

Institution: Bangor University, 10007857		
Unit of Assessment: UoA24 - Sport and Exercise Sciences, Leisure and Tourism		
Title of case study: The Great British Medallists Project		
Period when the underpinning research was undertaken: 2009 – 2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): 1) Professor Lew Hardy 2) Dr Matt Barlow 3) Professor Tim Woodman	Role(s) (e.g. job title): 1) Professor in Sport Psychology 2) Research Officer and Lecturer 3) Professor in Sport and Exercise Science	Period(s) employed by submitting HEI: 1) September 1978 – April 2019 2) April 2012 – January 2018 3) November 1999 – present
Period when the claimed impact occurred: November 2013 – 31 July 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>UK Sport commissioned a collaborative team led by Bangor University to understand the development profile of its most successful athletes. Comparing serial-medalling, super-elite athletes to matched, non-medalling elite athletes revealed important commonalities and differences in terms of: demographic variables; practice, training, and competition histories; and psychosocial experiences, development, and personality. Consequent to these findings, UK Sport implemented changes to athlete development through their 2013, 2014, and 2015 World Class Performance Conferences, the 2013 and 2014 English Institute of Sport Annual Conference, and a series of 10 UK forums during 2014. All 42 of UK Sport's National Governing Bodies subsequently implemented the findings to enhance their talent development programmes.</p>		
2. Underpinning research		
<p>The Great British Medallists (GBM) Project was a collaborative research study led by principal investigator Lew Hardy and supported by Matt Barlow and Tim Woodman (Bangor University), with Cardiff Metropolitan University and Exeter University.</p> <p>The Bangor-led research compared the life biographies of serial-medalling, super-elite athletes against those of matched, non-medalling athletes. Participants were 32 former GB Olympians. Sixteen of these were super-elite athletes who were multiple gold medallists at more than one Major Championship (Olympic Games or World Championships). The other 16 elite athletes were funded, international, athletes who had won championship medals, but had not medalled at Major Championships. The groups were matched on sport, sex, discipline, and era.</p> <p>All athletes completed detailed biographical interviews about all aspects of their development and careers. Following this, each athlete designated one coach and one parent (occasionally two), who were also interviewed. After these three interviews had been transcribed, athletes were re-interviewed to fill in any gaps in the data.</p>		

The interviews resulted in over 8,400 pages of transcription. The coding and multi-faceted analyses of the in-depth interview data were completed by six researchers between December 2011 and May 2013. The psychosocial history data were analysed using qualitative procedures. The demographic, practice, training, and competition history data were analysed using parametric and non-parametric statistical procedures. Finally, state-of-the-art pattern recognition analysis adopted from biometrical research was used to identify the multidisciplinary pattern of variables that best discriminated between the two groups of athletes.

The results revealed important commonalities and differences between the two groups in terms of demographic, practice, training, and competition history variables, and psychosocial experiences, development, and personalities. For example, super-elite athletes were more likely than elite athletes to have: experienced a significant negative life event during their development years; been ruthless and selfish, and obsessive and perfectionistic, in the pursuit of the sporting career; been both mastery- and outcome-focused; used total preparation and/or a counterphobic attitude to maintain higher levels of performance under pressure; come back from severe performance setbacks during adulthood and experienced significant career 'turning points' that led to enhanced determination to excel; experienced more diversification coupled with extensive sport-specific practice and competitions during youth sport; and continued performance improvement over more years during adulthood.

These results were reported in detail to UK Sport in a confidential report [3.1]. A major review paper from the project was published in *Sports Medicine* [3.2]. The psychosocial findings and multidisciplinary analyses were published [3.3, 3.4]. The psychosocial findings were published as a target article in *Progress in Brain Research* with invited commentaries from 15 other research groups from across the world.

This study sets down an unparalleled worldwide benchmark for talent identification and development research. It contained a number of highly creditable features, including: an extremely rigorous design process involving a team of the world's leading researchers in the field of talent development; in-depth biographical interviews conducted with super-elite athletes and matched elite athletes, their coaches, and one or both parents; and a coherent and consistent pattern of results that discriminated between super-elite athletes and elite athletes using state-of-the-art pattern recognition analyses. UK Sport awarded GBP308,231 towards the costs of the research [3.a], and also subsidised this award with considerable staff resources. At its busiest period, nine researchers worked full-time on the project. The GBM project was the largest research project funded by UK Sport.

3. References to the research

Research Outputs

3.1 **Hardy, L.**, Laing, S., **Barlow, M.**, Kuncheva, L., Evans, L., Rees, T., **Woodman, T.**, Abernethy, B., Güllich, A., Côté, J., Warr, C., Jackson, A., Wraith, L. and Kavanagh, J. (2013) Great British Medallists: A Comparison of the Biographies of GB Super-Elite and Elite Athletes. *End of project confidential report submitted to UK Sport (349 pages)*. [Submitted to REF 2014, UoA 26](#).

3.2 Rees T., **Hardy, L.**, Güllich, A., Abernethy, B., Côté J., **Woodman, T.**, Montgomery, H., Laing, S. and Warr, C. (2016). The Great British Medallists project: A review of current knowledge into the development of the world's best sporting talent. *Sports Medicine*, **46**(8), 1041–1058. [DOI](#) (Peer-reviewed journal article).

3.3 **Hardy, L.**, **Barlow, M.**, Evans, L., Rees, T., **Woodman, T.** and Warr, C. (2017) Great British Medallists: Psychosocial biographies of Super-Elite and Elite athletes from Olympic Sports. *Progress in Brain Research*, **232**, 1–119. [DOI](#) (Invited target article).

3.4 Güllich, A., **Hardy, L.**, Kuncheva, L., **Woodman, T.**, Laing, S., **Barlow, M.**, Evans, L., Rees, T., Abernethy, B., Côté, J., Warr, C. and Wraith, L. (2019) Developmental biographies of Olympic super-elite and elite athletes – a multi-disciplinary pattern recognition analysis. *Journal of Expertise*, **2**(1), 23–46. [Link](#) Submitted to REF 2021 (REF identifier UoA24_14).

Grants

3.a **Hardy, L.** (2010 – 2013) *Understanding the Developmental Journeys of GB's Highest Achieving Athletes*. UK Sport, C000387, GBP308,231 (Bangor University: R08224).

4. Details of the impact***Changes to the Talent Development Dissemination and Implementation Strategy***

The appropriate dissemination and implementation of these sometimes sensitive research findings required serious ethical consideration. UK Sport, with Lew Hardy and Matt Barlow, ran a series of 10 workshops across the UK for Heads of Sport, Performance Directors, programme coaches, and pathway managers from the entire World Class Programme (42 sports [5.1]), to disseminate the findings. The reports from these workshops subsequently informed an Advisory Panel of high-performance sport experts who developed a wider implementation and dissemination strategy for UK Sport. In line with this strategy, the findings were presented, discussed, and revisited at three consecutive UK Sport World Class Performance Conferences (November 2013, 2014, and 2015), 10 pilot projects were run with individual National Governing Bodies and other special interest groups, and a series of 8 multi-media articles were developed for UK Sport's confidential talent development website, '*Talent Matters*'. It would be crass to suggest that this project was the source of Team GB's unprecedented Rio Olympics success, but it is one of the reasons why the rest of the world generally regards UK Sport as the world leader for talent development in sport [5.1, 5.2]. In the words of the former Director of Performance at UK Sport, "*the project contributed to UK Sport's global reputation as the world leader in Olympic / Paralympic sport and talent development*" [5.1].

Changed Talent Development Procedures

The former Director of Performance at UK Sport states that the "*GBM (Great British Medallists) findings have made a very significant contribution to the systemic development of the 42 elite Olympic and Paralympic performance / talent pathways that UK Sport, and also the 4 Home Nation Sports Councils support*" [5.1]. Specifically, "*the findings were a major contributing factor to the enhancement of UK Sport's Pathway Health Check (annual quality management and continuous improvement process for the 42 funded sports' pathways) and, sport / talent analytics and intelligence processes*" [5.1]. As such, **all** athletes involved in UK Sport's talent development programmes have benefitted from the findings and subsequent changes implemented by governing bodies.

The dissemination and implementation process also highlighted the importance of athlete mental health and well-being, and led to the appointment of *Changing Minds* (a company of clinical forensic psychologists specialising in working with young offenders) to help National Governing Bodies develop better ways of psychologically profiling, case conferencing, and developing the talent and mental well-being of their athletes. This work commenced at the start of 2014 and is funded to continue through the next Olympic Games.

Increased Investment In Sports Intelligence

The dissemination and implementation of the GBM findings also led most National Governing Bodies to change their data capture and profiling procedures to routinely and prospectively capture the most important demographic, practice, training, competition, and psychosocial data relating to their pathway athletes. These changes have had far-reaching consequences in terms of National Governing Bodies' ability to intelligently interrogate their talent-related data, case conference their pathway athletes, and design more appropriate talent development programmes. Indeed, as part of their ten-year strategic plan between 2016 and 2026, UK Sport has trebled the size of its Sports Intelligence Department to help achieve this aim. This includes the investment, with the Economic and Social Research Council, of GBP235,000 to fund 3 Bangor University PhD research practitioners to conduct the four-year '*Pathway to Podium*' study of the UK Sport Performance Pathway (between 2017 and 2021). In the words of the current Head of Performance Pathways: "*the findings have formed a key foundation from which the EIS and UK Sport have sought to orientate interventions and work with sports to evolve approaches to athlete development. In particular, to explore further questions emerging from GBM, we initiated the ambitious 'Pathway*

to Podium' research project with Bangor University, to seek to understand development as it happens" [5.2].

Systemic Changes in Practice

The former Director of Performance at UK Sport summarised the systemic changes in practice that occurred due to the project: "*Sports' leaders, coaches and scientists have learned to evolve daily training and coaching practice and annual competition planning to optimise talent development as a direct result of the GBM research findings. In addition, coach development programmes, psychological, personal development and wellbeing support for athletes in preparation for, and during major transitions (e.g., from junior to senior sport, retirement, etc.) have also evolved and improved as a consequence of the research findings*" [5.1].

Wider Impact on the High-Performance Community and Further Recognition

The GBM project also led to further significant and wider impact as attested by the former Director of Performance at UK Sport, "*Professional sport in Britain has also recognised the significance of the GBM research findings with sports such as Cricket, Football and Rugby seeking to conduct similar studies with past and present elite players in their teams*" [5.1]. Indeed, sport-specific versions of this research and implementation work have been completed by 4 Bangor University PhD and postdoctoral research practitioners for England and Wales Cricket Board (awarded in 2013, 2014, 2019; total funding GBP236,993), Rugby Football Union (awarded in 2015; GBP106,235), and British Triathlon (awarded in 2016; GBP30,000).

As further recognition of the impact realised from the research, the project was one of five shortlisted for the Times Higher Education Supplement's Research Project of the Year Award in 2016 [5.3], and it has been the subject of literature with significant worldwide reach [5.4 – 5.6].

In summary, the GBM project "*made a significant impact upon leaders', coaches' and sports scientists' understanding of what talent is, and how it develops*" [5.1]. Moving forward, "*GBM's finding will serve a valuable compass as we navigate what may be challenging waters ahead*" [5.2].

5. Sources to corroborate the impact

5.1 Testimonial from the former Director of Performance at UK Sport (2013 – 2016) (Participant and reporter on the impact). Corroborates the long-term impact of GBM research to UK Sport and wider professional sport.

5.2 Testimonial from Head of Performance Pathways, UK Sport & English Institute of Sport (2017 – present) (Reporter on the impact). Corroborates the impact of GBM research to UK Sport and the English Institute of Sport.

5.3 Times Higher Education Supplement's Research Project of the Year Award (2016). Corroborates the reach and significance of the impact from the research. The project was one of five shortlisted for the award where research impact was a key category in the assessment.

<https://www.timeshighereducation.com/news/times-higher-education-awards-2016-shortlist-announced>

5.4 Infographic by Yann Le Meur, a world-renowned French sports scientist who has 83,700 followers on Twitter and 85,020 subscribers to his website (8 January 2021). Corroborates the significant global reach of the research findings.

<https://ylmsportscience.com/2016/02/05/the-great-british-medalists-project-the-development-of-the-worlds-best-sporting-talent-by-ylmsportscience/>

5.5 Slot, O., Timson S. and Warr. C. (2017) The Talent Lab: The secret of finding, creating, and sustaining success, London, Penguin, pp. 1–304. Corroborates the significant global reach of the research findings. A chapter of the book was devoted to the project findings. Authored by The Times leading sport reporter Owen Slot with Simon Timson and Chelsea Warr from UK Sport, the book was serialised in April 2017 in The Times (circulation 446,204). Further, sales of the book to date are approximately 1,000,000. (Copy available on request).

5.6 Nuwer, R. (2016) The right stuff. Scientific American Mind, July - August pp. 39–44. The findings of 3.1 were featured in this article which corroborates the significant global reach of the

research. The *Scientific American Mind* is translated into 6 languages and has a readership of 546,000.

<https://www.scientificamerican.com/article/the-making-of-an-olympian>