'smart' equipment technologies include devices used for exercise stress testing and cardiovascular assessment, human reaction time and frequency of movement meters, and jump and run characteristics devices. More modern technologies such as motion capture analysis are also used to analyse athletic performance. This involves digitally recording the movements of athletes during sporting activities which can then be used for personal performance evaluation by the sports person, for enhanced spectator entertainment, and in some cases medical treatment.

What are the ethical considerations surrounding the use of technology in sports?

The use of modern technologies in sport may mean that competition at the uppermost level is only affordable to the leading top athletes due to the potential high costs of specialised sports equipment. In those sports incorporating individuals with a particular disability, there are a variety of methods in which assistance can be given. For example, modifications to buildings can be made to make them wheelchair accessible, specialised equipment can also be produced and training to sports members can be offered in order to give specific assistance to those with a disability.

CONCLUSION

The introduction of new technologies has created new challenges for umpires and referees. These have come about because epistemological privilege has been re-distributed, leading to disharmony with ontological authority and to transparent injustice or, with some devices, false transparency. We have shown that many of these problems could be easily and cheaply resolved if the purpose of the technology was no longer seen as getting things exactly right but as avoiding big mistakes.

The difference between these two approaches was illustrated by the differences between cricket and tennis. Cricket, we argued, has implemented technology in a way that makes its uncertainties clear to all. In so doing, it also contributes to enriching public discourse about technology

by making scientific issues of measurement error a visible part of its decision-making. In contrast, tennis uses technology in a way that resembles the genetic science of CSI crime fiction. We have argued that tennis would be better served, as would the viewing public, if the ITF adopted a similar procedure to that used in cricket.

To put these arguments in more general terms, our central claim is that SDAs should be used to ensure that the large, visible, errors that lead to transparent injustice are eliminated while the normal traditions of judgement based on human perception and presumptive justice are maintained in the case of marginal decisions. This would also maximise the continuity with the traditions of the individual sport and its practice outside professional or other high profile competitions

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