

**AN ASSESSMENT OF**

**MENTAL TOUGHNESS IN RUGBY UNION**

**BY**

**CARL HOGG,**

**GLOUCESTER (ENGLAND) ACADEMY**

*This article is an extract from Carl Hogg's M.Sc sport coaching dissertation.*

**Introduction**

At the elite level of all sports, including rugby union, it has been observed that the competitors' personalities and characteristics win the event; highly successful athletes appear to have the psychological edge and are often referred to as "mentally tough." Although mental toughness is one of the most frequently used terms in sports psychology, it is one of the least understood.

According to Loehr (1982), mentally tough athletes respond in varying ways which enable them to remain feeling relaxed, calm and energised because they have learned to develop two skills; firstly, the ability to increase their flow of positive energy (i.e. using energy positively) in crisis and adversity, and secondly, to think in specific ways so that they have the right attributes regarding problems, pressure, mistakes and competition. (Jones, Hanton, & Connaughton, 2002, p.205)

In an attempt to assess these perceptions, which highly successful athletes experienced, Loehr (1986) developed a questionnaire, the Psychological Performance Inventory, which he considered measured Mental Toughness. The questionnaire recognised the concept of psychological skills and devised seven subscales: (a) self-

confidence (i.e. belief regarding ability), (b) negative energy control (e.g. competition anxiety), (c) attention control (i.e. focused), (d) visualisation and imagery control (positive future picturing), (e) motivation (i.e. willingness), (f) positive energy (i.e. enjoyment) and (g) attitude control (positive thinking at all times). This appears in Appendix A.

Rugby Union as a sport has rigorous testing procedures for speed, strength and body composition, yet few, or no, findings have been published on the mental and psychological demands of the game. The widespread collection of data with regard to Mental Toughness would provide information worthy for comparison. Currently no data exists to compare and contrast players' psychological thoughts or processes. The seven subscales identified in Loehr's (1986) Psychological Performance Inventory could provide results to highlight any individual's specific psychological skill, which might require attention and development.

### **Background**

Sport psychologists have been fascinated by the role of athletes' personalities in sporting success (Weinberg, & Gould, 1995). Extensive research has been published on the relationship between personality and behaviour in sport (Vealey, 1989). In an attempt to fully understand personality, theorists have identified three distinct levels (Martens, 1975). Research concluded that the different layers are as follows: (a) psychological core, (b) typical responses and (c) role-related behaviours (highlighted in Appendix B). Researchers investigated personality via three different approaches - trait, situation and interactional (Weinberg, & Gould, 1995). Unfortunately the majority of research in the 1960s and 1970s only focussed on personality traits and did not take into account the specific situation.

As sport psychology developed as a discipline, focussing more on sporting success, most studies concluded that there was a positive relationship between personality and athletic performance (Cox, 1994). The notion that a particular mental state is associated with the ideal performance was developed by Loehr (1983) in his Athletic Excellence Training Model. Privette (1983) identified this ideal mental and physical phenomenon as peak performance. It was found that psychological techniques were the cause of more performers reaching, or at least approaching, that ideal performance state (Ravizza, 1984).

Most coaches and athletes acknowledge that anything between forty and ninety percent of sporting success is due to mental factors (Williams, & Krane, 2001). In fact, only mental readiness was seen as significant for Olympic success (Orlick & Partington, 1998).

Several studies have reported common perceptions by competitors such as loss of fear, total immersion in the activity, narrow focus of attention, effortless performance and being in control (Ravizza, 1997; Loehr, 1984; Garfield and Bennett, 1984).

In 1986 Loehr developed the Psychological Performance Inventory Questionnaire with its seven distinct psychological sub concepts. Golby & Sheard (2004) recently embarked on a unique study in the field of rugby league employing Loehr's Questionnaire to assess players' Mental Toughness. The study demonstrated that players competing in the international arena indicated some significant differences in mental toughness components compared to sub-elite players.

### Conclusion

Organised sports psychological skills training programs have been shown to be effective in enhancing performance (Cox, 1994). In fact, Rushall (1989) stated that sports psychology was the key to sporting excellence. Therefore, through the implementation of the Psychology Performance Inventory, which highlights the attributes and constructs most frequently employed by players, the information obtained would be specific to the unique psychological demands of rugby union. As well as the demands of the game in general, results may indicate unique psychological requirements for each specific position in rugby union. A greater understanding of the psychological needs and demands of players would offer coaches the opportunity to provide better support and advice to individual athletes. This ought, therefore, to enhance the players' overall development.

It should be noted that when assessing Mental Toughness using the Psychological Performance Inventory, two assumptions are made. Firstly, success by athletes is achieved by common qualities, not because of other characteristics (quantity of practice, physical suitability, social support, etc.). Second, those elite athletes perform psychological skills better than other sports participants (Murphy, & Tammen, 1998). It should also be highlighted that self-report psychological inventories have been criticised. Vane & Guarnaccia, (1989) suggested that test items are open to misinterpretation and that they were susceptible to social desirability response bias. Horgan, DeSoto & Solano (1977) questioned whether it was the thoughts of the participant or the researcher that were coming through in the responses produced by the inventories.

## Appendix A

### Psychological Performance Inventory (Pages 4.5 & 6).

	Almost Always	Often	Sometimes	Seldom	Almost Never
1. I see myself as more of a loser than a winner in competition.	1	2	3	4	5
2. I get angry and frustrated during competition.	1	2	3	4	5
3. I become distracted and lose my focus during competition.	1	2	3	4	5
4. Before competition, I picture myself performing perfectly.	5	4	3	2	1
5. I am highly motivated to play my best.	5	4	3	2	1
6. I can keep strong positive emotion flowing during competition.	5	4	3	2	1
7. I am a positive thinker during competition.	5	4	3	2	1
8. I believe in myself as a player.	5	4	3	2	1
9. I get nervous or afraid in competition.	1	2	3	4	5
10. It seems my mind starts racing 100 mph during critical moments of competition.	1	2	3	4	5
11. I mentally practice my physical skills.	5	4	3	2	1
12. The goals I've set for myself as a player keep me working hard.	5	4	3	2	1
13. I am able to enjoy competition even when I face lots of difficult problems.	5	4	3	2	1
14. My self-talk during competition is negative.	1	2	3	4	5
15. I lose my confidence very quickly.	1	2	3	4	5

CONTINUED OVERLEAF

	Almost Always	Often	Sometimes	Seldom	Almost Never
16. Mistakes get me feeling and thinking negatively.	1	2	3	4	5
17. I can clear interfering emotion quickly and regain my focus.	5	4	3	2	1
18. Thinking in pictures about my sport comes easy for me.	5	4	3	2	1
19. I don't have to be pushed to play or practice hard. I am my own best igniter.	5	4	3	2	1
20. I tend to get emotionally flat when things turns against me during play.	1	2	3	4	5
21. I give 100 percent effort during play, no matter what.	5	4	3	2	1
22. I can perform toward the upper range of my talent and skill.	5	4	3	2	1
23. My muscles become overly tight during competition.	1	2	3	4	5
24. I get spacey during competition.	1	2	3	4	5
25. I visualise working through tough situations prior to competition.	5	4	3	2	1
26. I'm willing to give whatever it takes to reach my full potential as a player.	5	4	3	2	1
27. I practice with high positive intensity.	5	4	3	2	1
28. I can change negative moods into positive ones by controlling my thinking.	5	4	3	2	1
29. I'm a mentally tough competitor.	5	4	3	2	1
30. Uncontrollable events like the wind, cheating opponents, and bad referees get me very upset.	1	2	3	4	5

CONTINUED OVERLEAF

	Almost Always	Often	Sometimes	Seldom	Almost Never
31. I find myself thinking of past mistakes or missed opportunities as I play.	1	2	3	4	5
32. I use images during play that help me perform better.	5	4	3	2	1
33. I get bored and burned out.	1	2	3	4	5
34. I get challenged and inspired in tough situations.	5	4	3	2	1
35. My coaches would say I have a good attitude.	5	4	3	2	1
36. I project the outward image of a confident fighter.	5	4	3	2	1
37. I can remain calm during competition when confused by problems.	5	4	3	2	1
38. My concentration is easily broken.	1	2	3	4	5
39. When I visualise myself playing, I can see and feel things vividly.	5	4	3	2	1
40. I wake up in the morning and am really excited about playing and practising.	5	4	3	2	1
41. Playing this sport gives me a genuine sense of joy and fulfilment.	5	4	3	2	1
42. I can turn crisis into opportunity.	5	4	3	2	1

As yet, no results have been finalised in rugby union among different grades of players. However, Jim Golby and Michael Sheard from the School of Social Sciences & Law at the University of Teesside looked at these aspects in rugby league. Their studies were on a hundred and fifteen rugby league players from the three playing standards in the professional game – International, Super League and Division 1.

The Psychological Performance Inventory (PPI; Loehr, 1986) was used to measure mental toughness. The forty two item scale yields an overall mental toughness score as well as seven six-item subscale scores in (a) self-confidence, (b) negative energy control, (c) attention control, (d) visualisation and imagery control, (e) motivation, (f) positive energy and (g) attitude control. Subscale scores ranged from a low of 6 to a desirable high of 30 and total scores from 42 to 210. Scores were recorded on a five-point Likert scale anchored by ‘almost always’ and ‘almost never.’

Permission was given for their survey by the organising committee of the 2000 Rugby League World Cup, Super League and Division 1 clubs. International players were sampled from the eight quarter-finalists in the World Cup. Then one Super League club and one Division 1 club were targeted where they had no players who had previously played for their country.

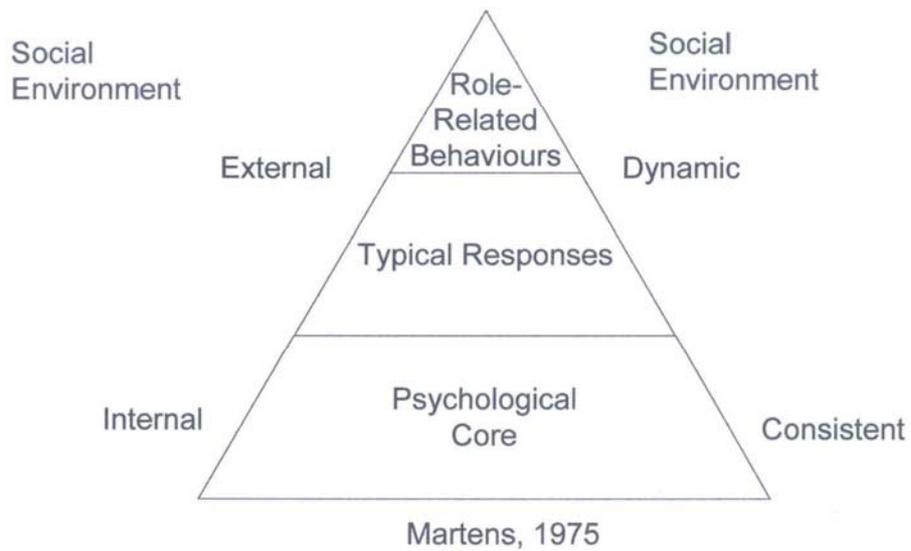
#### MEANS AND STANDARD DEVIATIONS OF PPI AND PPS III-R SUBSCALES.

	<u>Standard</u>						<u>Range</u>
	<u>International</u>		<u>Super League</u>		<u>Division 1</u>		
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
<b><i>PPI</i></b>							
Self confidence	26.26	3.05	25.82	2.82	25.35	2.48	17-30
Negative energy control	21.60	2.76	20.36	2.46	19.48	3.10	13-29
Attention control	23.81	3.49	22.86	3.26	21.39	4.92	11-30
Visualisation/imagery control	22.97	5.06	22.73	5.17	22.26	3.78	8-30
Motivation	25.73	3.28	24.73	3.07	24.48	3.96	13-30
Positive energy	25.44	2.91	24.91	3.35	24.26	2.75	18-30
Attitude control	25.36	2.90	25.27	3.04	23.87	3.89	15-30
<b>Total mental toughness</b>	<b>171.17</b>	<b>17.77</b>	<b>166.68</b>	<b>16.68</b>	<b>161.09</b>	<b>19.25</b>	<b>114-201</b>
<b><i>PVS III-R</i></b>							
Commitment	13.56	2.16	9.59	2.34	9.61	1.85	6-18
Control	13.87	2.17	12.64	1.68	11.35	2.19	8-18
Challenge	11.93	2.46	8.91	2.00	8.43	1.53	4-17
<b>Total hardiness</b>	<b>39.50</b>	<b>5.10</b>	<b>31.14</b>	<b>4.66</b>	<b>29.39</b>	<b>3.45</b>	<b>22-50</b>

## Appendix B

### Personality In Sport

#### *Personality in Sport*



## References

- Cox, R. H. (1994) Personality and the athlete. *Sport Psychology: Concepts and Applications* (3<sup>rd</sup> ed., pp.18-51). Dubuque, IA: Brown & Bench.
- Garfield, C. A., & Bennett, H. Z. (1984). *Peak performance: mental training techniques of the world's greatest athletes*. Boston, Houghton: Mifflin.
- Golby, J., & Sheard, M. (2004). Mental toughness and hardiness at different levels of rugby league. *Personality and Individual Differences*, **37**, (2004) 933-942.
- Horgan, R., DeSoto, C. B., & Solano, C. (1977). Traits, tests, and personality research. *American Psychologist*, **32**, 255-264.
- Jones, G., Hanton, S. & Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology*, **14**, 205-218.
- Loehr, J. E. (1982). *Athletic excellence: Mental toughness training for sports*. Denver, CO: Forum.
- Loehr, J. E. (1983). The ideal performance state. *Science Periodical on Research and Technology in Sport*. Ottawa: Coaching Association of Canada.
- Loehr, J. E. (1984). How to overcome stress and play at your peak all the time. *Tennis*, March, 66-76.
- Loehr, J. E. (1986). *Mental toughness training for sports: achieving athletic excellence*. Lexington, MA: Stephen Greene Press.
- Martens, R. (1975). The paradigmatic crisis in American sport personology. *Sportwissenschaft*, **5**, 9-24.
- Murphy, S., & Tammen, V. (1998). In the Search of Psychological Skills. In J.L. Duda (Ed.), *Advances in Sport and Exercise Psychology Measurement*. Morgantown, WV: Fitness Information Technology, Inc.
- Orlick, T., & Partington, J. (1998). Mental links to excellence. *The Sports Psychologist*, **2**, 105-130.

- Privette, G. (1983). Peak experiences, peak performance, and flow: a comparative analysis of positive human experiences. *Journal of Personality and Social Psychology*, **45**, 1361-1368.
- Ravizza, K. (1997) Peak experiences in sport. *Journal of Humanistic Psychology*, **17**, 35-40.
- Ravizza, K. (1984) Qualities of the peak experience in sport. In J. M. Silva, & R. Weinberg (Eds.), *Psychological Foundations of Sport*. Champaign, IL: Human Kinetics.
- Rushall, B. S. (1989). Sport psychology: The key to sporting excellence. *International Journal of Sport Psychology*, **20**, 165-190.
- Vane, J. R., & Guarnaccia, V. J., (1989). Personality theory and personality assessment measures: How helpful to the client? *Journal of Clinical Psychology*, **45**, 5-19.
- Vealey, R. (1989). Sport personality: A paradigmatic and methodological analysis. *Journal of Sport and Exercise Psychology*, **11**, 216-235.
- Weinberg, R. S., & Gould, D. (1995). *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics.
- Williams, J. M., & Krane, V. (2001). Psychological characteristics of peak performance. In J. M. Williams (Ed.), *Applied sport psychology: personal growth to peak performance* (4<sup>th</sup> ed., pp. 162-178). Mountain View, CA: Mayfield.