

How Mental Toughness and Hardiness Interact to Provide the Necessary “Will and Skill” in the Development of Elite Athletes.

Elite athletes are often thought to possess super human qualities both mentally and physically which allow them to develop their immense talent and achieve levels of proficiency that are exceptionally uncommon even within their field. While it has been shown that elite talent is typically developed over time as individuals focus specifically on their sport, often taking 10 years or 10,000 hours to fully develop an elite skill level, it is generally accepted that factors besides merely practice and physiological dominance allow these individuals to become outstanding (Spieler, 2007). When we take into account the 10,000 hour rule we must realize that the “average” athlete will not have the mental makeup or “mental resolve”/ “mental toughness” to sustain focus consistently enough, intensely enough and for the requisite 10,000 hours to successfully fulfill this requirement on the road to achieving elite status (Spieler, 2007). Therefore a difference in the mental “fortitude” between the classes of athlete must exist. Nicholls (reviewing previous work) wrote, “The elite athletes were more mentally tough than their non-elite counterparts...” (Nicholls,2009). Golby argues this point further stating, “...while the difference in levels of mental toughness and hardiness between these two sub-elite groups was minimal, there was an apparent gulf between them and the International players” (Golby, 2004). Regarding the mental makeup of athletes in general, Spieler also saw this difference citing the existence of, “significant differences (mentally) between elite and less-successful athletes” (Spieler, 2007).

With this in mind (10,000 hours to achieve elite development) we must accept that the mental makeup of the individual plays a large part in their willingness to put in the time and effort to meet the requisite physical skill development requirements. In part, the difference may be attributed to the construct of Mental Toughness. When describing MT (Mental Toughness), Middleton writes, “self-belief, an unshakeable focus, high levels of desire and determination (especially at times of distress), and overall consistency of effort and technique despite life and sport stresses” describes the mentally tough (Middleton, 2000). Clearly we see that this construct of Mental Toughness or MT is a valuable, facilitative aspect of the psyche of an elite athlete. Mental Toughness itself has characteristics such as, “an ability to overcome or rebound from failures.... an insensitivity or resilience...an ability to persist or a refusal to quit” (Jones, 2001). Terms like, “refusal to quit”, “perseverance”, “commitment to goals” i.e., terms which one would associate with a long term commitment to a singular purpose are referred to time and again in the literature regarding Mental Toughness. Jones, when describing the various aspects of Mental Toughness described this long term commitment when defining the belief aspect of MT he said it was, “to ensure the performer remains on course, regardless of obstacles or circumstances, in achieving his or her ultimate goal..... It is never ever giving up and knowing that if I just persevere I know that I am going to be able to do it....I believe I will be able to do it” (Jones, 2007). In fact MT is believed to be so important; “athletes and coaches felt that at least fifty percent of success is due to

psychological factors that reflect mental toughness”, Middleton continued, “coaches feel that mental toughness is important in achieving success” (Middleton, 2000). Gould echoed the importance of mental toughness in his research finding that 82% of coaches rated Mental Toughness as the most important psychological attribute which influences wrestling success (Jones, 2002). In light of the previous research it becomes easy to infer that this construct of Mental Toughness is paramount in developing elite athleticism by providing the athlete with the mental abilities to persevere through the 10,000 hours, and the inherent pitfalls and setbacks associated with such a commitment.

While the connection of Mental Toughness to athletic achievement has been established in great detail, the presence of the “hardiness factor” has not. Hardiness is defined as, “a personality style consisting of the interrelated orientations of commitment (vs. alienation), control (vs. powerlessness), and challenge (vs. threat).” (Kobasa, 1985). Hardiness consists of:

1. A sense of control over events
2. Commitment, dedication, or involvement in everyday life
3. Tendency to perceive life events as challenges and opportunities rather than as stressors (Kobasa, 1985).

While much of the previous research regarding hardiness lies in its association to stress buffering and illness, hardiness, at least on the surface, appears to share many of the characteristics that are associated with Mental Toughness. Similar to those who possess Mental Toughness the hardy handle stress well, albeit through a different mechanism. The hardy, “will transform stressful events into less stressful forms” (Kobasa, 1985). Conversely, Mental Toughness is associated with the ability to, “bounce back...as a function of purely internalized motives” (Jones, 2002). Mental toughness provides the ability to “get over” stressful events where it appears hardiness actually facilitates a changing of their interpretation.

Obviously Mental Toughness is intrinsic in nature, “relating to an internal locus of control and self-efficacy” (Jones, 2002), as is hardiness, “Social support and exercise appear to provide some protectionbut their effects are relatively small compared to the contribution of hardiness.... Because hardiness leads to transformation of events into less stressful forms” (Kobasa, 1985). Obviously, exercise and social support are external buffers where as hardiness is an internal phenomenon based off of self efficacy and an internal locus of control by which only the individual can “transform” stressful events to match their perception of that event. Recent research by Golby and Sheard also made this connection, “With its stress buffering and performance enhancing functions, the moderating effects of hardiness have become associated with those purported of mental toughness” (Golby, 2004).

In recognition of these commonalities the presence of the hardiness factor among elite athletes most likely certainly exists across disciplines. In regards to rugby Golby and Sheard wrote, “International (elite) players were characterized by the highest level of hardiness, as measured by commitment, control and challenge. This group scored significantly higher than Division One players relative to control and significantly higher than both sub-elite groups relative to commitment and challenge” (Golby, 2004). These results show that both hardiness and Mental Toughness are both possessed and most likely highly

related among elite level athletes. In fact, Golby went so far to state, “high levels of mental toughness and, in particular, hardiness appeared to distinguish elite-players” (Golby, 2004). With this in mind it would appear that hardiness, not Mental Toughness is the discriminating factor among the truly elite athletes and those who are simply “high level”.

The question, once we have established this link, hardiness and Mental Toughness, becomes how does hardiness affect sport development, allowing one to move from “high level” to elite”, where Mental Toughness does not? We’ve seen that Mental Toughness is valuable because it provides a singularity of focus and an unending belief in the end goal, however we know that hardiness plays a role physiologically that Mental Toughness is not purported to play given the protective qualities against physical illness hardiness is associated with (Kobasa, 1985). Where MT is a purely mental construct which allows one to deal with the physical difficulties associated with athletic development (time commitment, intensity of training, regularity of training, missing out on “normal” life events) and remain “on course”, hardiness may be the mental construct that interacts with the athlete on a physiological level, controlling the stress response, to facilitate this development. While the Mentally Tough can cope with the stress of competition the hardy actually change the stress associated with those events, “Hardy individuals tend to interpret demanding situations, such as competitive sporting contests, in *less stressful ways* because they view them as desirable, controllable, and challenging” (Golby, 2004). Obviously, changing the stress associated with an event will change the corresponding physiological response of the body. This will primarily occur through the CNS (central nervous system) regulating the sympathetic/ parasympathetic response. Ouellette found this to be true stating, “hardiness leads to decreasing the stressfulness of events, thereby decreasing their ability to produce sympathetic arousal (or organismic strain)” (Kobasa, 1985). Clearly, through this ability to interpret the stress or “transform” the stress associated with an athletic competition the hardy individual is affecting the physiology associated with the stress response whereas the Mentally Tough are merely coping with it. Stress plays an important role in training because if stress is accumulated in greater quantities than can be mitigated by the athlete overtraining is likely and performance will suffer.

“It is quite common that athletes and non-athletes exceed the limits of their physical and psychological capabilities causing the development of over-training syndrome...resulting from the imbalance between the demand of the exercise and the possibility of assimilation of the training, causing metabolic changes with consequences compromising not only the performance, but also other physiological and emotional aspects” (Provenza, 2005).

Overtraining can have serious effects on an athlete in regards to both long and short term development. Some of the physiological phenomena that are related to overtraining include a decrease in maximal strength, power and heart rate, decreases in creatine kinase and testosterone and increases in resting heart rate and cortisol levels, none of which are associated with increased performance (Provenza, 2005). Enoka echoes this point stating, “there seems to be little doubt that the concept of fatigue (the byproduct of stress) refers to a class of acute effects that can impair motor performance” (Enoka, 1992). Furthermore, not only will over-training affect the athletes physical skills but their motivation as well. Overtraining syndrome often will, “lead to a loss of motivation and even abandon the sport” (Provenza, 2005). The research on overtraining thus far has consistently shown that overtrained athletes will not

want, nor be physiologically able, to produce the effort or execution of skill at high intensities which is needed over the 10,000 hours of development to achieve and maintain elite status. Therefore, it becomes necessary that athletes attempting to achieve elite status not become overtrained in the course of their development, or at the very least attempt to avoid this state and recover from it if it as quickly as possible if it does occur, as valuable training time and competition/ practice effort would be wasted on less than optimal motor skill development.

Those who are susceptible to overtraining include:

1. Highly motivated athletes
2. Athletes presenting high outcome
3. Athletes coming back early to training before complete recovery (Provenza, 2005)

Clearly these descriptions can and most likely would be associated with athletes who are deemed Mentally Tough and we have seen that Mental Toughness appears to be indicative of most elite athletes. Yet it appears only logical that those who reach elite status via 10 years or 10,000 hours of directed, intense practice are not consistently entering into or prolonging a state of overtraining which would be detrimental to their development. Instead, the elite appear to be able to train “longer and harder” than the average competitor. Elite athletes are capable of achieving super compensation of their biological and neurological components of performance despite the fact that they are subjected to far greater mechanical, emotional and mental stressors over the course of their development than the average competitor (Zatsiorsky, 2006). Why then do they not become overtrained? It would appear that this is where hardiness provides its most valuable protection, physiologically, for the elite athlete. Because the hardy are able to transform and mitigate the stress associated with high level preparation and performance the athletes who are hardy (and mentally tough) are able to remain in an optimal state of training, never losing valuable time because of the decreased performance due to entering a state of overtraining. Hardiness may actually allow an elite athlete to train harder because the stress they accumulate, relative to an average competitor, may be far less. As Kobasa states, “Hardiness has an active emphasis in that it predisposes persons to interact more intensely with stressful events in order to transform them into less stressful forms” (Kobasa, 1985). Kobasa, in this statement parallels the hypothesis for hardiness actually changing the stressfulness of the athletic event be it training or competition, thereby changing how the event is interpreted by the body and the subsequent physiological response thereof. As Gold states (in regards to hardy athletes), “results confirm the fact that International players are more able to cope with highly stressful sporting contests and maintain high levels of competitive performance” (Golby, 2004). This finding confirms, at least inferentially, that something is occurring physiologically within the hardy athlete that is not occurring within their less hardy counterparts because as mechanical, emotional and mental stress increase we know that fatigue should set in compromising the CNS and motor unit activation, recruitment and firing patterns thereby decreasing “competitive performance”, yet in the hardy athlete this is not occurring (Zatsiorsky, 2006).

Hardiness it appears is the facilitator of Mental Toughness. Hardiness, by mitigating the stress response, allows the athlete to maintain a Mentally Tough attitude in training. It appears that both, in some quantity, must exist to achieve success in the highest levels of sport because Mental Toughness without

hardiness would most likely lead to a chronically overtrained and therefore under- developed athlete. Where Hardiness, in the absence of Mental Toughness, would lead to an unfocused athlete with many competing interests and distractions subverting any effort to amass the 10,000 (quality) hours necessary to achieve elite skill development. Therefore it becomes clear that in the development of athletic success not only are the requisite physiological characteristics necessary but they will not be fully developed and expressed if the athlete is not both Mentally Tough and Hardy.

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