



0.5% - The difference between immortality and anonymity

Dr Ross Tucker

Consultant Scientist: Sports Science Institute of South Africa

Milorad Cavic is not a household name, even to relatively ardent fans of the sport of swimming. The Serbian has a collection of world and European swimming titles to his name, and the CV of an accomplished swimmer. But it is Olympic success that defines the career of a swimmer, and his career would be defined on Saturday 16 August 2008, when he lined up in the 100m butterfly final alongside the great Michael Phelps, then going for his seventh gold medal in the Beijing Games.

For literally 99.5m out of the next 100m, Cavic dethroned the greatest Olympic athlete ever. The wall was half a meter away, and Cavic on the verge of claiming gold to become a legend as the man who denied Phelps a record medal haul. Then the impossible happened. Cavic was reaching for the wall, his fingers only inches away, when Phelps, recognizing that he was beaten, made a last-gasp effort to reel Cavic in.

At the same time, Cavic's head lifted very slightly out of the water, enough to slow him down by the tiniest of margins, and Phelps was able to beat him to the line by 0.01s. One hundredth

of a second, in a race lasting 50.68s. That's 0.02%, and it's all that ensured that Milorad Cavic is largely anonymous, while Michael Phelps is a legend.

These are the margins in elite sport, a world where the average difference between an Olympic Gold medalist and the athlete who finishes fourth, with nothing to show for it, is 0.5%. Dwell on that number. If the Olympic Games were an athlete's 'examination', they could achieve a score of 99.5%, and they'd come away with nothing. 100% is the target, and a margin of 0.5% is the difference between sporting immortality and anonymity.

That 0.5% belongs to the man, woman or team who recognises its value, and commits to pursuing perfection in every decision, practice and sacrifice. This is the lesson that sport teaches us, and it is one that business can learn from. For here too, in a competitive world, victory belongs to those who pursue it relentlessly, systematically, with intelligence, and with the understanding that creating a culture of "performance perfection" defines legendary success.

Take shot put for example. A sport often associated with brute force and sheer strength, the result is far more nuanced. Of course strength matters – the final distance achieved is the velocity of shot release, and that is a function of explosive power. But the result is also affected by two subtle factors. One is the height of release, as any golfer will attest to – the higher up you start, the further the shot will travel. The second is the angle of release. Too flat fails to give the shot the necessary elevation and results in an under-performance.

Scientists and coaches can measure these three factors to understand how to optimize performance, and this analysis at the 2007 World Athletics Championships revealed an important, but not surprising, finding. The gold medal was won by Reese Hoffa, a bear of a man, with a distance of 22.04m. In second place, 43cm behind, was Adam Nelson. The margin of victory was 2%, enormous by the standards we have seen usually separate success and failure. Yet remarkably, in terms of height and release velocity, it was the silver medalist Nelson who had the upper hand. He was, in two of three key categories, a gold medalist.

The difference was the angle. Reese Hoffa won gold by pushing at an angle of 33°, whereas Nelson's silver came at 31.5°. The 2% that separated them was the result of 1.5°, enough for Hoffa to overcome the dual disadvantage of both height and strength. In fact, it's possible to calculate that had Nelson pushed just 1° higher, 31.5° instead of 31.5°, his 21.61m would have been nudged to 22.06m, and that silver medal? An altogether different precious metal!

These are the hidden margins that separate success and failure. The key is the recognition that when you pursue success in such a competitive environment, you have one of two options. One is to hope for luck, and blindly repeat the same processes over and over, motivated by passion and desire but no systematic commitment to finding excellence. The other is to channel that passion for excellence into a pursuit of these marginal gains. Recognise that if you fail to invest, then you are, 99.5% of the time, destined to fail. It is only by committing to the investment into that elusive 0.5% that you can hope to come out on the right side of it.

