HOW DO VISUAL SKILLS AFFECT SPORTS PERFORMANCE?

MEASURING THE PERCEPTION OF PROFESSIONAL TENNIS PLAYERS

Do professional tennis players have better visual perception than the average person? What is the role of visual perception in athletes?

In tennis, as in many other sports, peak performance depends on excellent visual processing in both spatial and temporal terms.

So far, studies have concentrated on athletes’ ability to anticipate and make decisions. EPFL’s Laboratory of Psychophysics (LPSY), however, has gone further, looking at how the ability to anticipate and make decisions relates to visual perception capacity. In this project, a series of seven visual tests were performed to determine which aspect of visual information processing is better in a tennis player than in a triathlete or a non-athlete.

The results showed that certain temporal processing skills, such as the ability to perceive the speed of an object, are better in tennis players than in triathletes and non-athletes. Data like this can be used to maximize the performance of tennis players in the future, working with their strengths and the visual skills they develop in practicing their sport. These approaches can also be applied to other sports.

Example of the stimulus used to study the temporal processing of visual information. Two vertical segments, where the lower one may be to the right or the left of the upper one, are displayed for a very short period, after which they are masked (by a series of aligned vertical segments). The participant must say which side the lower segment was on, left or right.