

Book Review/Recension d'ouvrage

The Performance Cortex: How Neuroscience is Redefining Athletic Genius

by Zach Schonbrun

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Reviewed by/ Revu par

John Cuzzocrea

University of Windsor

To purists, the game of baseball has remained largely unchanged over its 170-year history. At its most basic level, the game is ultimately played between a batter standing at the plate, awaiting a pitch from a pitcher standing on a mound, exactly 60 feet, 6 inches away. Even as technology has evolved, baseball has largely resisted. Wooden bats have not made way for metal alternatives that would allow the ball to travel faster and further upon contact. Many outdoor stadiums still eschew the idea of astroturf over grass. Yet, even the game of baseball, in the interest of gaining a competitive edge, has relented when it has come to breakthroughs in sports science. Advanced analytics have taken the game by storm, as terms such as WAR (wins above replacement) have become commonplace in a sport that has traditionally measured success by simply noting wins and losses. The science of sport, or more specifically, breakthroughs in neuroscience, are opening the door on a new era in baseball and other sports. As teams scramble to find the next Babe Ruth, science may ultimately play a larger role in their search for prospects. The game itself has not changed; it remains a game within a game, pitcher versus batter. However, neuroscience is lending Major League Baseball a helping hand in being able to better identify prospects whose brains are specially equipped to recognize a pitch faster and

more quickly transfer signals to the body to swing. In a game involving 95 mile per hour fastballs that take 400 milliseconds to reach home plate, neuroscience has taken up the challenge of unlocking the mysteries of the brain to better understand the human potential that lies within.

Schonbrun is a seasoned sports writer with publications in the *New York Times*, *Washington Post*, and *ESPN* magazine to name a few. Schonbrun uses his experience as a sports writer to examine the advancements in the world of neuroscience, through the lens of sports. The movements, timing, reaction, and anticipation needed to excel in the realm of baseball, football, and other sports including motor racing are explored and discussed through what is known about our brain and how it functions. In doing so, Schonbrun delves into the most fundamental questions involving the human brain. At its foundation is the theory that the brain exists not for the purpose of allowing us to think; rather, the real reason for its existence is to produce movement. As evidence of this theory, the book points to other living organisms, such as trees, that do not voluntarily move and in turn do not have a brain. It is argued that even our senses, emotions, and memories are driven or suppressed by our future need to move. As such, the role that movement plays in allowing us to interact with the world around us is brought to the forefront and given its due.

The book begins by introducing a start-up company called deCervo, translated from the French to mean, “of the brain.” Using a video game platform, the company is able to measure, down to the millisecond, the moment that a batter decides to swing at a pitch. DeCervo is revisited throughout the book, as Schonburg reveals the trials and tribulations of the company founders, as they try to explain and hopefully sell their “new” science to Major League Baseball managers and scouts, who simply want to know if this approach will help them win more games. As the book continues, the author provides extensive and detailed evidence of research from both the past and the present in the area of neuroscience. Complex and abstract concepts are made simple by weaving in examples from the world of sports, past and present. Ultimately, Schonburg provides a convincing argument that elite athletes such as Stephen Curry, Tom Brady, and Michael Jordan should in fact be regarded as geniuses. Using neuroscience, the author is able to explain the complex and seemingly infinite number of processes that need to occur in order to make movement possible and how difficult and amazing it really is to be able to perform tasks such as hitting a baseball or throwing a touchdown pass.

Although this book is concerned with making a connection between the movements required in the world of sports and the latest research in the area of neuroscience, it ultimately has implications for the field of education and the ways in which we perceive intelligence. Gardner (1997) was the first to coin the term multiple intelligences, viewing the concept as an opportunity to develop each person's full potential. The theory provides for individual strengths in different areas and the idea that they are able to communicate what they know with greater effectiveness in accordance with their strengths. Those that exhibit greater bodily/kinesthetic intelligence, such as the elite athletes featured in this book, along with the student athletes who attend classes in schools, are not often credited for their academic acumen in the same way as those whose strengths lie in the area of logical/mathematical intelligence, as an example. This book sheds light on the concept that movement cannot be reduced to a basic function; rather, it needs to be viewed for the complex set of processes that it involves. Those who are able to move more effectively and perform tasks with a higher level of efficiency need to be recognized for their intelligence. In keeping with this concept, educators must aim to provide opportunities for students who exhibit bodily/kinesthetic intelligence in their classroom to communicate what they know in a manner that plays to their strengths. Differentiated instruction is an approach that may be incorporated in both formative and summative classroom assessment, providing learners with the ability to express themselves in different ways and capitalize upon their strengths. In the case of bodily/kinesthetic learners, when differentiated instruction is incorporated in the classroom, students are able to have a more hands-on role, touching and manipulating objects or moving about the classroom. Movement plays a pivotal role in how each of us interacts with our physical world. This book highlights the importance of movement and the beautiful minds that make it look effortless.

References

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