

EDGE OF CHAOS

MINDFUL ATHLETE TRAINING



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THE ASCENT

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We continue to strive for great content and hope you enjoy our November issue of Edge of Chaos! The *Edge of Chaos* is the transitional zone of bounded instability that engenders a constant dynamic interplay between order and disorder (Complexity Labs, 2016). Physicists have shown that adaptation to the *Edge of Chaos* occurs in almost all systems with feedback. If there is anything you would like to see featured or changed, please let us know at info@mindfulathletetraining.com. Enjoy this month's edition!

THE CHAOS CORNER: THE 2003 NLCS

BY CHRISTIAN FRANCO

Sports are often unpredictable, not just because of the players but rather the external variables and factors that lie outside of their control. In many cases, these external variables can even influence the game's outcome. When chaos strikes, it can be disorienting and frustrating for players on both teams; it is perhaps the most challenging factor to prepare for. One of the most significant examples of external chaos playing a significant role in Major League Baseball is the Steve Bartman incident of 2003.

October 14th, 2003, Game 6 of the National League Championship Series (NLCS), Chicago Cubs versus the Florida Marlins. The Cubs led the series 3 games to 2 and, having not won a World Series in almost 100 years, now found themselves one victory away from reaching the elusive series. The Cubs were leading 3-0 in the 8th inning with the



Marlins up to bat and one out. The victory was within reach...until it wasn't. Everything changed when Marlins batter Luis Castillo, after getting to a full count, hit a catchable foul ball towards Cubs' outfielder Moises Alou. However, a fan, Steve Bartman, interfered with the catch, and Alou could not make the play. Alou was visibly furious, especially after Castillo was walked on the next pitch. The whole team seemed rattled, and everything fell apart shortly after as the Cubs went on to give up eight runs in the inning. They would then go on to lose the game and ultimately the series after dropping Game 7 by a score of 9-6.

In that moment, momentum changed on a dime. Everything was going the Cub's way; they were 5 outs from reaching the World Series, until chaos reared its head. The Bartman Incident was a chaotic moment that the Marlins took advantage of. It is clear there was visible frustration on the Cubs team; the Marlins capitalized by starting to play small ball, got walks and eventually runs, and ultimately won the game. The Cubs were consumed by the external chaos, and one could argue they weren't able to recover even by the next game.



Negative thoughts of "what if" are common for athletes of all types. However, frustration that can cause a decrease in performance can become a factor if this kind of thinking gets the best of us. It is important to recognize some external factors are out of our control and instead focus on what we can control. We should always strive to focus on the process and embrace the chaos; otherwise, we may become crushed by it.

TALK LESS, DO MORE: DEVELOPING MENTAL TOUGHNESS

By Jim Wing

Many coaches and athletes would agree that mental toughness is a vital component of success on the field. But how exactly does an athlete become mentally tough? Traditional sports psychology utilizes approaches such as positive thinking, visualization, and goal setting. There is nothing wrong with these interventions, but can they truly make an athlete mentally tough?

Consider an NFL quarterback who is failing to go through his check-downs, holds on to the ball too long, and is often sacked as a result. Would visualization, positive thinking, and goal setting be the best way to give him the mental resilience needed to improve his performance? The ability to stay calm, focused, and engaged in the pocket while being rushed by defenders takes a high level of mental strength and toughness, and this is one of our points of emphasis at Mindful Athlete Training.



Rather than having the aforementioned quarterback visualize what being more mentally tough would look like, the use of biofeedback technology to train the nervous system may help to engage the system with visual and auditory feedback. Biofeedback has been around for decades and has been shown by science to help athletes visualize and

understand their physiological state, and through this understanding, manipulate involuntary events such as panic. At Mindful Athlete Training, we use these observable manipulations to build mental toughness by enhancing the ability to be calm, stay focused, and remain engaged in their sport. By safely exposing athletes to neurological stress in our Lab, we help them develop the physiological traits necessary for peak athletic performance. Just like you can strengthen your body in a traditional gym, we strengthen your mind in our lab!

THE LAB: NARROW VS BROAD FOCUS

By Jordana Ambros

Focus is a crucial part of any sport, but levels of focus can vary significantly from person to person. Ask yourself, how well can you focus? How well can you shift your focus? How long can you focus on a task? It is important to be mindful of two specific kinds of focus when performing: narrow and broad. We measure and train these conditions using electroencephalography (EEG) in our Lab.

Broad focus is the perceptual ability to take in a wide range of information simultaneously. This is important for optimal performance because as situations change rapidly, it is critical to “see the whole field” and make adjustments. An example of broad focus in action is when a soccer player dribbles down the field; they must utilize broad focus in seeing the whole



field to read the defense and make the best pass to ensure they will not cause a turnover. We train broad focus in our Lab by having participants engage in multiple tasks at once, for example balancing on a Bosu ball and having a catch, while hooked up to EEG and measuring levels of low beta brain waves. Their ability to take on multiple forms of information can be measured with their final “focus score,” and repeated practice can be reflected in an improving score and thus enhanced broad focus.

Conversely, we also have narrow focus. Narrow focus is when attention is directed to a more specified subject, only one or two things. This is important for performing because it is vital to control individual skills in critical moments,



such as where to plant your foot for a penalty kick or where to strike the ball in a golf swing. In the Lab, we train narrow focus by having our athletes focus on one variable, like a video clip or counting task, and observe the levels of focus they can maintain using EEG. In both cases, EEG is helpful because the feedback of having the acceptable levels of focus or not allows the athlete to become comfortable and familiar with the

feeling of being broadly or narrowly focused and can indicate any areas for improvement in either condition. This allows the athlete to more readily shift into the appropriate mindset in the future. By strengthening the fluidity between narrow and broad focus while performing an athlete can properly shift between the two, accounting for all necessary variables during the game, and enhance their duration of focus throughout the game.

MENTAL STRENGTH TRAINING FOR TODAY'S ATHLETES: RUSSELL WILSON

By Priscilla Wiggins

Over the last decade, recognition of the importance of mental fitness training has been catching on at all levels of sport. In professional sports leagues, we are seeing more and more teams hiring full-time sports psychologists to address the multifaceted needs of athletes, and we continue to draw inspiration from the direction the field is headed at high levels.



Seattle Seahawks quarterback Russell Wilson is a prime example of the positive effects mental fitness training can have on performance. Russell began working with his mental conditioning coach, Trevor Moawad, in 2012. Trevor tragically passed away from cancer last month, but the 9 years spent working

together had an immeasurable impact on Russell's life and performance on the football field. In interviews, Moawad consistently stated that he believed mental conditioning is all about training the mind the same way you would train the body and other elements of your game. At Mindful Athlete Training, we too like to say that the brain is like a 'core muscle' that can be trained and strengthened, and Russell Wilson's mental training was grounded in this very idea.

At Mindful Athlete Training, we believe in a holistic model that works on all facets of the mental side of performance. That all starts with meeting the athlete where they are with their own goals, strengths, and specific areas for development. In Russell Wilson's case, the goal was to control external language and monitor the associations made with particular things happening in



games. Instead of focusing on positively framing experiences or the negative impacts of mistakes, Russell worked with Moawad on adopting neutral language and self-talk. This allowed for the space to focus on the next play, the next decision, the next thing he could do to be successful, rather than being stuck in negative or positive associations of what just happened. In an interview with Men's Health in 2020, Russell differentiated staying neutral from keeping an even keel, citing that it goes deeper than that psychologically. For Wilson, staying neutral means accepting the positive and negative components of the game in real-time and using them as information to inform his next decision. Rather than forcing oneself to remain positive in a less than genuine way when adversity comes, staying neutral in making decisions has been the game-changer for him.

Mental fitness training is constantly developing, and similar to any psychological treatment or assistance it is very particular to the individual. There are no two methods that work the same for every athlete; finding the integration of individual focus and empirically supported methods is something we at Mindful Athlete Training take pride in with our athletes.

NON-TRADITIONAL TRAINING FOR NON-TRADITIONAL ATHLETES: RECOVERY IN ESPORTS

By Taylor Golkin

Recovery: The action of returning to balance

Why is it important: An inability to properly recover can lead to unhealthy and maladaptive routines, decreased performance and productivity, and increased stress.

Chances are, you or someone you know considers themselves a "gamer." In fact, up to 64% of the US population would consider themselves as such. At first, one may not see a gamer as much of an athlete, but that belief neglects the amount of skill that goes into high-level competition, and the following Esports has. Esports athletes can achieve up



to 400 movements per minute using a keyboard and mouse set up, and the global audience of esports consumers has grown to 495.5 million people in 2020. This demonstrates that being a high-level gamer is no small task, and the corresponding pressure is more than many realize. Throughout a game and especially in intense moments, adrenaline and cortisol production is triggered, leading to a “stress response,” engaging the fight or flight system and contributing to a decrease in concentration. Over time, this chronic exposure to stress can lead to sleep disturbances, vision problems, pain in the hands, neck, and back, metabolic disorders, weight gain, and behavioral problems such as addiction, violence, and aggression. Clearly, with all of these problems posing a serious risk in gaming, something is missing. Mental Fitness!

Mental fitness is at the core of healthy and rewarding esports gaming. In line with fostering a healthier way to play, Mindful Athlete Training is intentionally designed to help gamers visualize and develop a healthy recovery routine in our lab while still providing challenges. This includes learning breathing exercises, awareness of the mind and body before, during, and after playing, and relaxation strategies. Biofeedback technology in the Lab allows players to physically see changes in heart rate, for example, before and during a high-stakes game versus the calm down period followed directly after. Seeing your body’s responses in real-time allows for more control in the moment, and strategies on proper recovery can lead to a more relaxed and focused gamer from the start. As with any high performer, recovery is key!

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Thank you for reading! Next month we will continue to detail applications of our work, discuss more real-world examples, and much more. Stay tuned for more exciting content, and remember to embrace your chaos!



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