Abstracts submitted for Adventure Sports Coaching Conference 2017

Authors: **Cressida Allwood and Dr Kaye Richards (CPsychol)**

Title: **A mountain still to climb: Mainstreaming gender inclusive leadership and mentoring practices in the outdoors to bridge the gender gap**

Gender and leadership continues to be a hot topic globally, the predominance of male leaders and under-representation of female leaders being no longer deemed economically, morally or socially acceptable. The UN's current agenda for gender equality: 'Step It Up, Planet 50-50 by 2030' asks governments to make national commitments to address the challenges that are holding women back from reaching their full potential. In the UK, Sport England is now adopting quotas, forcing government funded national organisations, to address the issue of gender equality on boards and across sports coaching more broadly. Since April 2017, National Governing Bodies need to 'adopt a target of, and take all appropriate actions to encourage a minimum of 30% of each gender on its Board', of which some of these are in the outdoor sector. However, the outdoor industry has particular challenges with the current gender gap; at the highest level of outdoor leadership the ratio of men to women is 94:6 and at early outdoor career pathways this still remains low at 85:15.

Discussions around parity tend to focus on women's narratives. Yet with male leaders being impelled to find ways to support, encourage and promote female counterparts, understanding differing unconscious biases of male and female leaders, which hinder gender equality is paramount if sustainable change is desired. This presentation will provide an overview of an innovative action research project aimed at increasing collaborative understanding and awareness of perceptions of gender, leadership and mentoring practices in the outdoor industry. The role of a coaching approach integrated as a methodological strategy within the action research process to elicit and understand complexities, paradoxes and tensions in relation to gender will also be examined. In conclusion, the findings will consider responsive strategies that can develop awareness of unconscious gender bias and enhance gender inclusive practices across outdoor leadership.

Author: **Martin Barry**

Title: **Early career coaches – is PJDM being taught, and if so, how?**

This is work which will be completed between July and October 2017 and it will take the form of a positional paper written to stock-take the 'state of the nation' as to where outdoor educators are up to with the teaching and delivery of PJDM and how experience – based judgments fit in. The poster presentation will summarise the paper and guide a discussion / workshop or seminar).

Author: **Eric Brymer CPsychol, FHEA**

Title: **Ecological dynamics in the outdoor and adventure context.**

An effective model of the learner and the learning process pre-empts effective learning design. This paper presents a well-established model of the learner ideally suited to the outdoor and adventure context because of its emphasis on the relationship between the learner and the environment. The model stems from perspectives on behaviour and behaviour change in ecological psychology and dynamical systems theory. This paper presents the salient points of the model for educators interested in the role of affordances and environmental constraints in the learning process, with the aim of designing effective learning programs in outdoor and adventure contexts. Additionally, researchers interested in investigating the validity of outdoor and adventure programs might find that this model succinctly defines the learning process.

Authors: **Dr Howie Carson & Chris Eastabrook**

Title: **Adaptive Automaticity in Adventure Sport: Contemporary Views and Implications**

Traditional motor learning theory (Fitts & Posner, 1967) utilised within adventure sports coach education, characterises learning as a transitional process in which conscious cognitive control develops into a performance that is smooth, effortless and automatic. Recent approaches to skill learning have particularly emphasised the advantages of the automatic performance, demonstrating superior effects for instance under conditions of high physical and mental stress when compared to a conscious mode of control (e.g., Masters & Maxwell, 2008; Wulf, 2013). Such is the importance placed on automaticity over conscious processing by these approaches, that it is suggested that learners can, and should, by-pass an initial stage of conscious movement processing and instead implement *only* implicit or subconscious mechanisms during learning. These approaches expressly avoid attempts to develop conscious understanding of the movement, either through dual-task or external focus activities (Masters, 1992; Wulf, McNevin & Shea, 2001).

This presentation will discuss contemporary views of automaticity as it relates to applied motor tasks in adventure sports. In doing so, it challenges claims that thinking about the movement is *always* bad and that not thinking about the movement is *always* good for performance in adventure (Carson, Toner, Collins, Bertollo & Robazza, 2017). Understanding *when* automaticity occurs during performance and *what* movement elements are in fact automatic, presents a more complex perspective of the construct than has previously been presented and assumed to be an all-or-none process. In short, addressing the 'what to focus on', 'when' and 'how' questions moves us closer to explaining how performance can be adapted to meet the demands of dynamic environments common to adventure sports. In fact, it will be explained that the conscious performance state may even serve to benefit adventure performance under the most pressured of situations (Carson & Collins, 2016).

Carson, H. J. & Collins, D. (2016). The fourth dimension: A motoric perspective on the anxiety–performance relationship. International Review of Sport and Exercise Psychology, 9, 1–21. doi:10.1080/1750984X.2015.1072231

Carson, H. J., Toner, J., Collins, D., Bertollo, M. & Robazza, C. (2017). Optimising competitive performances in sport: A need to go "Back to the Future". Manuscript in preparation

Fitts, P. M. & Posner, M. I. (1967). Human performance. California: Brooks/Cole Publishing Company.

Masters, R. & Maxwell, J. (2008). The theory of reinvestment. International Review of Sport and Exercise Psychology, 1, 160–183. doi:10.1080/17509840802287218

Masters, R. S. W. (1992). Knowledge, knerves and know-how: The role of explicit versus implicit knowledge in the breakdown of a complex motor skill under pressure. British Journal of Psychology, 83, 343–358. doi:10.1111/j.2044-8295.1992.tb02446.x

Wulf, G. (2013). Attentional focus and motor learning: A review of 15 years. International Review of Sport and Exercise Psychology, 6, 77–104. doi:10.1080/1750984x.2012.723728

Wulf, G., McNevin, N. & Shea, C. H. (2001). The automaticity of complex motor skill learning as a function of attentional focus. The Quarterly Journal of Experimental Psychology Section A, 54, 1143–1154. doi:10.1080/713756012

Authors: **Ed Christian, Matt Berry and Phil Kearney**

Title: **The identity, epistemology and developmental experiences of high-level adventure sports coaches**

This study aims to further the literature on the identity and practices of adventure sports coaches. Previous research has shown that these coaches hold well defined epistemic beliefs that underpin their approaches to coaching. We sought to explore whether these findings applied to a more diverse sample and to examine their working practices and developmental experiences. Semi-structured interviews were conducted on high-level adventure sports coaches. Inductive thematic analysis showed that (1) the coaches share similar working practices which are unpredictable and varied, (2) that the coaches possess and can articulate sophisticated epistemological beliefs and (3) the coaches consider themselves to be on a constant learning journey. The findings are discussed in relation to educating future coaches

---

Authors: **Prof Dave Collins and Dr Loel Collins**

Title: **A Route to Competence or Expertise? Redesigning Training and Accreditation Systems in Adventure Sport Coaching**

The training and accreditation of sports coaches has a long history in Adventure Sports, albeit that Adventure Sports Coaches (hereafter ASCs) have gone by a number of titles! Clearly, this process serves a number of purposes including but not limited to, client safety, cover against litigation, and quality of service and promoting enjoyment. Historically, coach education and accreditation was locked to a National Vocational Qualification structure; promoted at the time as a way of moving coaching in all its guises to awards a professional structure and status.

All coaching is unarguably complex and it may well be that the competency structures used by this approach lack the subtlety for many of the decisions which coaches must make on a daily basis (Collins, Martindale, Burke & Cruickshank, 2015). For ASCs, the hyper-dynamic nature of the challenge makes this element even more important (Collins & Collins, 2015). In other words, whilst some elements of AS practice are clearly competencies (that know is either right or wrong!), much of this is essentially a 'shades of grey' environment, where multiple options with subsequent chains

of consequence exist. This is where expertise is essential (Nash, Martindale, Collins & Martindale, 2012).

In this presentation, we present ways in which both training and accreditation (together with post qualification CPD) can be built around an expertise structure. Using examples from methods designed for and in use with Motorsport and Freeskiing and Snowboarding, we suggest some key changes which can be used to introduce, promote and evaluate the key skills of Professional Judgement and Decision Making (PJDM – Abraham & Collins, 2011) in AS settings. We also show how errors in PJDM, and systems which 'cover up' these errors, are unfortunately common features of some high risk professions.

Abraham, A. & Collins, D. (2011). Taking the Next Step: Ways Forward for Coaching Science. Quest, 63, 366-384.

Collins, L., & Collins, D. (2015) Integration of professional judgement and decision-making in high-level adventure sports coaching practice. Journal of Sports Sciences, 33 (6). pp. 622-633. ISSN 0264-0414

Collins, D., Martindale, A. Burke, V. & Cruickshank, A. (2015). The Illusion of Competency versus the Desirability of Expertise: Seeking a Common Standard for Support Professions in Sport. Sports Medicine, 45(1), 1-7.

Nash, C., Martindale, R., Collins, D., & Martindale, A. (2012). Parameterising Expertise in Coaching: Past, Present and Future. Journal of Sports Sciences, DOI:10.1080/02640414.2012.682079

Authors: **Dr Paul Gray**

Title: **Using Social Interaction to promote 'All good Coaching is individualised'**

Adventure Sport Coach and participant interactions are abundant, eclectic and pervasive, owing somewhat to the coach's omnipresence within the dynamic and open environment within which they are undertaken. However, limited attention has been paid to the social aspect of coaching (Cushion, 2010), which, along with interactive practices, is an underdeveloped, and under researched area (Potrac, Jones & Armour, 2002; Jones, Potrac, Cushion & Ronglan, 2011). This is somewhat surprising due to the social nature of coaching (Dennison, 2007). Accordingly, and in the absence of any literature or evidence within the adventure sports context, exploration of the potential influence of social interaction and how this might contribute to current Adventure Sport Coach Education was the focus of this DProf research.

British Canoeing Level 5 Coaches' (n=4), recreational paddlesport participants' (n=14) and my own perspectives (n=1) were all considered through a range of data collection methods; including, but not exclusive to, semi-structured interviews, field observations and the personal narrative. Interpretive Phenomenological Analysis guidelines (Smith, Flowers & Larkin, 2009) were observed and emergent themes within and throughout all perspectives supported social and interpersonal interaction as influential. Pertinent to such influences within the applied context were the coaches' utilisation of 'informal interactions' (Levett-Jones, et al., 2009) and 'conversational centering'. This promoted a commonality of people, place and experience and supports the 'all good coaching is individualised' philosophy.

It was also highlighted that Adventure Sport Coaches training of, and understanding in, the value and influence of social and interpersonal interaction is limited. As such, the innovative approach of the personal narrative to explore and write about coaching (Jones, 2006) is suggested as a means to consider and challenge current Adventure Sports Coach education and practices.

Cushion, C. (2010). Understanding the change process. Valuing what it is that coaches do. International Journal of Sport Science & Coaching, 5, 181-182. doi: 10.1260/1747-9541.5.2.181

Denison, J. (2007). Social Theory for Coaches: A Foucauldian reading of one athlete's poor performance. International Journal of Sports Science & Coaching, 2, 369-383.

Jones, R., L. (2006). Dilemmas, maintaining 'face' and paranoia: An average coaching life. Qualitative Inquiry, 12, 1012–21.

Jones, R. L., Potrac, P., Cushion, C., & Ronglan, T. (Eds). (2011). The Sociology of Sports Coaching. London: Routledge.

Levett-Jones, T., Lathlean, J., Higgins, I., & McMillan, M. (2009). Staff-student relationships and their impact on nursing "students" belongingness and learning. Journal of Advanced Nursing, 65, 316-324.

Potrac, P., Jones, R.L., & Armour, K. (2002). 'It's all about getting respect': The coaching behaviours of an expert English soccer coach. Sport, Education & Society, 7, 183-202. doi: 10.1080/135733202200018869

Smith, J.A., Flowers, P., & Larkin, M. (2009). Interpretive Phenomenological Analysis: Theory, Method and Research. London: Sage.

Authors: **William Hardy**

Title: **Understanding completion rates of the Mountain Leader qualification: Potential implications for coaches.**

There are mismatches between the numbers of people registering, training for and passing each of Mountain Training's qualifications in a given year, with the mismatch being greater for the lower awards than higher awards. Further, whilst literature exists in relevant such as career development (Ng, Eby, Sorensen, & Feldman, 2005) and talent development in sport (Rees et al., 2016), to the best of our knowledge, no systematic examination of factors influencing completion rates in Mountain Leader qualifications has been undertaken. These studies represent the first part of a wider project examining factors influencing mountain leader completion rates, and how such completion rates might be improved.

We have collected over 40 hours of semi-structured in-depth interview data from Mountain Training officers and high-volume providers ($n=7$, $n_{women}=2$, $M_{age}=49.13_{years}$, $SD=7.12_{years}$). The interviews covered six broad themes: Candidate Background; Candidate Career History; Social Influence; Personal Characteristics; Experience and Ability; and Candidate Support.

The second study will analyse quantitative data from Mountain Training's Candidate Management System and additional data collected using an online questionnaire.

We expect initial analysis of these studies to be ready for January 2018.

Ng, T. W. H., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). Pedictors of objective and subjective career success: A meta-analysis. Personnel Psychology, 58(2), 367–408. https://doi.org/10.1111/j.1744-6570.2005.00515.x

Rees, T., Hardy, L., Güllich, A., Abernthey, B., Côté, J., Woodman, T., Warr, C. (2016). The Great British Medallists Project: A Review of Current Knowledge on the Development of the World's Best Sporting Talent. Sports Medicine, 46, 1041–1058. https://doi.org/10.1007/s40279-016-0476-2

Authors: **Mark Hickman, Allison Inkster, Sharon Rosser and Peter Stokes.**

Title: **Understanding successful ageing through 'Nature Challenge Activities': Insights from older adult climbers, cavers and sea kayakers aged 55+.**

Developments in social gerontology show the need to more effectively understand the relationship between physical activity and wellbeing in older adults (Chodzko-Zajko, 2014). Whilst some cultures celebrate and accord respect to the ageing process, casting it as one of developing knowledge and wisdom, the trend in many western countries is for it to be 'pathologized' and turned into a problem. This has been clearly seen in Britain by the tendency of politicians to correspond the ageing process with fiscal and societal burdening.

Established evidence shows a connection between older adults' physical activity and health and wellbeing (Nimrod, 2011), often with prescribed exercise being used to promote and underpin these. However, researchers have recently called this into question suggesting that 'adventure sports' could offer a viable alternative with an even wider range of long-term benefits (Boyes, 2013; Howes, 2016). With the advantages of being self-paced, experiential, connected to both natural environment and affording high levels of social interaction, research into the value of such experiences remains in its infancy (Hickman, Inkster & Rosser, 2017).

Steptoe, Deaton and Stone (2015) identify three core elements of subjective wellbeing:

- evaluative (life satisfaction)
- hedonic (happiness)
- eudemonic (sense of meaning and purpose).

The research supporting this presentation will clearly show that, in a range of diverse ways, 'adventure sports' participation supports the development of each of these.

However, the presentation will engage with the problematic terminology associated with 'adventure sport' (Rinehart & Sydnor, 2003; Robinson, 2008). This research supports Stebbins' (2005) disputation over the notion that engagement in activities such climbing, caving and sea kayaking focuses on risk, danger or even adventure. Instead, such activities are perceived and described by the older adults in this research as closer to Stebbins' (2009) proposal that 'nature challenge activities' focus on task completion and immersion in serious leisure.

Boyes, M. (2013) Outdoor adventure and successful ageing. Ageing and Society, 33, 644-665

Chodzko-Zajko, W.J. (2014). Exercise and physical activity for older adults. Kinesiology Review. 3 (1), 101-106.

Howes, M. (2016). Challenging fitness ideology: Why an adventurous approach to physical activity is better for well-being. Sport, Ethics and Philosophy. 10 (2), 132-147.

Hickman, M., Inkster, A. & Rosser, S. (2017). Adventure sport and older adults: a case study of socialisation through caving and potential implications for practitioners. Paper presented at the Institute for Outdoor Learning North West Region Conference. University of Cumbria. 20th January.

Nimrod, G. (2011). The impact of leisure activity and innovation on the well being of the very old. In Poon, L.W. & Cohen-Mansfield, J. Understanding well being in the oldest old. (240-257). New York: CUP.

Rinehart, R.E. & Sydnor, S. (2003). To the Extreme: Alternative Sports Inside and Out. New York. State University of New York Press.

Robinson, V. (2008). Everyday Masculinities and Extreme Sport: Male Identity and Rock Climbing. London: Bloomsbury.

Stebbins, R.A. (2005). Challenging Mountain Nature: Risk, Motive and Lifestyle in Three Hobbyist Sports. Calgary. Detselig.

Stebbins, R.A. (2009). Nature Challenge Activities: Answering the Call of the Wild. Leisure Studies Association Newsletter. No 84 – November, 15-18.

Steptoe, A., Deaton, A. & Stone, A. (2015). Subjective wellbeing, health and ageing. The Lancet. 385 (9968), 640-648.

Authors: **Dr C. Low and Dr D. Piggott**

Title: **Simplifying the complexity of sport to facilitate effective planning**

The concept of the adventure sports coach has recently emerged (Collins & Collins 2012) driven by an increase in popularity and exposure of formal competition alongside a general growth in interest in structured training to enhance personal performance. A key role of a coach, in any sport, is the planning of appropriate activities for their participants or athletes (ICCE, 2013). Coaches need to understand the needs, wants and abilities of their athletes against the demands of their sport (e.g. technical, tactical, physical, and psychological) in order to facilitate effective learning and development (Abraham, Muir & Morgan, 2010). As coaches move from single session delivery to multiple sessions, with the aim of developing individuals over a long period of time, the planning process can become more challenging. Coaches often struggle to decide how to prioritise and organise the different demands of their sport. Recent research has identified that some of the key characteristics of 'serial winning coaches' include an ability to simplify the complexity of their sport and use simple models to structure long-term plans (Mallet & Lara-Bercial, 2016). Based on the ideas of Suits (1978) and Piggott & Lara-Bercial (2015), this workshop will help coaches to simplify the way they think about their sport and start to develop a personal vision, or philosophy, for the way the sport should be played. Based on this vision, participants will be challenged to create a performance model that can guide their decision making when creating bespoke long term plans for their adventure sports athletes.

Authors: **Dr S. McElligott, Institute for the Psychology of Elite Performance; School of Sport, Health and Exercise Sciences, Bangor University; G. Jarvis Mountain Training England.**

Title: **Translating Transformational leadership: Intervention Development and Evaluation**

In 2016, the Mountain Training Association commissioned CPD leadership workshops for the benefit of MTA members. Four pilot workshops successfully ran during autumn 2016. Three more occurred in Spring 2017. Evaluation of the workshops was carried out via anonymous feedback forms.

Objectives were i) To develop a leadership training intervention using the validated seven-factor transformational leadership model (Callow et al., 2009; Hardy et al., 2010) as used by the British military; ii) To evaluate the effects of the intervention.

Transformational leadership interventions have been demonstrated to have a positive impact on followers' outcomes across a diverse range of contexts, and was thus deemed relevant to the training needs of MTA.

From seven workshops, data were collected from 60 males and 15 females (Mage=44.97, SD= 12.11 years), each completing anonymous feedback forms at the end of the workshops.

Participants were asked 6 questions. Of the 66 feedback forms collected, 61 participants stated that the workshop met or exceeded their expectations (3 n/r). 65 reported that they would recommend the workshop to others, and 12 specifically commented that the content would be well placed within NGB syllabi. Comments included: The direct applicability of the content of the workshop to general work life; having a greater understanding of the topic, being offered practical tools to use, and the usefulness of being able to discuss the topic in peer groups.

Feedback demonstrated that the workshops offered participants practical, relevant, useful information and tools with which to develop leadership practice. Participants stated that the leadership model would be a valuable addition to NGB syllabi. An MTA-specific acronym for the leadership model ('INSPIRE') has now been developed and included into the continuing workshops. A series of articles discussing the application of the model has been presented in The Professional Mountaineer publication.

Callow, N., Smith, M. J., Hardy, L., Arthur, C. A., & Hardy, J. (2009). Measurement

---

Authors**: Alice Mees**

Title: **Judgement and Decision Making: development and progression for Outdoor Instructors**

Decision making has been identified a key competency in the profession of outdoor leadership (Boyes & O'Hare, 2003; Collins & Collins, 2013). This seminar reports on parts of a project researching two key areas of competent instructor practices. Firstly; to identify the nature of expertise and secondly; judgement and decision making in a sample of competent Outdoor Instructor (defined by experience and competency based assessments, both NGB and in-house). The

unique aspect of this study lies in the demographic, studying competent instructors where previous research of this nature has focused on expert Instructors.

The project considers if expertise for outdoor instructors may be best described as adaptive expertise (Hatano & Inagaki, 1986). This aims ultimately to clarify and define the 'end goal' of instructor development: What type of expert do we want to develop? By recognising the 'start point' of instructor development, an examination of judgment and decision making in competent outdoor instructors may then be conducted to comprehend judgement making and its development. The aim is then to identify and analyse the key components of competent Outdoor Instructor Judgement and Decision Making (JDM), to discover what competent Outdoor Instructors understand about their JDM, and to consider this can be developed.

Boyes, M., & O'Hare, D. (2003). Between safety and risk: A model for outdoor adventure decision making. Journal of Adventure Education & Outdoor Learning, 3(1), 63–76. http://doi.org/10.1080/14729670385200251

Carbonell, K., Könings, K., Segers, M., & Merriënboer, J. (2016). Measuring adaptive expertise: development and validation of an instrument. European Journal of Work and Organizational Psychology, 25(2), 167–180. http://doi.org/10.1080/1359432X.2015.1036858

Collins, L., & Collins, D. (2013). Decision Making and Risk Management in Adventure Sports Coaching. Quest, 65(November 2014), 72–82. http://doi.org/10.1080/00336297.2012.727373

Hatano, G., & Inagaki, K. (1986). Two courses of expertise. In H. Stevenson, H. Azuma, & K. Hakuta (Eds.), Child Development and Edication in Japan (pp. 262–272). New York, NY: Freeman. http://doi.org/10.1002/ccd.10470

Authors: **James Mitchell**

Title: **The potential for eye-tracking technology to inform coach education in the observational analysis of climbing movement**.

Several authors have suggested that visual perception is the most efficient means to obtain information about the environment in which actions appear (e.g., Williams, Davids, & Williams, 1999), and an effective visual performance requires that the observer focuses attention only on the most relevant or crucial sources of information. Experts possess more specific knowledge of the task and a greater ability to select, process, codify, organise, and recover the information in a more efficient way (Nougier, Ripoll, & Stein, 1989; Helsen & Pauwels, 1992).

Coaches use observation as a fundamental tool as part of their coaching activity. The vision and qualities of the coach's observation (diagnosis, analysis and feedback) informs every aspect of the coach's training and competition. Through such observations, the coach picks the most relevant information, managing it in search of the decisions that are best suited to different contexts and problems faced (Moreno et al, 2006).

Effective visual search strategies depend upon task-specific knowledge (see Williams, et al., 1999) developed through years of experience. Eye-tracking technology has the potential to capture the visual search strategies and underpinning cognitive process of expert coaches, providing an empirical basis on which to develop future observational analysis tools. The present study compares the visual search strategies of three groups of climbing coaches (novice, intermediate and expert), illustrating

the potential value of eye-tracking technology to inform our understanding of observational analysis in the coaching of climbing movement, or any other movement-based sport.

Authors: **Dr Suresh Paul**

Title: **Optimising Coaching Performance in Inclusive Adventure with Disabled Athletes**

This presentation reports on the findings of seven field studies of inclusive adventure experiences over a 5 year period. Utilising a mixed methodology the case studies use observation of performances, semi structured interviews and guided reflection as the basis for a critical content analysis. Analysis revealed that the performers and their coaches optimised performance with disabled adventurers by adopting a positive functional approach. The ASC operates within a challenge social 'mess' that is specific to inclusive sport. The presentation concludes by outlining a set of models that aid the ASC in navigating the challenges inherent in adventure sports and the social complexities of inclusive sport. The models provide guidance in the critical judgement and decision making for ASC working in inclusive adventure.

Authors: **Simon, S., Collins, L., and Carson, H.J.**

Title: **Observation, Decision Making, Technical Templates, Para-Canoe, Inclusive Coaching**

As identified by previous studies (Harvey, Lyle, and Muir 2015), the acquisition (process of developing from novice level) and demonstration (actual implementation) of expert practice within dynamic environments relies on the coach's ability to exercise professional judgment and decision making (PJDM) skill throughout the coaching process, (Cotterill and Discombe 2016).

Further, Collins and Collins (2013) proposed that these two decision making processes are operationalized synergistically in adventure sport coaching. Both experience and reflection serve to create diverse knowledge (tacit and explicit) representations, or mental models, that underpin effective PJDM in context and allow performance to be developed (Belling, Suss, and Ward 2015; Collins, Carson, and Collins 2016). Frequent activation of these mental models through quality reflective experiences increases their establishment within long-term memory (Carson and Collins, 2016). As such, a more vivid, robust, and accessible mental template of performance is available, making knowledge retrieval of these aspects faster and efficient.

However, what this literature has not yet addressed are the challenges and processes undertaken when a coach with an already existing and well-established mental model for performance must adapt outside of these parameters.

Consequently, we explore nature of challenges faced by paddle-sport coaches working with disabled performers, specifically in terms of how the mental models for performance might be adapted and understood in areas in which the technical templates are, at best, nebulous.

Coaches (N = 5) were purposively sampled to understand how coaches manage the challenge of complexity and chaos through semi-structured interviews.

We present findings that suggest these coaches face complexity while working with performers; one of which is creating a technical template/mental model of performance. In meeting the challenge, the coaches had refined reflective skills and the capacity to manage novel complexities. Good coaching required adaptability, flexibility, innovation, and creativity, which was facilitated by judgements and decisions that allowed the coach to select the right approach and intervention to optimize performance, or to provide the most bespoke experience.

Authors: **Simon, S., Collins, L., and Collins D.**

Title: **Observation, Decision Making, and Technical Templates**

Effective profiling of an individual performer sits at the heart individualized coaching (Collins & Collins, 2016; McGarry, 2009). Observation and questioning, provides the primary mechanism for gathering information (Giblin, Ball, Reid & Abernethey, 2015) on which the profile of a performer is built and the coaching process is individualized. A professional judgment and decision making (PJDM) (Abraham and Collins, 2011) framework enables optimum decisions to be made under time pressure and with limited information that derive from that observation (Collins & Collins, 2016). Observation and the associated decision making can be particularly affected by heuristic bias (Oliviera, Lobinger & Raab, 2014. We extend the work on PJDM via a greater focus on its relationship with observation and we introduce and explore heuristics as a "tool" within the observation process. Specifically, we propose that observation is prone to heuristics built on a coach's experience and understanding.

Reflecting this importance, this initial scoping study of high level paddle-sport coaches, examines the extent to which heuristics play a part in the observation of performers and the PJDM that are derived from that observation. We critically discuss the role of heuristics in observation, before we consider heuristics application. The preliminary findings of this initial pilot study support our suggestion that coaches use heuristics in their observations and, presumably, that observation is therefore susceptible to the advantages and disadvantages of this association with heuristics. Heuristics appear vital for the coaches studied to act in an effective way, (Klein, 2016) given the time pressures and the risks associated with observation in these contexts. The inclusion and development of these processes may have positive and negative impacts on observation yet appears crucial within coach development and education and is worthy of further research.

In addition it seems probable that heuristics play a role in managing the complexity of the coaching process, particularly auditing (Carson and Collins, 2016) and decision making elements derived from that observation. It therefore seems likely that the coaches' mental models and technical templates may be themselves susceptible to heuristics as the in-action auditing creates high cognitive load, as the coach attempts to manage complexity.

Authors: **Rosemary Smith, Helen Hooper and Cath Wilson**

Title: **Learning through sharing experiences: Critical reflections of the experiences of three female outdoor instructors**

As three experienced female outdoor leaders/coaches and coach educators, we turn our attention inward to our perceptions of personal experiences that have shaped our own professional

development. Our experience is that there are a greater number of females now working in the outdoor industry, and one might assume that the experiences of females who participate in adventure sports have changed over the past 25 years. But have they?

Engaging with an autoethnographic methodology, this presentation offers the experiences and critical reflections of three female outdoor instructors, who have been operating in a wide range of adventure sports including Paddle Sport, Mountaineering, Caving and Windsurfing. Working individually, within the constraints of an agreed five pages, our written accounts focused on what were deemed the prevailing influences on our own development as outdoor instructors. These autoethnographic narratives were then shared electronically enabling analysis by the other authors. Following critical discussion and reflection, we can present possible shared influences on our professional pathways, as well as several distinct divergences.

Jones, Adams and Ellis (2013) suggest that autoethnography can be used to create space to think, and in turn comment on cultural practice, and contribute to current research. Drawing on our own experiences in adventure sport disciplines we hope to extend current thinking on gender issues in the outdoors, and contribute to current discussions on coach education in our fields.

Authors: Daniel Webb

Title: **Heuristic decision making in a group of sea kayaking leaders**