

JUDO COACHES' VISUAL SEARCH STRATEGIES FROM "HAJIME" TO FIRST CONTACT

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Introduction Athletes' visual search strategies are dependent upon ability and task demands. Yet, there is limited research into coaches' visual search strategies, and no understanding of judo coaches' visual search strategies when observing fights. The current research investigated judo coaches' visual search strategies from the beginning of fights to the first contact between athletes. Methods Twenty qualified coaches viewed footage of fights recorded from a position adjacent to the coach's chair at an international event. Judo athletes compete wearing white or blue judogi, and coaches were instructed to coach the athlete wearing white in all fights. Coaches' eye movements were recorded with SensoMotoric Instruments (SMI) Eye Tracking Glasses. Eye movements were mapped frame-by-frame to areas of interest (AOIs) using SMI BeGaze software. Results Significantly more time was spent fixating on the athletes in comparison to the referee, scoreboard, and irrelevant areas ($p < 0.02$). There was no significant difference between time spent fixating on each athlete, or time spent fixating on the athletes and the space between them. Time spent fixating on the space between the athletes was significantly greater than that spent on the referee and irrelevant areas ($p < 0.02$). There were a greater number of fixations on the athletes compared to the referee, scoreboard, and irrelevant areas ($p < 0.002$). There was no significant difference in the number of fixations on each athlete, or in the number of fixations on the athletes and the space between them. The number of fixations on the space between the athletes was greater than those on the referee and irrelevant areas ($p < 0.007$). Discussion Coaches fixated more frequently and for longer on the athletes and the space between them. No significant difference between fixation frequency and duration between athletes and the space between them suggests that the space and the athletes are of comparable importance to the coach. Research suggests that central areas act as anchors for visual search, with peripheral vision obtaining information from other areas (e.g., Milazzo et al., 2015; Piras et al., 2014). Results from the current study suggest that judo coaches may utilise the space between the athletes as an anchor for their visual search. Future research should investigate the pattern of visual search to better understand how coaches use this space. References Milazzo, N. et al. (2015). Do karate fighters use situational probability information to improve decision-making performance during on-mat tasks? *J Sports Sci*, DOI: 10.1080/02640414.2015.1122824 Piras, A. et al. (2014). Visual search strategy in judo fighters during the execution of the first grip. *Int J Sports Sci Coaching*, 9, 185-197 Contact: paul.robertson@student.anglia.ac.uk

MODELLING BATTING EXPERTISE FROM THE PERSPECTIVE OF HIGH PERFORMANCE COACHES

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Cricket coaching literature on developing batting expertise has largely focused on the individual, and typically, technical features of batting. Research in cricket batting has addressed developmental factors of expertise (Weissensteiner, et al., 2009) or the perceptual advantage of expert batters (Muller & Abernethy, 2006). Little attention has been paid to the importance of the individual-environment relationship in expert behaviour. In order to address this missing ingredient, one on one, in-depth, semi-structured interviews were undertaken by the primary researcher with eight high performance coaches (e.g., international or state) who were purposively sampled from Cricket Australia or State Cricket associations. Six of these coaches had played international cricket as batsmen, one played state level and one a first grade player. Interviews were transcribed verbatim and coded separately by the first and second author after each interview. The third author then reviewed all codes and provided feedback. Strategies used to enhance validity included; sampling coaches of different high performance levels and retrospective member checking with coaches. Key themes that emerged include expert's superior knowledge of, and attunement to internal (e.g., emotions) and external (e.g. pitch type, field settings) information. This informs their intentions, perceptions and actions to achieve the task goal at any game moment. A skilful batter has time to execute their action and is in 'rhythm' with the bowler through attunement to specifying information sources. Experts also adapt to and manipulate the performance environment. Self-evaluative processes, through between-ball routines provide opportunity to reflect, re-evaluate and plan for the next delivery. Examples include; changing stance, forcing field changes or manipulating bowler's emotions. These results highlight the importance of capturing the experiential knowledge of high performance coaches that cannot be obtained through traditional laboratory based studies. For cricket batting coaches, this work emphasizes the importance of designing learning environments that enable players to better understand their own performance in the context of emergent dynamic game-based constraints. Müller, S., & Abernethy, B. (2006). Batting with occluded vision: An in situ examination of the information pick-up and interceptive skills of high- and low-skilled cricket batsmen. *Journal of Science and Medicine in Sport*, 9(6), 446-458. Weissensteiner, J., Abernethy, B., & Farrow, D. (2009). Towards the development of a conceptual model of expertise in cricket batting: A grounded theory approach. *Journal of applied sport psychology*, 21(3), 276-292.

Mini-Orals

MO-PM07 Team Sports

ACTIVITY PROFILES AND FATIGUE IN INTERNATIONAL FEMALE TEAM HANDBALL USING PLAYER LOAD™

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Introduction Handball matches place diverse physical demands on players, which may result in fatigue and decreased activity levels. However, previous speed-based methods of quantifying player activity may not be sensitive for capturing short-lasting handball-specific movements. Therefore, the aim was to examine activity profiles of a female handball team and individual player profiles, using inertial measurement units (IMUs). Development of fatigue, indicated by temporal or transient declines in activity, was of special interest. Methods Match data was obtained from one female national team in nine international matches ($n=85$ individual player files), using the Catapult OptimEye S5 (Catapult Sports, Australia). Player Load™/min, an accelerometer-derived measure of intensity, was analyzed for 5- and 10-min periods. Team activity levels represent intensity of the players on the field in the given period (minimum one-min field time), and are presented as a percentage of their match average. Individual player activity levels are based on periods with a minimum of 60% field time, and are expressed as a percentage of their average in these 5-min periods. Magnitude based inferences were used to de-