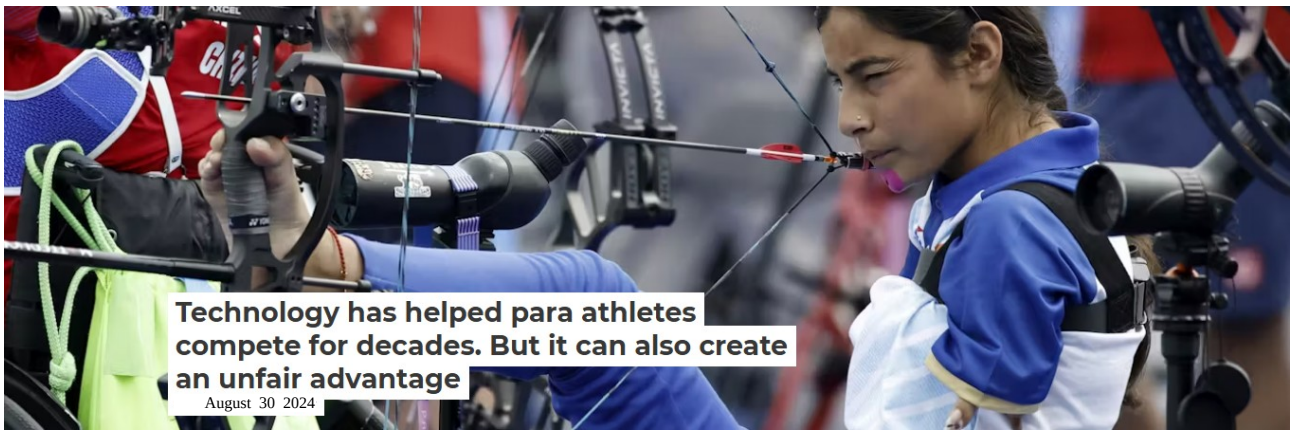

The Conversation

The first official Paralympic Games was held in Rome in 1960. Today’s Paralympic Games continue this legacy, with technology playing a central role in these achievements.Technology has enabled athletes with disabilities to reach incredible heights. However, it has also introduced new challenges, particularly in ensuring fairness and equity in competition.

In the early days, Paralympic technology was basic by today’s standards. Athletes competed in regular wheelchairs and used simple strapping to assist. As the Paralympic Games grew, competitive success became increasingly prized. As a result, athletes used specialised technology to gain a competitive edge.

Running blades, for example, are carbon fibre prosthetics designed to mimic natural leg movement while enhancing speed and bounciness. These blades have revolutionised track events. They enable athletes with lower-limb amputations to compete at speeds comparable to, and sometimes even faster than, able-bodied athletes.

In 2019, Blake Leeper, a bilateral amputee sprinter, applied to World Athletics to compete in the 2020 Tokyo Olympics against able-bodied athletes. The international governing body for athletics received independent scientific advice that Leeper’s prosthetics gave him a competitive advantage and rejected the application. Leeper, who is African-American, appealed the decision on the grounds the scientific advice provided to World Athletics was based on racially prejudiced science. But the court rejected his appeal. It ruled the evidence to be fair and unbiased.

Neuroprosthetics are a notable example. These are devices that interface with the human nervous system to overcome losses in muscular strength and endurance that result from neurological impairments such as spinal cord injury.

The devices can be attached externally or surgically implanted. They can improve functions such as sitting stability and rowing machine performance. It’s not hard to imagine some athletes using these devices to gain a significant – but possibly undetectable – advantage over competitors.

The International Paralympic Committee has a sport equipment policy. One of the principles is that sports performance should be determined primarily by human performance, and the effect of technology and equipment should be secondary. However, upholding this principle requires enforceable rules. As technology advances, this will become increasingly challenging

Technology can also play a crucial role when it comes to classifying athletes. Each of the 22 Paralympic sports uses a classification system to ensure competition is fair and meaningful. Each athlete is classified according to the type and severity of their impairment.

However, classification is not without its challenges. Many classification tests also require athletes to give a full effort. This leaves open the possibility an athlete wishing to gain an unfair competitive advantage might deliberately underperform on these tests to exaggerate their impairment severity. They might then be placed in a class of athletes with more severe impairments.

Using technology to gain an unfair advantage is as old as sport itself. But technology is also the very tool we must use to ensure fairness and to level the playing field.

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