Routledge
Taylor & Francis Group

Experiences of Developing Pre-performance Routines with Elite Cricket Players

STEWART T. COTTERILL

Department of Sport & Excercise, University of Gloucestershire, Gloucester, UK

While there is much research exploring the nature of pre-performance routines in sport there is very little work that outlines the process of developing and implementing these routines. This paper documents the development of pre-performance routines in professional cricket prior to the start of the season. The paper describes the method and approach adopted by the sport psychology consultant to develop specific individualized routines for the players involved. The consultant briefly reflects on the process, it's outcomes and potential implications for future practice.

KEYWORDS   Interventions, focusing, preparation

In cricket preparation to perform has been highlighted as being crucial to performance. The great Justin Langer (2008) summed this up, highlighting that "the key to concentration is filling your mind with what you need to do to ensure a successful action, for me to bat there must be nothing but the ball on my mind, this occupies my thoughts before every shot" (p. 40). Pre-performance mental and behavioral routines have been cited in numerous publications as been important to the execution of effective closed-skill performance (Cotterill, 2010). While there is much research that has sought to understand the components and functions of pre-performance routines (Cohn, Rotella, & Lloyd, 1990; Cotterill, 2008; Crews & Boutcher, 1986; Douglas & Fox, 2002; Gayton, Cielinski, Francis-Keniston, & Hearns, 1989; Foster, Weigand, & Baines, 2006; Harle & Vickers, 2001; Holder, 2003; Jackson & Baker, 2001; Jackson, 2003; Lonsdale & Tam, 2008; Mack, 2001; Marlow, Bull, Heath & Shambrook, 1998; McCann, Lavallee, & Lavallee 2001; Moore & Stevenson, 1994; Moran, 1996, 2004; Shaw, 2002; Singer, 2002)

little work has actually considered the processes that might be employed, and the challenges that might be faced in seeking to develop and implement effective routines in professional sport. In response to this the current article seeks to share the experiences of a sport psychology consultant developing pre-performance routines in professional cricket.

In looking to clarify the nature of pre-performance routines Moran (1996) suggested that they are "a sequence of task-relevant thoughts and actions which an athlete engages in systematically prior to his or her performance of a specific sports skill" (p. 177). This definition of pre-performance routines highlights two very clear, and equally important components: task-relevant thoughts and task-relevant actions. Any intervention that seeks to maximize the effectiveness of the developed routines needs to address both of these two important components. A number of specific benefits to the athlete have been highlighted for the use of pre-performance routines (Boutcher, 1992). These benefits include: improving concentration by encouraging the athlete to focus their thoughts on the task-relevant cues, helping the athlete overcome a natural tendency to dwell on negatives, allowing the athlete to select the appropriate performance behaviors, preventing 'warm-up' decrements and the devotion of excessive attention to the mechanics of their automatic skill.

Of central importance when attempting to implement or develop pre-performance routines in sport is to focus on the specific needs of the individual performer (Cotterill, 2010; Holder, 2003; Shaw, 2002). An important, possibly crucial, component of this process is to understand the existing behaviors of the performer. Unless the performer is a novice regarding their stage of skill development they will already have ingrained pre-performance behaviors. The challenge then to the sport psychology consultant is whether to accept that these behaviors exist and try to work with them, or alternatively to try to impose a new set of behaviors which might be more beneficial to performance. Lidor and Singer (2000) suggested that if a new routine is to be developed the earlier this takes place in the skill learning process the better.

Cricket is an interesting sport in that it is both a team and an individual sport. While operating as a team sport it is composed of very discrete passages of play, which involves a player (the bowler) bowling the ball at another player (the batsman). At the same time the batsman is also taking on the rest of the opposition team in the field (Thelwell, Weston, & Greenlees, 2007). These batting and bowling skills can also be referred to as 'closed skill' due to the distinct beginning and end to each passage of play. Both batting and bowling require the execution of a complex sequence of actions. Muller and Abernethy (2006) suggested that cricket batting in particular is a very difficult skill, with minimum error tolerance and severe time constraints. They further suggested that batting takes place at the functional limits of the human visuo-motor system. As a result, the ability to prepare for optimal performance is crucial.

Cricket as a sport, has a large mental component (Bull, James, & Brooks, 2005; Sanctuary, Smith, & Thombs, 2010). Work by Thelwell and Maynard (2002) highlighted that self-confidence, optimal arousal levels, motivation, focus and effective mental preparation are crucial to effective performance. Games can last for a number of days and can require players to bat and bowl consistently over long period of time. Stressful situations regularly occur within the sport (Thelwell et al., 2007), and in response to this players can become engaged in a number of different types of thoughts. These thoughts include: task-focused thoughts, positive/motivational thoughts, negative/inappropriate thoughts and assorted thoughts (Oudejons, Kuijpers, Kooijman, & Bakker, 2011; Slogrove, Potgieter, & Foxcroft, 2003). Any technique that can aid in focusing on the right thoughts will ultimately be conducive to performance.

The sport psychologist in this example was contracted to the professional cricket club and had two-years worth of experience with the club and players. The consultants' philosophy of practice was primarily based on the cognitive behavioral approach. This specifically emerged as a result of training in cognitive behavioral therapy (CBT). As a result the consultant worked from a perspective that focused on the impact of player cognitions on their behaviors and performance.

Both of the players referred to in this article had approached the consultant during the off-season specifically looking for strategies to enhance their ability to focus during performance and to know when to switch on and off. The two players referred to in this paper highlighted specific issues regarding what to think about during this initial stage of their preparation to perform. The notion of concentration, or allocation of attention, appeared central to the performer's requirements. While both of the players had very consistent behavioral routines, they did not really have any concrete cognitive components to their pre-performance preparation. As a result, various unhelpful thought processes such as fortune telling, negative self-talk, dwelling on the past, and thinking about the present situation took place.

The consultant sought to develop individualized pre-performance routines based on a number of specific factors. These factors included: (a) the specific requirements of the task, (b) the existing behaviors, (c) the preferred mindset, and (d) required outcomes. This approach was adopted based upon the recommendations of Cotterill, Sanders, and Collins (2010) that were developed following their qualitative study exploring pre-performance routine use and development in elite golf.

FACTORS INFLUENCING ROUTINE DEVELOPMENT

Task Requirements

The approach taken reflected the fact that the individual player would be the best source of information regarding what he wanted his pre-performance

routine to achieve. Seeking to clarify what, in the player's mind, was the main function of the routine (execution, of a skill, decision making, focusing on task relevant cues). This also recognized that the process for a batsman differs from that of a bowler, and that one batsman is a different to another. It was also important to understand the individual players' perceptions regarding task requirements/demands and to avoid a one size fits all approach.

Existing Behaviors

The consultant recognized that each player's performance at this level was the result of thousands of hours of deliberate practice. Trying to "unlearn" habitual behaviors at this point would have been time consuming and un-certainty would exist regarding whether this would have been successful. As a result, where possible, utilizing existing behaviors as the basis for the routine appeared crucial to the development of an effective routine.

Preferred Mindset

Of central importance in the development of an effective pre-performance routine is the optimal mindset for each performer. Recognizing that some performers need to be calm to perform while others need to increase their arousal levels is important. The consistent achievement of this preferred mindset plays significant role of the pre-performance routine in determining consistent successful performance (Cotterill, 2010). As a result, enabling the performer to consistently achieve their preferred mindset appears crucial.

Required Outcomes

This focused on understanding what outcomes the players were looking to gain from each of the components of their routines. Specifically regarding the required outcome: was the player looking to be more relaxed, re-focused, or have control of their arousal level?

A FIVE-STEP APPROACH TO DEVELOPING PRE-PERFORMANCE ROUTINES

A five-step approach was adopted to gain the information highlighted in the previous section and to develop the components of the individual routines. This approach enabled the consultant to collect the information highlighted as important in the previously mentioned four factors. These five steps had

been developed and modified over time by the consultant, working with previous clients. These five steps were: (a) videotaping performance, (b) clarifying behavior meaning, (c) developing a focus and function for each behavioral component, (d) routine construction and agreement, and (e) practice.

Videotaping Performance

In order to facilitate the development of a more effective pre-performance routine the first step sought to determine the existing practice for each of the professional players. To this end each player was analyzed using video from both competition and practice to determine the range and consistency of existing pre-performance behaviors. Competition routines were taken from the player's video archive for the previous season, and practice data was videotaped with the player performing in the indoor nets (practice).

Clarifying Behavior Meaning

Once the player's routines had been recorded, the second step involved showing the players exemplary footage of their behavioral routines. A think-aloud protocol similar to that utilized by a range of research studies (Cotterill, Sanders, & Collins, 2010; Ericsson & Simon, 1993; Ram & McCullagh, 2003) was adopted. This involved the consultant sitting down with the players and firstly exploring how aware the players were of their existing pre-performance routine behaviors and how consistent the players felt these behaviors were.

Developing a Focus and Function for Each Behavioral Component

The third step sought to identify each discrete behavioral component of the routines and to discuss what the players felt they did at each step in their existing routines. This step involved the players executing their existing behaviors in a practice environment, then after each ball was bowled or faced, discussing with the consultant what each of the behaviors meant and what functions the player felt that it served. Players were also encouraged to discuss any existing psychological strategies that they employed in conjunction with the highlighted behaviors.

Routine Construction and Agreement

In order to achieve these highlighted functions the consultant endeavored to develop a specific mental component to accompany the well-developed behavioral components. As a result, understanding the perceived function of each behavioral component was important. This fourth step sought to

explore what the players were seeking to achieve in the preparation period (e.g., relaxing, focusing, setting stance, engaging in imagery). Once the meaning of the behavior was highlighted a relevant trigger-word (Moran, 2004) was negotiated that fitted with the meaning and time period associated with that behavior. This approach is similar to that adopted by both Rotella (1995) in the development of "swing thoughts" in golf and Hill and Borden's (1993) development of attentional cueing scripts with competitive bowlers. This process enabled the development of a simple integrated behavioral and mental routine. This approach is similar to that suggested by Singer (1988) in his five-stage approach to performance in self-paced skills. In this approach Singer suggested the following five stages: readying, imaging, focusing, executing and evaluating. Each of these stages is of specific relevance regarding both batting and bowling performance in cricket. The suggestions for the mental components in these cricket interventions were designed not to be overly complex. If a player needed to relax then a simple trigger word such as 'breathe' or 'relax' was employed.

Practice

Once the routines had been developed, the fifth and final step required each routine to be integrated into regular practice. Initially the consultant gained agreement from both the players that they would operate a think aloud approach (Cotterill et al., 2010; Ericsson & Simon, 1993; Ram & McCullagh, 2003). This involved vocalizing the thoughts that had been developed to go with the relevant behavior. This approach sought to fulfill two specific requirements. Firstly, for the players to "learn" the mental components of the routines, and secondly to create an association between the behavioral and the cue words. Once this had been practiced the next step was to remove the think aloud aspect, recognizing that trying to verbalize the thoughts was cognitively more demanding and disruptive. Again, the focus of the session in the practice nets was on the successful integration of the behavioral and mental components of the routines. This process was repeated on three separate occasions with the sport psychology consultant present. The players then continued to integrate this process into all of their practice sessions (agreed as part of the initial contracting between the consultant and the player regarding what behaviors and practice the player would commit to). The explicit aim here was to work towards creating a habitual routine, which further complemented the existing behaviors. Discussions with the coaching staff working with players also reinforced the continued learning and practice of the routines. The coaches specifically made reference to the developed routines for the players in each practice "net" session. This built upon reflections by Shaw (2002), on the importance of initially overlearning the necessary skills and techniques, after developing a pre-performance routine for a professional golfer.

The incorporation of the existing behavioral routines was a definite advantage in the current interventions. This also appears to be the only realistic approach to developing effective routines in professional sport. Any performer who has moved beyond an absolute novice stage will have habitual preparatory behaviors/movements. Trying to modify these would be time consuming and decreases in performance are a very real possibility (Schmidt & Lee, 1999). This is supported by neuroscience literature which highlights the changes that take place I the brain through skill learning and habit formation. For example, Travis, Tecce, and Guttman (2002) suggest that consciously performing any task regularly over time may lead to cortical reorganization and that the reversal of this process is difficult to achieve. However, there could be exceptional circumstances where changing the existing behaviors are in the best interests of the player. This might be because of the use of over elaborate excessive behaviours, and/or perfectionist conditions. This could also include any behaviors that either put the player at physical risk (increased possibility of injury) or present a psychological risk to the player. In the development of pre-performance routines in sport there is a significant degree of backward chaining that takes place (Foster, Weigand, & Baines, 2006). As a result the pre-performance behaviors could just be associated with successful performance (rituals) rather than explicitly contribute to it (routines). As such, understanding the function that routine components fulfil is important.

The challenge for the sport psychology consultant is to accept these existing behaviors and seek to understand why they are used. Attempting to modify pre-existing behaviors could decrease skill execution consistency and potentially performance outcomes. Both of which in turn could well impact upon the players commitment to the process when they see their performance decreasing. A definite drawback for the consultant in this situation was the amount of time spent with the players. Contact was only once every two weeks with the players generally, and specifically once every week for the initial development of the routines. As a result, there was a lot of practice time in which the consultant was not able to actively reinforce routine use in person. One way to deal with this issue in the future could be to give greater ownership of the reinforcement of the routines and their implementation to the coaching staff working with the players on a day-to-day basis. In essence, the sport psychology consultant could work more effectively through the coaches. Whilst presenting some benefits this also presents the consultant with some specific challenges. Firstly, the coach needs to "buy-in" to the importance of the routine to the player's performance. Secondly, they need to understand the structure of the routine, the rationale for its development, and the methods of teaching and developing it. Thirdly, the coach has to commit to reinforcing the use of the routine in each practice session and afford it equal status to other technical components of practice. This in turn should result in sufficient feedback, reinforcement and questioning by the

coach relating to the implementation of the routine. Recognizing that it might not be possible for the consultant to be present as frequently as required integration with other practitioners, specifically the coaches are crucial.

At all stages throughout this process the sport psychology consultant was keen to ensure that the players were happy with the mental techniques incorporated into their routines and for the players to understand how and why they were being implemented. Shaw (2002) in his reflections on the development of a pre-performance routine for a professional golfer suggested that in future he would encourage the client to keep a detailed diary of the stages of the intervention. The suggested benefit of this was to provide a detailed log of events and hopefully underpin deeper learning. This was suggested to each of the players involved in the current intervention, but in both cases was not taken up. While the keeping of a diary would have been potentially beneficial, there is also a need for the consultant to recognize the extra demand this places on the players. While consultants in general are comfortable actively reflecting and writing notes, for many sports performers this is an unnatural process, and as a result they find it quite demanding. With the continued development of technology alternative approaches are now available. Players could be encouraged to keep digital records of their thoughts and reflections, laptops, smartphones and digital voice recorders are all readily used by sports performers and could be harnessed for this purpose. Alternatively, less instantaneous media such as email and text messages could also be used to encourage players to reflect on the process and their perception of the implementation of their routines.

The development of the pre-performance routines in this article was well received by the two professional players. Both reported feeling comfortable with their routines six weeks after initial development. The process undertaken here is generic enough to be adapted to other closed-skill contexts. Developing a greater understanding of the process of routine development is crucial for sport psychology consultants to be effective in providing routines that fulfill the needs of the performer and ultimately aid performance. As such this article has presented one approach, which has been developed based upon the existing literature underpinning the role and function of pre-performance routines in sport. In particular seeking to try and apply the findings from controlled research studies into the real applied environment of professional sport. The question still remains though, what is the most effective way to teach and develop effective pre-performance routines with real world sports performers in real training and competition settings?

In conclusion, both the participants felt that the routines developed through the process highlighted in this paper were beneficial to the successful execution of their cricketing skills. The steps adopted by the consultant appear to have been successful in achieving the ultimate goal of developing routines with integrated behavioral and mental components. However, a number of challenges have been highlighted that could impact upon the

effectiveness of this approach in the future. As a result these challenges need to be considered in development stage of interventions designed to enhance pre-performance routine use in competitive sport.

REFERENCES

Boutcher, S. H. (1992). Attentional processes and sport performance. In T. S. Horn (Ed.), *Advances in sport psychology* (pp. 251–266). Champaign, IL: Human Kinetics.

Bull, S. J., Shambrook, C. J., James, W., & Brooks, J. E. (2005). Towards an understanding of mental toughness in elite English cricketers. *Journal of Applied Sport Psychology*, *17*, 209–227.

Cohn, P. J., Rotella, R., & Lloyd, J. W. (1990). Effects of a cognitive–behavioral intervention on the pre-shot routine and performance in golf. *The Sport Psychologist*, *4*, 33–42.

Cotterill, S. T. (2008). Developing effective pre-performance routines in golf. *Sport & Exercise Psychology Review*, *4*(2), 10–16.

Cotterill, S. T. (2010). Pre-performance routines in sport: Current understanding and future directions. *International Review of Sport & Exercise Psychology*, *3*(2), 132–154.

Cotterill, S. T., Sanders, R., & Collins, D. (2010). Developing effective pre-performance routines in golf: Why don't we ask the golfer? *Journal of Applied Sport Psychology*, *22*, 51–64.

Crews, D. J., & Boutcher, S. H. (1986). An exploratory observational behavior analysis of professional golfers during competition. *Journal of Sport Behavior*, *9*, 51–58.

Douglas, K., & Fox, K. R. (2002). Performance and practise of elite women European tour golfers during pressure and non-pressure putting simulation. In E. Thain (Ed.), *Science and golf IV* (pp. 246–256). London, UK: Routledge.

Ericsson, K. A., & Simon, H. A. (1993). *Verbal reports as data*. Cambridge, MA: MIT Press.

Foster, D. J., Weigand, D. A., & Baines, D. (2006). The effect of removing superstitious behavior and introducing a pre-performance routine on basketball free-throw performance. *Journal of Applied Sport Psychology*, *18*, 167–171.

Gayton, W. F., Cielinski, K. L., Francis-Keniston, W. J., & Hearns, J. F. (1989). Effects of pre-shot routine on free-throw shooting. *Perceptual and Motor Skills*, *68*, 317–318.

Harle, S. K., & Vickers, J. N. (2001). Training quiet eye improves accuracy in basketball free throw. *The Sport Psychologist*, *15*, 289–305.

Hill, K. L., & Borden, F. (1993). The effect of attentional cueing scripts on competitive bowling performance. *International Journal of Sport Psychology*, *26*, 503–512.

Holder, T. (2003). Concentration training for closed skills: Pre-performance routine. In I. Greenlees, and A. Moran (Eds.), *Concentration skills training in sport* (pp. 67–75). Leicester, UK: The British Psychological Society.

Jackson, R. C. (2003). Pre-performance routine consistency: Temporal analysis of goal kicking in the Rugby Union World Cup. *Journal of Sports Sciences*, *21*, 803–814.

Jackson, R. C., & Baker, J. S. (2001). Routines, rituals, and rugby: A case study of a world class goal kicker. *The Sport Psychologist*, *15*, 48–65.

Langer, J. (2008). Seeing the sunrise. Crows Nest, Australia: Allen & Unwin.

Lidor, R., & Singer, R. N. (2000). Teaching pre-performance routines to beginners. *Journal of Physical Education, Recreation and Dance*, *71*, 34–36.

Lonsdale, C., & Tam, J. T. M. (2007). On the temporal and behavioral consistency of pre-performance routines: An intra-individual analysis of elite basketball players' free throw shooting accuracy. *Journal of Sports Sciences*, *26*, 259–266.

Mack, M. G. (2001). Effects of time and movements of the preshot routine on free throw shooting. *Perceptual and Motor Skills*, *93*, 567–573.

Marlow, C., Bull, S., Heath, B., & Shambrook, C. (1998). The use of a single case design to investigate the effect of a pre-performance routine on the water polo penalty shot. *Journal of Science and Medicine in Sport*, *1*, 143–155.

McCann, P., Lavallee, D., & Lavallee, R. M. (2001). The effect of pre-shot routines on golf wedge shot performance. *European Journal of Sport Science*, *1*, 231–240.

Moore, W. E., & Stevenson, J. R. (1994). Training a pre-shot routine for golf. *Applied Research in Coaching and Athletics Annual*, *9*, 161–167.

Moran, A. P. (1996). *The psychology of concentration in sports performers: A cognitive analysis*. Hove, UK: Psychology Press.

Moran, A. (2004). *Sport and exercise psychology: A critical introduction*. Hove, UK: Routledge.

Muller, S., & Abernethy, B. (2006). Skill learning from an expertise perspective: Issues and implications for practice and coaching in cricket. In J. Dosil (Ed.), *The sport psychologist's handbook: A guide for sport-specific performance enhancement* (pp. 245–264). Chichester, UK: John Wiley.

Oudejons, R., Kuijpers, W., Kooijman, C., Bakker, F. (2011). Thoughts and attention of athletes under pressure: skill-focus or performance worries? *Anxiety, Stress & Coping*, *24*, 59–73.

Ram, N., & McCullagh, P. (2003). Self-modeling: Influence on psychological responses and physical performance. *The Sport Psychologist*, *17*, 220–241.

Rotella, R. (1995). *Golf is not a game of perfect*, New York, NY: Simon and Schuster.

Sanctuary, C., Smith, A., & Thombs, B,(2010). Towards a theory of the interactive factors implicated in successful individual performance in cricket. *International Journal of Sports Science & Coaching*, *5*, 321–338.

Schmidt, R. A., & Lee, T. D. (1999). *Motor control and learning: A behavioral emphasis* (3rd ed.). Champaign. IL: Human Kinetics.

Shaw, D. (2002). Confidence and the pre-shot routine in golf: A case study. In I. Cockerill (Ed.), *Solutions in sport psychology* (pp. 108–119). London, UK: Thomson.

Singer, R. N. (1988). Strategies and meta-strategies in learning and performing self-paced athletic skills. *The Sport Psychologist*, *2*, 49–68.

Singer, R. N. (2002). Pre-performance state, routines, and automaticity: What does it take to realize expertise in self-paced events? *Journal of Sport and Exercise Psychology*, *24*, 359–375.

Slogrove, L., Potgieter, J. R., & Foxcroft, C. D. (2003). Thought sampling of cricketers during batting. *South African Journal for Research in Sport, Physical Education & Recreation*, *25*, 97–113.

Thelwell, R. C., & Maynard, I. W. (2002). A triangulation of findings of three studies investigating repeatable good performance in professional crickets. *International Journal of Sport Psychology*, *33*, 247–268.

Thelwell, R. C., Weston, N. J. V., & Greenlees, I. A. (2007). Batting on a sticky wicket: Identifying sources of stress and associated coping strategies for professional cricket batsmen. *Psychology of Sport & Exercise*, *8*, 219–232.

Travis, F., Tecce, J. J., & Guttman, J. (2002). Cortical plasticity, contingent negative variation, and transcendent experiences during practice of the Transcendental Meditation technique. *Biological Psychology*, *55*, 41–55.