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NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

Scholarship 2013
Physical Education

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ANSWER BOOKLET

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

Use this booklet to answer the THREE questions you have chosen from Question Booklet 93501Q.

Each question is worth 8 marks.

Start each answer on a NEW page. Carefully number each answer.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–20 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Q3 Since time immemorial, "the majority of athletes have been willing to do anything, and take anything short of killing themselves, to improve athletic performance" (Harold Connelly). There are records that show Roman gladiators eating animal hearts in order to gain that animal's strength, of Ancient Olympians using hallucinogenic mushrooms to try to gain the advantage and in early modern sport, athletes took various concoctions of caffeine, alcohol and opium in training and for competition. What then, is so bad about using anything at one's disposal in order to gain the upperhand? Isn't that what sport is all about - winning? Today, we find ourselves in an uncomfortable limbo where a widespread use of banned substances leads to "destroyed athletic careers" (Shuster, 2012) and the playing field seems to be anything but equal. This essay recognises that there are a wealth of issues surrounding this debate, but will attempt to shed some light on the topic.

For the purposes of this essay, the Oxford English Dictionary definition of drugs will be assumed: 'a medicine or substance that when ingested or otherwise introduced into the body has physiological effects.' This will exclude other techniques, banned or otherwise, such as oxygen tents and non-chemical blood doping.

One of the highest profile professional sports known for doping is cycling, and its most famous 'cheat' is undoubtably Lance Armstrong - a cyclist who won 7 consecutive Tour de France titles, overcame testicular cancer and was a role model to many through his Livestrong charity. When Oprah

(Q3) interviewed him in 2012 regarding his fall from grace and ban from the sport she asked "would have been possible to win without doping?" – "Not in that generation." He viewed it as a "level playing field". And isn't that what we want sport to be? Sport is 'a valued human practice inherently concerned with the moral' (Arnold) and so we desire fairness. Was Armstrong merely a terribly unfortunate victim of cycling culture at the time? Many, many people lost a role model, and he lost a career and $10 million a year from Nike alone in endorsements when he was taken down, and yet he was merely a product of his time. In his 2012 book 'The Secret Race', Tyler Hamilton, a former teammate of Armstrong, set out to quash the misconception that doping was for "lazy people" – he said that the use of EPO (erythropoietin, a chemical blood doping process stimulating red blood cell production and increasing aerobic capacity) allowed cyclists to "suffer more" and "train harder" than he ever thought possible. There's nothing lazy about it. New Zealander Stephen Swart, also a former teammate of Armstrong, said that he felt "uncomfortable" with the drug culture in the team when he confessed in 2004 – his evidence helped take down Armstrong. And the lure of the advantages doping provides is almost irresistable, cyclist David Millar embodied this when he asked expressed the sentiment "How much more could I do if I were doped?" And with the commodification of sport these days, we, the general public, want to see the spectacle of human performance that doping could provide. //

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In recent years, a mathematical game theory has been used to show that unless the reward for success were reduced unreasonably, or the probability of being caught increased hugely, athletes could be expected to continue to drug cheat. Why then, shouldn't we make it legal? Imagine the excitement the next Olympic Games would offer - countless records being shattered as super humans wowed us with their feats - it might take sport to a whole new level! Young people's sporting heroes would almost be superheroes, not "destroyed" by "illogical and immoral drug testing". And isn't sport about pushing the limits of human performance? Isn't it unreasonable, that in ~~today's age~~ this day time of the medicalisation of society, that we hold our athletes up to far higher standards than we do ourselves? And how much money could be saved by doing away with the World Anti-Doping Agency (WADA) and the like? If the majority of the danger of drugs is in that they are made to be ~~safe~~ undetectable and dealt with secretly, surely bringing them out in the open would make everything safer. ✓

Despite what seems to be a host of reasons in favour of the legalisation of drugs in sport, I defend the stance that they should remain banned, and I have even more compelling evidence that supports this. //

The first reason for this is safety - of athletes and of the rest of society. If sport were reduced to nothing

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* Rather than merely "destroyed athletic careers," we'd see destroyed lives.

(23) more than a battle between pharmacologists (in much the same way that today's America's Cup can almost be 'bought') then it would simply be those athletes with the greatest means, and willing to take the greatest risks with their health that would win. The WADA bans certain substances, in part, because they pose a danger to the athletes: EPO's red blood cell inducement leads to thicker blood, with a huge danger of clots which can and do result in heart attacks and aneurisms. It also reduces the body's own capacity to produce the cells, which can lead to lifelong hormone dependencies. * Shuster acknowledged athletes have "teams of sports specialists" - but any young person seeking to emulate the results of their sporting heroes through their own drug use has none of this - it would be hugely unsafe and likely fatal for some. How could we in good conscience, allow this?

The next case to be made against the legalisation of performance-enhancing drugs is that "more than ever, athletes would feel coerced to take drugs in order to remain competitive". The argument posed by Shuster assumes that all athletes, professional and not, want to take drugs, but this is absolutely not the case. Where today, there is a manageable divide between athletes backed by large generous resources and those less so, legalisation of drugs would create a huge schism. All sports that derive some of their identity from their history and records, such as baseball, would lose all that. Fans would no longer be able to relate to their sporting heroes, and again, at grassroots level, where pressure already dormant

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(Q3) to take drugs would hugely increase, safety would not be a priority. 1

The solutions to today's problem lie not in the legalisation of drugs, but in a change in culture within sports, and on more funding for more rigorous testing and research to detect new substances. The scandals of drug cheats being exposed in recent years is sad, but we're moving towards being cleaner in most sports. Right now, though, clean athletes are disadvantaged by there being any drugs in sport. Former 100m world record holder, Jamaican Asafa Powell, has been found out for drugs recently, and track and field's reputation has been muddied. Usain Bolt, who has never faced any serious doping allegations, and is still treated with some distrust by those who have lost faith in high level sport, he now spends too much time telling everyone that he is clean. Wouldn't it be better if society were in a place where the was taken as given and we could get on with celebrating her success, rather than waiting for him to be caught? Nadzeya Ostapchuk, Belarussian shot putter, won the beat Valerie Adams in the London 2012 Olympics but was found out to be a drug cheat. Before this, Adams had been devastated, apologising to the nation and appeared in interviews to have been had her sport broken. Along with much of New Zealand, I felt her pain, and was absolutely gutted for her. When she was retrospectively awarded gold, it just wasn't the same - her moment of victory had been stolen. She did say of the affair that it was encouraging for athletes, like [herself] proud to compete cleanly, that the system works and that drug cheats are caught: we

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Q3 should be aiming for more of this, so that sport can be 'cleaned up' and regain its reputation and standing. Too many clean athletes have been hurt by drug cheats: Adams is held in lower regard for her not having broken world records set in the 70s and 80s when drug cheating was rampant.

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While the case for the legalisation of drugs in sport, as put forward by Shuster and others, does appear to have its merits, the case against, as only very briefly considered by this essay, is anything but "weak", and is one that must be taken up - for the future of sport, and its safety in society. The only morally acceptable way to "level the playing field" is to further improve our systems of catching drug cheats, so that any young person can aspire to compete cleanly at the highest level, and do our country proud.

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Q4 The majority of competitive athletes spend much of their training working on the skills and techniques they need in their chosen field. In my own sports, I have used some performance analysis tools to help me identify what I needed to work on so that my time was well spent, and so that I could improve my skill performance. Many other athletes do the same. In this essay, while some of the many merits of performance analysis will be discussed, there will also be a discussion of its shortcomings, it is certainly not a universally applicable 'fix it' that will always lead to the desired result.

My main sport is volleyball, and sometimes, our coach sets up a camera so that we can see ourselves executing certain skills. This technique of video analysis can be really useful - once, I noticed that I wasn't very 'side on' in my spike - without this rotation, I wasn't fully utilising the principle of force summation, and identifying this allowed me to focus on correcting it. When athletes engage in video analysis, they are often trying to compare their technique to some imagined 'ideal' - this is limited by their knowledge of good technique, and by the and fundamentally flawed in that sometimes, unconventional technique can achieve similar, or superior results. This is extremely evident in golf - Bubba Watson and Jim Furyk are praised for their skill, and compete at the highest level, but mystify commentators and sports analysts by their unconventional techniques. Clearly, there is not just one method or technique that all athletes should model themselves on, but a myriad ways to achieve the desired result, and so formal video analysis

Q4) has its ~~flaws~~ faults.

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Such analysis also ignores sociocultural factors - in many sports, instinct and natural ability are absolutely vital. Also, many athletes do not have access to video analysis tools or expert coaching to decipher the footage. It is important not to overlook the 'feel' of a skill's execution - the internal feedback of whether a skill felt fluid, how for me, how the ball contact felt, or how efficient the movement felt. Was there an uncomfortable strain on any muscles? Video analysis cannot answer that. ! CV ex

As a process to inform performance improvement, performance analysis is again limited. A performance improvement programme should seek to improve the athlete holistically, taking note of the sociocultural factors that the individual brings with them, like their preferences, resources or lifestyle and time available to construct a programme suited to them. Performance analysis is great as a way of indicating their progress of skilled athletes but is best limited to that. It's effective and safe use relies on a knowledge of "biomechanical principles and functional anatomy" - which is often not recognised to be lacking. Before constructing a performance improvement programme, far more and varied information should be made available that performance analysis alone cannot provide. This should be kept in mind. ! CV

In 1963, Loch defined performance improvement as a 'relatively R

Q4 permanent change in skilled behaviour brought about by practice." But, as Coach Vince Lombardi Jr pointed out, "practice makes permanence, but only perfect practice makes perfect" → disproving the old adage "practice makes perfect". Perhaps performance analysis can help inform perfect or "successful training" as defined by Arthur Lydiard: "intelligent training". But this may not always be the case. It has been suggested by some that all of the analysis and theories that come with sports science overcomplicate a natural process. Young children learn to walk and talk without the aid of coaching or performance analysis. Perhaps we've made things too hard for ourselves. I think that too many people assume that performance analysis and such techniques are the only ways to improve a skill. This is a perfect example of scientism - people assume that only those methods which are proven and engaged in scientifically can lead to success. An over-reliance on performance analysis probably ignores other alternative methods that may work better for some people.

In 2004 Wilmore and Costill used the terms "responders" and "non responders" to describe the way in which different athletes can respond differently to the same stimuli. Furthermore, in 1997, Rushall and Lippman stressed the importance of a programme that "caters to the individual needs" of an athlete. With this in mind, it's worth noting that performance analysis, as a means to inform performance improvement, is likely to work brilliantly for some people

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Q4 and not for others. In my volleyball team, though we all train together, we don't all learn and improve in the same ways. Some of us responded to performance analysis and its technocentristic approach, others didn't. While I have a background in sports science and physics and enjoy applying these concepts I've learned to my sport, it seems that some of my teammates have a far more 'natural' approach. One size does not fit all.

Finally, this essay ~~will~~ will discuss the relevance of decades-old motor learning theories to today. When analysing performance, some would try to identify which of Fitts and Posner's three 'Stages of Learning' they are at. This theory was published in 1967, well before modern psychology, neuroscience or ~~sports~~ today's sports science really came into their own. One of its weaknesses is linearity - that it assumes that an athlete will progress through each of these stages in a predictable manner through practice. This is absolutely not supported by my own experiences. With my volleyball serve, I'd have had it to the point where I wasn't thinking about it consciously - it came naturally (autonomous) but might decide that I wanted to have more control over its placement - for which I would have to analyse what I was doing and what I might need to change. Refining a skill in this way is far from 'autonomous', and Fitts and Posner's Model fails here. An athlete might be at an 'autonomous phase' when executing a skill he is not very good at, yet the model suggest autonomity to be

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Q4 something of an end goal. I wouldn't be surprised if many top athletes always consciously controlled their skill execution - the model would describe this as 'cognitive' and identify it as a weakness. I believe that we, as sports scientists, need to pay more attention to the findings of modern science and psychology to revise our outdated, though still clung to, theories. Performance analysis* is all well and good if you're looking for the right things, but it's possible that we aren't. 4

In conclusion, performance analysis as a process to inform performance improvement can be a useful tool, if used in conjunction with other information and linked to more modern skill learning theories and an understanding that one size does not fit all - there may not be just one perfect technique, and performance analysis may not be helpful for everyone. A well constructed performance improvement programme itself should not be too focussed on analysis, and indeed, should aim to develop game sense and instinct as well as technical skills. 4

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* as a concept

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Q2) Sport NZ's (formerly SPARC) & 'Stay and Play' research found that 70% of young people who participate in sport drop out between the ages of 13 and 18. The commonly held view is that children and teenagers who drop out of sport are doing themselves a life-long disservice. We tend to believe that young people who are physically active will grow up to be older people who are physically active. It seems reasonable, but youth sport may not lead to lifelong physical activity. ✓

There is a lot of focus on children and teenagers to be physically active, because it is believed that these formative years will determine their lifelong physical activity. I believe that perhaps more attention should be turned to encouraging participation in sport and physical activity among adults and older people just as much as for young people. The factors that affect the physical activity of young people are not always the same ones affecting adults, and I think that ~~more~~ strategies should be devised that ease the transition from the organised, structured activity in schools to the wider world, and directly focusses on older people, because ~~[redacted]~~ a person who was not active in their youth is influenced by different factors later in life that may lead them to taking up physical activity: they are not a lost cause. ✓✓

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Kolt et al. in 2006 set forward the "challenge" of "turning today's youth into regular and lifelong

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physical activity participants". Why can't we turn today's people, young and old alike into such participants? Yes, "adolescence is a critical period", but is it really any more critical than any other? Even the largest and most diligent of long-range studies have only found "low to moderate" correlations between youth participation and adult participation. To explain this, the 'influencing factors, or, 'barriers and enablers' should be considered for both ages. //

Young people, who, like me, are skilled at some sports and enjoy the competitive aspects, tend to thrive through the schooling years. Top level teams benefit from the best attention, coaching and support on offer. Those who enjoy sport more for its social aspects and in lower teams are often overlooked and not cared for to anywhere near the same extent. Less skilled performers can be put off by the emphasis on competition and success brought by coaches when they really wanted to enjoy themselves. This is why many people drop out of sport as young people - negative experiences. Especially in secondary schools, sport can be unappealing for some, and simple physical activity for its own sake, like walking or yoga or tramping is often not valued by PE classes, and so may not be learned or appreciated. In the hormone-charged teenage years, more so than at any other time, insecurities about looking bad in front of other people or

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disliking their own body type is another off-putting factor. To its credit, organised sport in schools is very accessible for most people and is easy to get involved in, as evidenced by its high uptake. When this is less true as later in life, uptake rates for organised sport fall away. I suggest that more opportunities be provided for adults to participate in organised sport, both competitively and socially, whether it be through workplace teams, family events, groups or clubs or any other means. When I leave school, I'm not sure where I'd find teams to play for, so I think it's also important that young people are connected to clubs or community groups during their school time to raise the chances of their continued participation. ✓ Cr S

For adults, the majority of physical activity is not sport related - it's more the social aspects, like going for a walk with friends or family, playing with the kids, swimming at the beach or joining some sort of fitness group. If these were the only opportunities available, I don't think I would be well served as I love team sports, and the same goes for my Dad who is an keen sportsman who revels in competition. For me to continue to be active over the next few years, I think I'll need to find a team to play for because I am less motivated by maintaining my personal fitness than I am by the fun and challenge of sport. This is a key point to S CC S

recognise ~~that~~ everyone participates in physical activity for their own reasons. These often lead to different forms of engagement that should all be catered for.

One way in which continued, "lifelong" participation can be ~~encouraged~~ achieved is by habitualisation - forming a habit that will be stuck to over the years. Psych Associate Professor of Psychology A. Lo Duckworth of the University of Pennsylvania has ~~done~~ contributed much in her research into success. She found that, along with goal-setting and motivation, 'grit' was a key factor — the ability to persevere and sustain long-term goals or habits. This is relevant here because it suggests that there is an inherent quality in some people that will set them up well to stick with their habits. In others, however, if this 'grit' is absent, there may be a tendency to change from one form of an activity to another as their interests develop over time. For these people, I think that there should be opportunities to try new activities out and commit to short term things - rather than committing to a whole season or in a team when they might not know how their circumstances might change.

The main message I am trying to get across here is that there should be ~~a~~ ~~range~~ different strategies in place and opportunities available as there are types of people. At present some people and age groups are catered to more effectively than

others. There is no one strategy that would ensure lifelong physical activity, and indeed, some people are probably never going to participate in like that. Each age, stage, and type of people should be understood, and valued, and catered to - we need to broden our approach. The Oxford English Dictionary defines wellbeing as 'the state of being comfortable, healthy or happy'. In different stages of life, this would be enhanced by physical activity, in others, not. Even physical activity itself may not be for everyone. Especially for adults, a 'healthism' assumption should not be applied wherein it is solely the individual's responsibility to participate, rather, community efforts should be made, and a culture should be encouraged of celebrating and valuing physical activity in all its forms and at all levels.

Lifelong participation is a goal that will be reached by strategies throughout one's whole life, not limited to young people, but extended to everybody.

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