

Expertise and Skill Acquisition Network

**Research network meeting
5th April 2011 at the National Cricket Performance Centre,
Loughborough University**

Arrival Tea\Coffee Welcome 10.30-11.00

**Session One: Motor Control, Learning and Relearning for Performance under
Pressure 11.00-13.00**

Attention, Motor Control & Performing Under Pressure

*Rob Gray
School of Sport & Exercise Sciences
University of Birmingham*

Previous research has shown that what an athlete chooses to focus their attention on during skill execution can have dramatic effects on sports performance and that shifts in the attentional focus may be a cause of “choking under pressure”. But how does attention effect movement? In this talk, I will present results from a series of experiments which investigated the mutual interaction between attention, kinematics and performance in golf putting. Experimental manipulations that will be discussed include dual tasks, performance pressure, and a task in which the golfer is required to stop the putting stroke in response to a signal.

Learning with Anxiety

*Dr Gav Lawrence
Institute for the Psychology of Elite Performance
School of Sport, Health & Exercise Sciences
Bangor University*

The ‘choking’ phenomenon has been explained by a number of different theoretical approaches (i.e., self focus, distraction), but one hypothesis that has been overlooked is that of specificity of practice. This talk will present two experiments from a series of studies investigating the stress and performance relationship with a specificity context. Specifically, the two experiments investigated whether the principles of specificity could be extended to the psychological construct of anxiety and whether any benefits of practicing with anxiety are dependent on the amount of exposure and timing of that exposure in relation to where in learning the exposure occurs. In Experiment 1, novices practiced a discrete golf-putting task under one of four groups: all practice trials under anxiety (anxiety), non-anxiety (control), or a

combination of these two; i.e., the first half of practice under anxiety before changing to non-anxiety conditions (anxiety-control) or the reverse of this (control-anxiety). Following acquisition, all groups were transferred to an anxiety condition. Results revealed a significant decrement in performance between acquisition and transfer only for the control group. In Experiment 2, novices practiced a complex rock climbing task under one of the four conditions detailed above, before being transferred to a high anxiety and then a low anxiety condition. Again, performance was greater in anxiety transfer following practice with anxiety. However, these benefits were influenced by the timing of anxiety exposure since performance was reduced when exposure to anxiety occurred from the start of acquisition. In the low anxiety transfer test, performance was lowest for those who had practiced only with anxiety, thus performance in this group was specific to the presence of anxiety. Results suggest that the specificity of learning principle should be extended to include the psychological construct of anxiety but that exposure to anxiety from the start of learning is detrimental in complex tasks

A Framework for Technique Change in Closed Skill Sports: An Archery Example

Oliver Logan

Biomechanist, Archery GB, English Institute of Sport, Lilleshall National Sports Centre, Shropshire

Three Olympic level female archers were identified as requiring a major technical change by the GB Olympic head coach. A framework for technical change for each of the archers was drawn up utilising gradually increasing contextual interference during the learning, practice and performance under pressure phases of the technical change. All archers were competent in the new technique within one month and it was found that the main limiting factor to competitive shooting was strength limitations due to utilisation of different muscle groups and/or having an additional postural technical change which added an additional task requirement.

Lunch 13.00-14.00

Session Two: Learning to Anticipate 14.00-15.30

Explicit or Implicit? The Use of Confidence in Anticipation Skill Tasks

Robin C. Jackson

Brunel University

Researchers are often interested in finding out about the knowledge base and processes underlying learning and performance. One way in which inferences may be made about the explicit / implicit nature of judgments is through assessing participant confidence. According to Higher Order Thought theory, when a first-order state is conscious it is reflected in higher-order thoughts about the first-order state. For example, a positive correlation between improved judgments and associated confidence constitutes evidence of explicit learning. In this presentation I consider what judgment confidence reveals about the explicit / implicit nature of anticipation skill.

Anticipation skill training: What should we train and how should we train it?

*Nicholas J. Smeeton
University of Brighton*

How to train anticipation skill is a question relevant to both academics and practitioners. Research in this area has focused on concept also relevant to motor skill acquisition to evaluate the effectiveness of anticipation training protocols. Results from these studies have generally shown that the inclusion of stimulus occlusion, replicating the typical viewing perspective, a prediction task and the provision of feedback are important for learning this skill. As well as outlining these important features, I will report on recent attempts to train anticipation skill using imagery and stimulus modification. Future directions for research in this area will be suggested.

Tea and Coffee break 15.30-15.45

Session Three: Closing the Theory-Practice Loop: A Ring of Fire or a Wheel of Good Fortune. 15.45-17.00

*Skill Acquisition, Expertise and ECB Projects
Michael Bourne, England and Wales Cricket Board*

The ECB has a number of projects which are influenced by skill acquisition and expertise research. I will look to provide an outline of how skill acquisition and expertise research has impacted upon the performance arm of the ECB; also the current projects being undertaken or planned which are directly influenced by the findings of skill acquisition and expertise research.

Closing Remarks

Please note we have allocated each session discussion time. Any Questions about the programme please contact Nick Smeeton n.j.smeeton@brighton.ac.uk