

Humans, athletes and cyborgs: Where next for sport?

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I will begin by making a bold, but not necessarily radical, proclamation¹: sport, in the manifestation that we see it today will become untenable by the middle of this century.

The reason is twofold. Modern sport is founded on the (false but nevertheless still widely held) premise that it is meritocratic; that success is based on 'natural talent'. This premise is the basis on which sport is governed to be fair and why linear performance sports, such as the 100m sprint have meaning and merit. However, advancements in technology will undermine the concept of 'natural talent' and the prime sports which showcase it. The athlete in 2050 will bear little resemblance to the athlete of 1950 and consequently sport will also bear little resemblance to the way we view today.

It is nothing new to say that technology is a prerequisite of sport. One could feasibly envisage informal play or games without technology (depending of course, on your definition of the term) but certainly not organised, competitive, commercial and modern sport as we know it. Technology permeates sport and encompasses so many different aspects. There have been a handful of attempts to give a typology of sporting technology (e.g. Loland 2009, 2003, Miah and Eassom 2002, Hardman 2002) but a reasonable place to start is Butryn (2002) who identified five types: playing surface and arena (*landscape* technologies), tools and equipment (*implement* technologies), medical and *rehabilitative* technologies, *movement* and biomechanical skill analysis, and technologies that are directly designed to affect the human body and mind (*self* technologies). There is another aspect of technology which I think that Butryn neglects (although it could possibly be included in his *landscape* technologies), and that is technology that serves to adjudicate on rule-based decisions in sport (*rulebased / adjudication* technologies?) such as, 'Was the ball in or out?' 'Would it have hit the wicket?' or 'Was it over the line?' Nevertheless, all of these technologies indicate the way in which we attempt to gain mastery over our performance in sport and our desire to measure and determine absolutes.

Yet the ability to measure the results of sporting performance will become increasingly meaningless when the performances themselves are determined by technology rather than 'natural' ability. It will become increasingly obvious that we are deceiving ourselves to believe

¹ As similar claims have been implicitly or explicitly made by others such as, Loland (2001 & 2002a), Miah (2004) and Culbertson (2005)

otherwise. For instance, one of the reasons that the FINA re-evaluated their permitted technical specifications for swimsuits was due to athletes wearing 'high-tech' costumes that led to forty three world records being broken at a single event in Rome 2009 (FINA 2010). Such increases in performance couldn't simply be put down to a sudden influx of highly and naturally talented athletes; FINA's only option was to tighten their regulations in order pacify the public who realised that it was technology, not raw ability, that was determining performance. We will see such evident examples of the effect of technology on performance becoming increasingly common.

Our uncomfortable relationship with technology is not just limited to the world of sport. Technology is designed to overcome problems, with labour or transport or communication, and yet produces other unforeseen consequences. For instance, email was designed to make communication easier yet the double effect was to make our response times more pressurised. The difference in sport, however, is that the means are inseparable from the ends. The ends (for instance, winning) are limited by arbitrarily chosen rules. As Suits' (1978, 1995) so aptly understood, the paradoxical quality of games is that the simplest means to a goal is ruled out in favour of less efficient means. So on the one hand, we try to use technology to reach our end more efficiently whilst the very nature of games (and in this case, sport) is that the goal must be reached inefficiently.

It seems therefore that technology plays a paradoxical role in sport. We embrace it as a means to drive us towards perfection yet we resist it when it threatens to change sport from the fair contest of natural ability we believe it ought to be.

Now I may be accused of exaggerating the impact of technology on sporting performance. It may be argued that Governing Bodies just need to remain vigilant and continue to evaluate what technology is and isn't acceptable. Just as FINA have done through their new regulations on swimsuits, we can be on our guard and resist the technology that threatens the nature of the sport itself. However, I will argue that the possibilities of doing this will becoming increasingly limited as technology pervades other aspects of our lives and being.

When Donna Haraway (1991) wrote 'The Cyborg Manifesto' in 1985, her claim that humans had already transgressed the boundary into machine seemed an erroneous perspective of reality. Yes, technology had infiltrated many aspects of human (particularly the Western human) life, but apart from her example of the pacemaker, the claim that the organic (flesh and bone) had been synthesised with the inorganic (metal and electronic) was seemingly mistaken, and so her claim was interpreted as an attempt to communicate a broader social and political statement.

However twenty-five years later, Haraway's proclamation is becoming ever more real. For instance, scientists at Georgia Institute of Technology and North-Western University have recently and successfully developed prosthetic limbs that are directly connected to the nervous system and can be manipulated and controlled by thought alone (De Lange, 2011). The picture of cyborgs as seen in science fiction films such as *Blade Runner*, *Robocop* and *I-Robot* no longer seems far-fetched. As our understanding of neurological and nervous systems develops alongside advancements in electronics, synthetics and artificial intelligence, the notion of replacing not only relatively simple body parts such as cartilage and tendons but whole limbs and organs will become ever more common. Indeed, the use of such technology may have nothing to do with sport, but for reasons of health, fashion or performance in another sphere of life (e.g. education, work and other leisure activities). As such, this progressive engagement between the synthetic and organic will inevitably revolutionise sport, regardless of the wishes of those governing it.

One area in which the effect of advancements in technology will rub against the issues of fair and equitable contests can be seen in disability sports, most notably the Paralympics, where advancements in prosthetic technologies will have increasingly greater effects on sporting performance. It is not unfeasible to imagine that prosthetic technology will develop to an extent whereby athletes in these 'disability' sports start to outperform (in terms of times run, distance and height jumped and thrown) those in 'abled-bodied' competitions. Even if the authorities tried to keep these competitions separate by adjudicating that athletes with such technological enhancement could not legitimately compete with those without such enhancement due to having an unfair advantage (as the IAAF attempted to argue in the case of Oscar Pistorious), as this type of technology becomes more widely used for reasons of both therapy and enhancement, this separation would become increasingly untenable to maintain. Furthermore, problems with the conceptual distinction between therapy and enhancement would come to the fore in all sporting competitions as it would become more commonplace for individual athletes to replace ailing and injured tissue, tendon, cartilage and bone with the more effective inorganic substitute. This is already becoming the norm with the replacement of elbow tendons, knee cartilage, ligaments and athletes undergoing eye surgery. And when the decision to utilise such technology is not one based on the enhancement of sporting performance but rather medical judgement about quality of life, sport may find that its powers to legislate over what is and isn't constituted by the rules diminished. As this technology becomes cheaper, safer and more available, the pool of 'non-enhanced' athletes will diminish, whilst those utilising such technology will protest vigorously and their voices will become ever louder. It will become

impossible for sports Governing Bodies to impose a blanket ban on the use of these technologies when those with them supplant those without.

It might be that two separate spheres of competition, the 'cyborg' and 'non-cyborg', will be able to exist for a limited time², but eventually as this technology becomes as common as the use of antibiotics or the possession of a mobile phone or handheld multi-media device, the elite 'natural' athlete that existed in the 20th century will become obsolete³.

The transformation of the biological human into the 'posthuman' via the means of exponentially developing technology is referred to as the Singularity. It has been predicted by respected futurists such as Raymond Kurzweil (2006) that the Singularity will be reached by 2045. If we consider that the technology we carry around with us today in our cell phone is a thousand times more powerful and a million times smaller than the most powerful computer at MIT in the early 1970s, we don't have to construct wild speculations about the future to recognise that technology will have a radical effect on sport.

Ultimately, we cannot possibly hope to preserve sport from technologically advanced humans or cyborgs. We may currently be able to leave our cell phone in the locker room but when synthetic technologies become embedded into our very being and organic parts upgraded and replaced, the idea of sport as a meritocratic and equitable test of natural ability will disappear for good.

So where does this leave sport? Would sporting competition become a thing of the past? Not necessarily, although it might need to change its perspective. I agree with Sigmund Loland in his ongoing advocacy of a 'thick theory' of sport here; that we need to move away from a linear performance-based assessment of sport, whereby we measure times run or distances thrown – as such competitions would become a meaningless and uninspiring test of technological innovation – towards a more aesthetic and experiential appreciation of sport. The value of sport would be found in the creative freedom that technology would allow. Sporting performance would be adjudicated on our ability to imagine and carry out new techniques, manoeuvres and accomplishments that demonstrated grace, beauty and emotion. But above

² Andy Miah (2004) has previously suggested a similar parallel competition specific to genetically modified athletes.

³ It is likely that the availability of these technologies will be limited to those that can afford them, typically the more affluent nations, and this is likely to result in a greater sporting divide between countries than there currently exists. As such it may be that the notion of measurable linear performance based sports (such as athletics) will retain some meaning. Nevertheless, if this was the case it would result in further questions as to how adjudication would be made between 'technologically enhanced' athletes and those that were not.

sport would be valued for the way in which it reveals our spirit and what it ultimately means to be human despite living in a posthuman age⁴.

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⁴ I recognise the contradiction that appears to be made here and the problem lies within our language. The label 'human' may well exist in the future as it evolves with technology even though the 'thing-in-itself' is not the same as the 'thing-in-itself' that we attach the label to today.

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