

**Impact case study (REF3b)**

<b>Institution:</b> The University of Wolverhampton
<b>Unit of Assessment:</b> UOA 26: Sports-Related Studies
<b>Title of case study:</b> “Improving performance through the management of mood”
<p><b>1. Summary of the impact</b></p> <p>This case study focuses on the development and usage of self-help material designed to aid people in feeling and performing better. It has achieved impact through raising awareness via mass media and professional outlets. Research informed self-help materials are available for open access via media links, academic organisations, service organisations (NHS), commercial organisations (London Marathon), national governing bodies (Research Councils), and professional bodies (British Association of Sport and Exercise Sciences). An on-line project, run in conjunction with <a href="#">BBC Lab UK</a>, developed and tested self-help interventions with 75,000 users each receiving personalised feedback from former Olympian Michael Johnson.</p>
<p><b>2. Underpinning research</b></p> <p>RCSEP research has focused on developing and testing theory that addresses applied questions (Beedie &amp; Lane, 2012; Lane &amp; Terry, 2000). This has led to <a href="#">two expert statements with practical guidelines</a>, one on emotion regulation and one on using music in sport and exercise. Underpinning this work, RCSEP research has developed valid and reliable measures to enable rigorous testing of theory in different areas. These include a <a href="#">measure of mood</a> validated across cultures (BRUMS: Terry et al., 1999; Terry &amp; Lane, 2010), a measure that distinguishes mood from emotion (Beedie et al., 2011), and a brief measure of emotional intelligence (Davies et al., 2010). RCSEP have developed tools to help guide intervention work including a measure that assesses the motivational effects of music during exercise (Karageorghis et al., 2012).</p> <p>RCSEP have examined the effectiveness of self-regulation strategies used to help people perform and feel better. For example, studies have investigated relationships between mood and performance among athletes (Devonport &amp; Lane, 2009; Friesen, Devonport, Sellars et al., 2013; Lane, 2009). We have also examined how athletes cope during endurance events such as running (Lane et al., 2001; Lane &amp; Wilson, 2010; Stanley et al., 2012), cycling (Beedie et al., 2012) and ultra-endurance in extreme conditions (Devonport &amp; Lane, 2011; Lahart et al., 2013). Work with industry has entailed examination of products such as natural light simulation (<a href="#">Lumie Lights</a>) for athletes who train early in the morning (Lane, 2011), and music designed (<a href="#">AudioFuel</a>) to aid performance (Karageorghis et al., 2012). In conjunction with “<a href="#">Runner’s World</a>”, we examined the use of cognitive strategies such as self-talk and if-then planning to help runners manage emotions and improve performance (Lane et al., 2010). A recent project in collaboration with <a href="#">BBC Lab UK</a> investigated the effects of brief interventions on emotions and performance. In this project, participants received one of three possible interventions before competing in a concentration grid test designed for the study. On completion, participants received personalised feedback addressing emotions associated with best performance, effectiveness of the intervention, and guidance on transferring this knowledge to everyday life.</p> <p>The research group has received considerable external financial support. This includes a 4-year ESRC grant to fund the Emotion Regulation of Others and Self project (£485,000), support to deliver an end-user event during the Festival of Science (Research Councils UK: RCUK, £1000), and support to present at the Research Councils UK, Cutting Edge series with Olympic diver, Tom Daley. The group received a grant from the British Association of Sport and Exercise Sciences (BASES: £1500) to produce an expert statement on emotion regulation (Lane et al., 2012). A Knowing Sport Pilot scheme funded a workshop on emotion regulation as part of a campaign to make science more accessible through sport. The research group have also received a great deal of funding in-kind, for example support from BBC Lab UK including production costs for the on-line platform, filming costs, and promotional costs.</p> <p><b>Key researchers:</b> Professor Andy Lane: School Professor, 2000-present. Dr Tracey Devonport: Reader in Sport and Exercise Psychology, 2001 –present. Dr Chris Beedie: Research fellow, 2010 –2011. Dr Damian Stanley: Research fellow, 2010 –2012. Chris Sellars, Head of Department, Mat Wilson, Senior Lecturer, 2005-2009.</p>
<p><b>3. References to the research</b></p> <p>1. Beedie, C. J., Lane, A. M., Wilson. (2012). A possible role for emotion and emotion</p>

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- regulation in physiological responses to false performance feedback in 10 mile laboratory cycling. *Applied Psychophysiology and Biofeedback*, 37, 269-277. DOI 10.1007/s10484-012-9200-7. (Impact Factor = 1.54; citations, N = 6).
2. Beedie, C. J., & Lane, A. M. (2012). The role of glucose in self-control: Another look at the evidence and an alternative conceptualization. *Personality and Social Psychology Review*. DOI:10.1177/1088868311419817. (Impact Factor = 8.19; citations, N = 21).
  3. Lane, A. M., & Terry, P. C. (2000). The nature of mood: Development of a conceptual model with a focus on depression. *Journal of Applied Sport Psychology*, 12, 16-33. Impact Factor = 1.16; citations, n = 151).
  4. Lane, A. M., Beedie, C. J., Jones, M. V., Uphill, M., & Devonport, T. J. (2012). The BASES Expert Statement on emotion regulation in sport. *Journal of Sport Sciences*, 30, 1189-1195. DOI: 10.1080/02640414.2012.693621. (Impact Factor = 2.08; citations, n = 5).
  5. Lane, A. M., Beedie, C. J., Devonport, T. J., & Stanley, D. M. (2011). Instrumental emotion regulation in sport: relationships between beliefs about emotion and emotion regulation strategies used by athletes. *Scandinavian Journal of Medicine & Science in Sports*, 21, e445-e451. DOI: 10.1111/j.1600-0838.2011.01364.x (Impact Factor = 2.89; citations, n = 6).
  6. Terry, P. C., Lane, A. M., Lane, H. J., & Keohane, L. (1999). Development and validation of a mood measure for adolescents: POMS-A. *Journal of Sports Sciences*, 17, 861-872. DOI: 10.1080/026404199365425. (Impact Factor = 2.08, citations, n = 178).

**4. Details of the impact** (indicative maximum 750 words)

The impact of research produced by this research group can be evidenced in three key ways:

**a) Reach: Raising public awareness**

The strategy to gain wide scale impact has been focused on work designed to raise public awareness. The reach of the research's social impact has been aided by worldwide exposure via the BBC Lab UK, the London Marathon Website, international magazines such as *Runner's World*, and commentary in national and international newspapers. This coverage has led to further exposure via Reuters and other worldwide media agencies. A high-profile example being promotion to recruit participants to the BBC Lab UK project featuring on the prime time television show the 'One-Show' where Michael Johnson narrated the video clips in the research. More recently, a film commissioned by Copa 90, an independent television channel, on dealing with stress during soccer penalty shooting has been viewed over 55,000 times.

**b) Usage of self-help materials**

In an experiment that was conducted in conjunction with *Runner's World Magazine* and *Audiofuel*, RCSEP compared the effects of training interventions assigned to 1050 runners. We provided individualised feedback regarding intervention outcomes, and summarised results on [YouTube](#). Resources developed from the group's research, designed to support runners have been openly available on the London Marathon website since 2010. Tips are also posted via email to all entrants (> 50,000 per year) as part of the build-up to the event and runners can sign up for [monthly training tips](#). Building on this work, the research group hosted a weekend workshop for runners (Knowing Sport Pilot scheme; January, 2011) that introduced a series of self-help interventions focussed on performance enhancement. We have also delivered self-help interventions on mass. In an online experiment run in collaboration with BBC Lab UK (2012-2013), 75,000 people worldwide used brief interventions (imagery, self-talk, and planning) to facilitate performance during a competitive online game. Olympian Michael Johnson delivered the training and narrated the computer-generated individualised feedback. The feedback highlighted the relationship between emotions and performance, and how to change emotions. Comments posted by users were very positive, including accounts of how participation had helped individuals perform better in a range of roles (e.g., musician, exam student, driving instructor, chef, etc). As a result of such initiatives, Professor Lane featured as an expert on the popular weekly podcast "[Marathon Talk](#)", speaking about psychological control for marathon runners.

The group have been involved in three externally funded (RCUK; ESRC) events to disseminate

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findings to the general public. Research Councils UK funded a workshop on emotion regulation for runners intended to disseminate sports sciences to the general public (January, 2011). Participant feedback following this event was positive with a number of runners reporting completing personal best performances in the weeks following the workshop. Second, the group also presented a workshop on emotion and emotion regulation in sport at the Festival of Science (November, 2011). Third, Professor Lane presented at the “Cutting Edge” series on emotional control in diving, June 2012, a presentation that included both Tom Daley and his coach Andy Banks. All three events were popular, attracting over 500 delegates and receiving media coverage, which ensured a wider reach. The cutting edge series is available to view via the [Research Councils video page](#).

**c) Direct benefit of being involved in the research**

Participants have been the immediate beneficiaries of the groups research. For example, participants in the BBC Lab UK project were not only taught how to use an intervention, but also received immediate feedback on their responses to questionnaires and performance in the test. Previously, in the project developed in conjunction with [Runner's World](#), each participant (N= 1050, Lane et al., 2010) received personalised feedback and advice on how to improve their mental approach to running. A further example of benefits to participants can be illustrated by RCSEP's research partnership with NHS West Midlands. A project aimed at improving health and well-being among NHS staff resulted in the development of [e-resources on health, well-being and their measurement](#). These were provided to all NHS employees via open access on the internet. RCSEP also provided self-help material for the [NHS live well project](#) on how to use music when running on the couch to 5km programme.

A strategy to maximise awareness of our underpinning research has been to work with high-profile athletes who engage in extreme sports. For example, we worked with *Sport Relief* in preparation for TV presenter Christine Bleakley's water-ski crossing of the English Channel (March, 2010).

**5. Sources to corroborate the impact****a) Raising Public Awareness; examples include:**

*If I wish to perform better then how should I feel?* This was a [2 hour on-line presentation](#) commissioned by Human Kinetics in conjunction with BASES that included an opportunity for question and answers. A [40-minute Q&A video](#).

*Psychology of penalties.* A film produced by [Copa 90 examining how to control unwanted thoughts and feelings when taking penalties](#) (55,000 views)

*Performing under pressure.* Ricky Gervais and Michael Johnson introduce the [BBC Lab UK project on the One-Show](#)

*ESRC research featuring in BBC Lab UK project.* The BBC Lab UK project featured on the ESRC website as an example of research achieving high profile public dissemination: [News](#) and [Professor Lane on the ESRC database](#)

*BBC webpages:* [‘Raise your Game’](#). [Article on preparing for marathon running](#)

How to use music when running. [NHS live well project](#)

Professional papers for athletes and coaches in [Peak Performance](#)

**b) Usage of self-help materials; examples include:**

*London Marathon: Downloads* > 50,000. Freely accessible resources produced by Professor Lane are available on the [London Marathon website to assist with preparation for marathon running](#).

*Rough guide to running.* [A free 16-page download](#) that covers motivation, music and the psychological benefits of running

*Listen Live.* [Five audio files](#) on mental preparation, beating anxiety, motivation and music

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*AudioFuel.* AudioFuel provided free samples of [AudioFuel music to participants in a running study](#). Many participants found these samples to improve performance and consequently purchased further products from AudioFuel.

*Runner's World.* The publication Runner's World has a worldwide circulation in print version (Europe, The Americas, Africa, and Australasia). Runner's World helped recruit participants for an online study. See below for evidence of the recruitment article and an example of a subsequent publication:

Runner's World, November 2009: '[Running Psychology: Improve Your Performance](#)'.

Runner's World, November 2010: '[Sound Mind, Sound Body: How to Beat Pre-Race Nerves](#)'.

*The Emotion Regulation of Others and Self* [website](#). This website hosts a number of self-help resources provided by the research team. The [ESRC annual report](#) could be used to provide verification of this information.

*International use of the mood measure: BRUMS.* This [self-assessment resource](#) is available online and provides self-help guidance to manage mood.

**c) Direct benefit of being involved in the research; examples include:**

*Research Councils UK.* [Excellence with impact series](#) and Cutting Edge 2012, [RCUK](#).

*The Knowing Sport scheme.* A one day workshop for runners funded by the Knowing Sport Scheme and awarded the '[Inspire](#)' mark.

*Economic and Social Research Council Festival of Social Science.* Emotion regulation activities for the general public were produced for the [festival of social science in Manchester on the 4th November 2011](#).

*British Cycling Annual Coaching Conference.* A lecture and workshop on emotion regulation of others and self and its application to [cycling](#).

*National Health Service: West Midlands.* Professor Lane and Dr Devonport were members of a project team undertaking funded research (£389k) in partnership with NHS West Midlands exploring 'A strategic partnership approach to improving health and well-being in NHS staff'. One outcome of this project was the provision of [e-resources](#) on health, well-being and their measurement.