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# Paradigm Shift for Future Tennis

The Art of Tennis Physiology,  
Biomechanics and Psychology

 Springer

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# Preface

The book “Paradigm Shift for Future Tennis: The Art of Tennis Physiology, Biomechanics and Psychology” is a sequel to our previous book “Complex Sports Biodynamics with Practical Applications in Tennis”, Springer, Cognitive Systems Monographs, Vol. 2, 2009.

In a historic Wimbledon 2009 final, the celebrated Swiss player Roger Federer became the greatest men’s tennis player of all time, beating the popular American Andy Roddick in an epic five sets: 5-7, 7-6(8-6), 7-6(7-5), 3-6, 16-14. It was a battle of the two top serves in the game. Roddick won the first set. The second set went into a tiebreak; Roddick had 4 set points, yet he lost them all, and with them, the set. Federer proved successful in the next tiebreak, as well. However, Roddick came back very strong in the fourth set, broke Federer, and won it, six games to three. The American continued, starting the fifth set absolutely on fire, yet could not endure the four hour and sixteen minute marathon that followed. Federer won this battle of muscles and nerves to make tennis history.

This was Federer’s 15th Grand Slam title, the total list consisting of: Wimbledon 2003, Australian Open 2004, Wimbledon 2004, US Open 2004, Wimbledon 2005, US Open 2005, Australian Open 2006, Wimbledon 2006, US Open 2006, Australian Open 2007, Wimbledon 2007, US Open 2007, US Open 2008, French Open 2009, and Wimbledon 2009. It was also Federer’s sixth Wimbledon crown (2003, 2004, 2005, 2006, 2007, 2009).

Pete Sampras, holder of the previously unbeaten record of 14 Grand Slam titles and seven-time Wimbledon champion (1993, 1994, 1995, 1997, 1998, 1999, 2000), was watching the match from the Royal Box, along with fellow tennis legends; Sweden Bjorn Borg, a five-time Wimbledon champion (1976, 1977, 1978, 1979, 1980), and Australian Rod Laver, two-time Wimbledon champion of an Open Era (1968, 1969). In addition, the TV commentators were none other than American John McEnroe and German Boris Becker, both three-time Wimbledon champions (respectively, 1981, 1983, 1984 and 1985, 1986, 1989).

What's more, this was Federer's fourth Grand Slam finals victory over Andy Roddick. Previously, Roger beat Andy at the finals of Wimbledon 2004 (46, 75, 76(3), 64); Wimbledon 2005 (6-2, 7-6(2), 6-4); and US Open 2006 (62, 46, 75, 61). With his latest victory, the Swiss managed to extend his overall mastery over the American to 19-2, including 8-0 at Grand Slams. And all this against an ex-number-one player in the world. How can this astonishing resulting factor, 19-2, be possible? Is it due to Federer's forehand? His backhand? Or, perhaps his commonly underestimated serve? Could it simply be the entire *Federer package*? And if so, then what makes up this outstanding package? Notwithstanding the exceptional qualities of the ex-number-one, in this book we will reveal the secret weapon of Roger Federer. And much more: we will reveal *the blueprint of a future tennis champion*.

What is a *paradigm shift*? This beautiful term invented by Thomas Kuhn in 1962 in his book "The Structure of Scientific Revolution", implies on revolutionary changes in hard science theories. Today, popular and accepted in many areas *paradigm shift* depicts a dramatic change of view and perceptions. Is it time to radically change last hundred years of science development and come on track of unified field? Mechanics-oriented paradigm of today's science is coming to the "no through road" journey proving that we can't be treated as a computer. Human beings and human existence, as well as the whole creation have the matrix beyond the physical reality, closely connected with everything and everyone in the Universe.

A century ago, Nikola Tesla – the King of electricity – said: "When science begins the study of non-physical phenomena, it will make more progress in one decade than in all the previous centuries of its existence." Tesla is one example of scientist who had holistic and deep approach to our Universe and his achievements consequently dramatically improved the quality of our life.

This book starts with revelations that make obvious the limitations of today's tennis which does not use the Laws of Modern Biomechanics (see <http://adsabs.harvard.edu/doi/10.2478/s11534-009-0148-z>) and Neurophysiology. The second part of the book includes a new approach to the *quantum mind of a champion*. This paradigm shift started with the work of eminent physicists John A. Wheeler and David Bohm, and their ideas that we are active participants in the creation. Before them, Erwin Schrödinger, one of the fathers of quantum mechanics, mentioned the term "entanglement" as the very essential part of his wave mechanics. Today Guardian Science states: "Entanglements of two or more particles that have once interacted always remain bound in a very strange, hardly understandable way even when they are far apart and their connection being independent of distance." Very powerful quantum brain is the main characteristics of Roger Federer, as well as some other sport champions like Michael Schumacher.

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