This is the published version:


**Available from Deakin Research Online:**

[http://hdl.handle.net/10536/DRO/DU:30045197](http://hdl.handle.net/10536/DRO/DU:30045197)

Reproduced with the kind permissions of the copyright owner.

**Copyright:** 2009, Society of Tennis Medicine and Science
Introduction
Unravelling the profile of elite and successful athletes has been of special interest to sport psychologists for many years. Notwithstanding the progress to date, researchers continue to seek a fuller understanding of the characteristics that distinguish these athletes from others facilitating sport excellence.

In a recent review of the literature, Krane and Williams\(^2\) identified a set of characteristics associated with elite athletes to include: highly confident, total commitment, cope well with stress and distractions, controlled emotions, strong performance focus and well developed competitive goals and plans. These characteristics virtually parallel those proposed by Jones, Hanton and Connaughton\(^3\) as the attributes of the ideal mentally tough performer in their study of ten international standard athletes. Consistent findings of a critical set of psychological characteristics associated with elite and successful athletes have also been found in studies with ten US Olympic champions\(^4\) and ten Canadian Olympic and World champions.\(^5\)

Such research findings raise the question, are tennis champions similar in possessing a set of characteristics that embrace commitment, dedication, mental toughness and ability to pursue a dream? In her pioneering tennis talent development research with eighteen top ranked US players, Monaas\(^6\) investigated the qualities players considered important to be a champion. Critical identified qualities were determination and willingness to work hard and extreme competitiveness (players hated to lose and this increased the players’ motivation to put them in long hours on the practice court). In further findings, players described the challenges they faced in pursuing their dreams to include those of long and hard hours of practice, the loneliness of life on the road and the difficulty of maintaining friendships.

Given it is now over thirty years since Monaas’s\(^6\) research, the purpose of this study was to re-examine the attributes of, and challenges facing, champions with a gender-specific study of Australian female professional tennis players. Specifically, this study sought an understanding of players’ perceptions of: (a) what makes a female tennis champion; (b) what major challenges have they faced in pursuing their tennis career and strategies adopted to address these challenges. To analyse the data, a series of three inductive content analyses were conducted. The results highlighted the importance of psychological attributes and skills in a player’s journey to become a champion. The study’s implications for coaches and sport psychologists are also highlighted.

Key words: psychological attributes, psychological skills, tennis champion

As part of a larger study on talent development in tennis\(^1\), ten Australian top ranked Australian female professional tennis players responded to a questionnaire about the attributes of a champion recalling the major challenges faced in pursuing a tennis career and strategies adopted to address these challenges. To analyse the data, a series of three inductive content analyses were conducted. The results highlighted the importance of psychological attributes and skills in a player’s journey to become a champion. The study’s implications for coaches and sport psychologists are also highlighted.
Materials
Participants completed a self-report instrument (questionnaire) that was developed for the purposes of the study. Given the exploratory nature of the study, the instrument consisted primarily of qualitative measures (n=3) asking participants to describe what makes a champion female tennis player, the major challenges they had faced in pursuing their tennis career and how they had managed these challenges.

Procedure
Following ethical approval from the University Human Research Ethics Committee, a questionnaire and information sheet were emailed, and a hard copy mailed, to Australia’s top ranked SonyEricsson singles players (n=10) to addresses provided by Tennis Australia. Participants were advised that participation in the study was voluntary, no identification of individuals was required and confidentiality of responses was paramount. The value of the study to the tennis community and an estimation of the time required to complete the questionnaire were described. If a player was unable or unwilling to participate in the study, the next top ranked Australia player was contacted. The researchers subsequently met with several participants at Melbourne Park Tennis Centre to respond to queries and get additional details when required, on participants’ responses.

Data Analysis
To analyse the qualitative data, a series of three inductive content analyses of participants’ descriptions were conducted. In a popular procedure modelled on Patton’s recommendations for such analyses, key words, statements or phrases (referred to as raw data themes) were identified in participants’ descriptions. Raw data themes sharing explicitly similar meanings were subsequently grouped into higher order (general) dimensions. All steps in the inductive content analyses were scrutinised by a member of the Australian College of Sport Psychologists who was knowledgeable in qualitative research methods. Any discrepancies between the external checker and the researchers in the identification and organisation of raw data themes, and subsequent grouping of higher order themes, were discussed. Discrepancies were consensually validated by the three analysts and the findings of the content analyses tabled.

Results
Attributes of Champion Female Tennis Players
Participants’ responses to what makes a female tennis champion are presented in Table 1.

Table 1. Attributes of Female Tennis Champions

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Psychological Characteristics | • Good sportsmanship  
| 1. Mental toughness | • Mentally strong (2)  
| 2. Mental toughness | • Mental toughness  
| 3. Consistency week in week out | • Consistency week in week out  
| 4. Competitive edge | • Competitive edge  
| 5. Enjoy the challenge | • Enjoy the challenge  
| 6. Resilient | • Resilient  
| 7. They find a way | • They find a way  
| 8. 1.2 Commitment | • 1.2 Commitment  
| 9. Determination (2) | • Determination (2)  
| 10. Dedication | • Dedication  
| 11. Discipline | • Discipline  
| 12. Commitment | • Commitment  
| 13. Hard work | • Hard work  
| 14. Good work ethic | • Good work ethic  
| 15. Willing to work hard on hardest day | • Willing to work hard on hardest day  
| 16. Makes most of every situation | • Makes most of every situation  
| 1.3 Motivation | • 1.3 Motivation  
| 17. Desire (2) | • Desire (2)  
| 18. Passion | • Passion  
| 19. Want it badly enough | • Want it badly enough  
| 20. 1.4 Self-belief and Confidence | • 1.4 Self-belief and Confidence  
| 21. Confidence (2) | • Confidence (2)  
| 22. Self-belief (4) | • Self-belief (4)  
| 23. 1.5 General | • 1.5 General  
| 24. Aggression | • Aggression  

| Physical Abilities | Fitness  
| 25. Physically strong | • Physically strong  
| 26. Fit | • Fit  
| 27. Athletic (2) | • Athletic (2)  
| 28. Strong | • Strong  
| 29. No injuries | • No injuries  
| Technical Abilities | • Ball striking abilities  
| 30. Solid game base | • Solid game base  
| Support | • Family support  
| 31. Financial support | • Financial support  
| Overall Talent | • Combination of psychological, physical and technical attributes  
| 32. Talent all-round on court | • Talent all-round on court  
| Knowledge | • Knows about historical and other aspects of game  
| 33. Miscellaneous | • Intellectually simple  
| 34. Simple minded | • Simple minded  

Notes:
1. The 3 levels of listing represent the 3 stages of the inductive content analysis, i.e.,
2. Numbers in parenthesis reflect number of participants citing raw data theme (when >1).

Major Challenges
Participants’ responses to the major challenges they had faced in pursuing their tennis career are presented in Table 2.

Table 2. Major Challenges in Pursuing Tennis Career

<table>
<thead>
<tr>
<th>Major Challenges</th>
<th>Examples</th>
</tr>
</thead>
</table>
| 1. Psychological Characteristics | • Good sportsmanship  
| 2. Mental toughness | • Mentally strong (2)  
| 3. Mental toughness | • Mental toughness  
| 4. Consistency week in week out | • Consistency week in week out  
| 5. Competitive edge | • Competitive edge  
| 6. Enjoy the challenge | • Enjoy the challenge  
| 7. Resilient | • Resilient  
| 8. They find a way | • They find a way  
| 9. 1.2 Commitment | • 1.2 Commitment  
| 10. Determination (2) | • Determination (2)  
| 11. Dedication | • Dedication  
| 12. Discipline | • Discipline  
| 13. Commitment | • Commitment  
| 14. Hard work | • Hard work  
| 15. Good work ethic | • Good work ethic  
| 16. Willing to work hard on hardest day | • Willing to work hard on hardest day  
| 17. Makes most of every situation | • Makes most of every situation  
| 1.3 Motivation | • 1.3 Motivation  
| 18. Desire (2) | • Desire (2)  
| 19. Passion | • Passion  
| 20. Want it badly enough | • Want it badly enough  
| 21. 1.4 Self-belief and Confidence | • 1.4 Self-belief and Confidence  
| 22. Confidence (2) | • Confidence (2)  
| 23. Self-belief (4) | • Self-belief (4)  
| 24. 1.5 General | • 1.5 General  
| 25. Aggression | • Aggression  

| Physical Abilities | Fitness  
| 26. Physically strong | • Physically strong  
| 27. Fit | • Fit  
| 28. Athletic (2) | • Athletic (2)  
| 29. Strong | • Strong  
| 30. No injuries | • No injuries  
| Technical Abilities | • Ball striking abilities  
| 31. Solid game base | • Solid game base  
| Support | • Family support  
| 32. Financial support | • Financial support  
| Overall Talent | • Combination of psychological, physical and technical attributes  
| 33. Talent all-round on court | • Talent all-round on court  
| Knowledge | • Knows about historical and other aspects of game  
| 34. Miscellaneous | • Intellectually simple  
| 35. Simple minded | • Simple minded  

Managing Challenges
Participants’ responses of strategies adopted to manage challenges are listed in Table 3.

Discussion
This study found strong evidence to support the critical importance of psychological characteristics and skills for elite Australian female professional tennis players. Without
any prompting, players nominated psychological factors as the most important attributes of champion female tennis players and psychological skills as the important strategies to address challenges (most of which are psychological) faced in pursuing a tennis career. These findings will now be examined in further detail.

The study’s findings of the importance of psychological characteristics – mental toughness, commitment, motivation, self-belief and confidence - are not surprising. Actually, these findings are consistent with profiles of other highly successful athletes across a range of sports.

What is somewhat surprising is the relative importance attributed to these characteristics in relation to physical, technical and other skills. This has implications for today’s tennis coach who no longer can simply be a source of tennis knowledge and technique but rather needs to be mindful of the opportunity, and responsibility, to instil certain values such as hard work, discipline, fun, passion, tenacity and perseverance.

In terms of challenges faced by players in pursuing a tennis career, some of these have not changed since Monaas’s study. Life on the circuit is not all glamour and adulation but rather can often be a lonely one with extended periods away from family and friends. Extending Monaas’s findings, this study identifies other difficulties faced by some players to include maintaining a player’s commitment, confidence and positive self-image and dealing with setbacks. To address such psychological challenges, players reported a range of psychological skills or strategies they adopt that include seeking information on psychological issues, receiving sport psychology counselling, adopting a fresh perspective and undertaking self-reflection.

As such, this study’s findings emphasise the critical role of the ‘thinking side’ in tennis. It is not only of significant importance what a player thinks while on the court, but also what players think off the court. As such, a strong ‘psyche’ is of considerable advantage to players. While some psychological characteristics and skills are thought to be caught (socialised), some of them can also be taught (coached). To this end, both tennis coaches and sport psychologists have roles to play. Interested readers may wish to refer to Young’s guidelines for coaches as a starting point for strategies that can be adopted in working with players to improve their mental toughness.

In summary, this study adds to the body of knowledge of what it takes to be a champion female tennis player in its identification of psychological attributes and skills required to meet the inevitable challenges to achieve excellence. A strength of the study was the participation of an information-rich group of elite players. However, like all investigations, this study has limitations given only ten players from one country were investigated adopting a retrospective approach (subj ecting results to possible attribution effects and memory bias). In term of future
research directions, researchers may wish to explore what it takes to be a champion male player, thereby providing a basis for comparison across male and female professional tennis players.

Acknowledgements
This research was supported by a Victoria University TAFE Research Grant.

References

Dr Janet A Young, B.Com., BA (Hons), PhD, MAPS
Dr Janet A Young is a lecturer in the School of Sport and Exercise Science at Victoria University and also conducts a sports psychology practice based in Melbourne, Australia. Her research interests in tennis are mental toughness, flow and talent development. Tennis Australia and the International Hall of Fame recently honoured Dr Young for her contributions to Australian Tennis.

Dr Alan J Pearce, PhD.
Alan Pearce is an academic and sports scientist with a passion for racket sports. He gained his PhD in Neurophysiology at the University of Western Australia in 2000. Dr Pearce is a young investigator but has published in well recognised journals. He also has extensive coaching and physical preparation experience in working with elite racket sport athletes, particularly in tennis and badminton.