



General Certificate of Education
Advanced Subsidiary Examination
June 2012

Critical Thinking

CRIT1

Unit 1 Critical Thinking Foundation Unit

Source Material

This source material is to be read in conjunction with the questions in Unit CRIT1.

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Document A

'Gene Doping' the new enemy of fair play

1. The use of performance enhancing drugs has been a major issue in sport for some time. However, of perhaps more concern is the relatively new field of so-called 'gene doping' whereby new genes are integrated into the body's genetic make-up.
2. The technique, known in medicine as gene transfer therapy, has many medical benefits. It has been used to correct genetic disorders, including some forms of blindness, and is hoped to be used in the future to overcome spinal muscular atrophy, a wasting disease that kills about 50 British infants every year. Research is also ongoing in using it to cure diseases such as AIDS and some forms of cancer.
3. Outside the world of medicine, however, the temptation for athletes to tamper with their genes is obvious. Experiments on mice have shown that when a particular gene is inserted they live longer, grow twice as much muscle, and recover more quickly from injury. Moreover, when compared to drugs, gene doping is potentially much harder to police, since the changes to the athlete's physique are triggered from within rather than from administering drugs which can be detected.
4. While sporting bodies such as WADA (the World Anti-Doping Agency) campaign loudly against gene doping, some think differently. Nigel Pearson, Professor of Bioethics and Sports Sciences at the University of Birmingham, has argued that gene doping should be legalised, and even perhaps encouraged.
5. According to Pearson: 'There is nothing inherently wrong with the practice of gene transfer, or 'doping'. Athletes already push themselves in any way that they can in order to achieve and they use any means at their disposal, including technology or sponsorship, to help them to do so. This is the moral code of sport at the top level, and gene enhancement is simply another means for them to do this. In fact, it will probably be a good thing for sport, as it will allow for more extraordinary performances.' Pearson has also dismissed the dangers to health. 'People need not be worried about the risks. So far there have been no reported examples of this procedure being any more dangerous than the use of performance enhancing drugs such as steroids.'
6. Most however, believe that gene doping is a significant threat to the future of sport. Nick Jones, fitness coach for some of the UK's top sportsmen and women, has suggested that this could be the biggest problem sport has yet to face. 'We have to clamp down on this. Unless we do so, and do so fast, we are faced with a new wave of cheats poised to destroy the very nature of competitive sport as we know it.'
7. The matter of gene doping is evidently deeply controversial. Whatever one's opinion, gene doping is clearly set to become an increasingly significant issue in the world of sport.

Source: adapted from 'Gene Hunt. DNA and sport – the future is around the corner', by MATTHEW SYED, *The Times Eureka Magazine*, Issue 14, November 2010

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Document B

Alesha and Frank are discussing the news article in Document A.

- Alesha** How can he say that gene doping is a good thing?
- Frank** Because sport is all about pushing your body to the limits in order to achieve the most you can. As he says, this is just an extension of that same process.
- Alesha** But it's not natural.
- Frank** Oh come on. You're not going to use the 'everything natural is good' argument, are you? Besides, neither is taking protein supplements 'natural'. Or are you saying that athletes have to eat berries they've found from foraging in the woods, train by running up mountains...? What's the difference anyway between someone who's got stronger because they've taken a load of artificially synthesised amino acids and someone who's messed with their genes?
- Alesha** You say there's no difference between gene doping and an athlete who takes protein supplements but the person who's taken the protein supplements still has to work to turn that into muscle. It's not fair for someone else to get there just by messing with their genes.
- Frank** Some people are born with more natural ability to run fast than others. That's not fair, either. Some people's coaching team might be better. Their training facilities might be better. Some people's bikes are better than others. Or their cars are faster. Is that fair?
- Alesha** Yes, but we try where possible to limit these differences. Like there are rules about engine size.
- Frank** OK. What if someone is born with the genes for having a particular physical advantage over other competitors? For example, Miguel Indurain, the five times winner of the Tour de France, had unusually large lungs – his lung capacity was almost two litres more than the average person's. Surely that's not fair. Obviously he's going to be better at an endurance event where your oxygen-carrying capacity is being tested. Surely it's fairer to give everyone a chance to build their genes up to the same level.
- Alesha** But that's not going to happen.
- Frank** I agree with you. That's why gene doping needs to be legalised. It's only unfair if one person has access to the procedure and not the other.
- Alesha** I suppose... But don't you find the wider implications worrying?
- Frank** Such as?
- Alesha** Such as thinking that our nature is something that we can tamper with.
- Frank** You mean 'playing God'?

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- Alesha** Sort of. But not for religious reasons, for ethical ones. Like, are we saying that people who are strong are better than those who are weak, that being weak is an imperfection, something that needs to be eliminated...? Not even weak, necessarily. Just – different.
- Frank** What's so bad about us getting better? Don't you like the idea of us becoming healthier, not dying of nasty illnesses...? You're in favour of medicine, I presume?
- Alesha** Of course. I just can't help thinking that... The idea of trying to create perfect human beings is frightening. You know. A master race...
- Frank** Whether or not you like it, it's going to happen. If you think about what we can do, technologically speaking – do you really think that we are *not* going to learn these things? What's going to stop us? You might as well face it. A genetically engineered future awaits us. The dawn of a new humankind is just beyond the horizon...

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Document C

1. The ethical implications of genetic enhancement extend way beyond sport. Elite athletes will doubtless seek to exploit genetics to improve performance, but it is almost certain that non-sportsmen will demand access to these technologies as they become available. Biotechnology may eventually provide the means of enhancing intelligence and extending lifespan. Some experts on ageing and cell regeneration believe that the first 1000-year-old human may already be alive.
2. So should these technologies be permitted? Should they be encouraged? Or would their use 'dehumanise' us, as critics claim?
3. Perhaps a key item to note is that there is a fundamental ethical difference between artificial enhancements within sport and those beyond the field of play. Consider an enhancement that engineered immunity to the common cold. This would make my life better. I would love to take advantage of any technology that helped me to avoid my annual bout of sniffing. But given the choice, I would want others to benefit from this technology, too. This is an enhancement that I would benefit from, whether or not others benefited from it at the same time. It is an enhancement that I want to use, not because it gives me an edge over those who don't have it, but for its own sake. It is inherently valuable.
4. But now suppose that I am a 100m runner with access to an enhancement that helps me to run faster. In this case, I would benefit from the enhancement only if it were denied to other competitors. If everyone has access to the same technology and it improves their time by 10 per cent, I would find myself in exactly the same position as I did before taking the drug.
5. In sport, an enhancement that is available to all is, practically, equivalent to an enhancement that is available to none. This tells us something of great importance about the morality of enhancement. It tells us that the reasons we have to legalise enhancements beyond sport are infinitely more powerful than the reasons we have to legalise enhancements within sport. Athletes want enhancements so that they can gain an advantage over opponents. Yet the net benefit to each and all is zero. But safe enhancements beyond sport are far more rewarding: they can make everybody's life better simultaneously.

Source: adapted from 'Gene Hunt. DNA and sport – the future is around the corner', by MATTHEW SYED, *The Times Eureka Magazine*, Issue 14, November 2010

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