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VR for training perceptual-motor skills of boxers and relay runners for Paris 2024 Olympic Games

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The revolution in digital technologies, and in particular Virtual Reality, in the field of sport has opened up new perspectives for the creation of new modalities for analysing and training the skills underlying performance. Virtual Reality allows for the standardisation, control and variation (even beyond real conditions) of stimuli while simultaneously quantifying performance. This provides the opportunity to offer specific training sessions, complementary to traditional training ones. In addition, in order to continuously improve, athletes need to train more and more but they reach their physical limits. Virtual Reality can create new training modalities that allow them to continue training while minimising the risk of injury (for example, due to the repetition of high-intensity work in races for a 4x100m relay or due to the impacts of defensive training in boxing). It may also be relevant for injured athletes who cannot physically practise their discipline but need to continue to train perceptually and cognitively by confronting field situations.

In this talk, we will describe how Virtual Reality is effectively implemented in the French Boxing and Athletics federations to train athletes anticipation skills in their preparation for the Paris 2024 Olympic Games. In the 4x100m relay, the teams performance depends in part on the athletes ability to synchronise their movements and therefore initiate their race at the right moment, before the partner arrives in the relay transmission zone, despite the pressure exerted by the opponents. The Virtual Reality training protocols are therefore designed to train each athlete to initiate his or her race at the right moment, with a tireless and always available avatar, based on the motion capture of real sprinters, whose race characteristics can be configured in terms of speed, lane, curvature, gender, etc. In boxing, the federation wants to improve boxers anticipation skills in defensive situations without making them undergo repetitive blows that could injure them, which is impossible in real training. Virtual Reality training protocols allow boxers to focus on the appropriate information on the opponent, which should enable them to anticipate attacks and adopt the relevant parry. In this talk we will therefore show how these different challenges can be addressed in the REVEA project through the deployment of an interdisciplinary research programme.

Topic: Psychology

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