Hard Work, Soft Work and the Nature of Expertise

By Guy Razy

What separates the elite from the rest of us? What makes someone an expert? Sport science has likely been interested in making elite performers since the beginning. With the advent of modern Kinesiology, scientific analysis of training has come about.

First, we need to define what an expert is. Experts are people who have invested 10 years or 10,000 hours in deliberate practice of a set of skills. Deliberate practice is a defined task with an appropriate difficulty level for the learner, after which, informative feedback is provided. Playing with this number, one realizes rather quickly that at 40 hours/week, it takes 4.8 years to become an expert. Since sparring is THE acid test in our world- we are faced with quite a dilemma- it is impossible for the average person to spar 40 hours/week. Even Olympic level wrestlers average a total weekly training time of 45 hours (Starkes 1996) not sparring alone. Assuming we can spar 4 hours/week- we are faced with 48 years until we are experts! This training curve is much longer than many of us anticipated when entering into the

world of the martial arts and combat sports. What can one do to shorten this curve and become elite? Well, modern sport science has some ideas on that.

Three main theories have been proposed; 1. Elite athletes have faster reaction times. 2. Elite athletes have more efficient decision making processes. 3. Elite athletes use advanced cues.

The first theory has been tested multiple times in laboratory and field experiments. In a literature review (Starkes and Deakin 1984), it has been concluded that the "hardware" of elite athletes is not significantly faster than that of non-elite athletes.

The second theory believes that elite athletes process data from the surrounding environment more quickly. A soccer study (Helsen and Pauwels 1993) confirms this. When shown an interactive video in which a soccer ball was "kicked" towards the athletes and they had to react to it, athletes performed more

quickly. From the time the ball was shown to the time they began to move, athletes moved 200ms more quickly than the non-elite. The amount of time it took to contact the ball was comparable, less than 30ms difference. However, by the end of the motion (totalling the perception, decision making process and kick), the average non-expert was 260ms behind the expert soccer players. Granted, this is not a huge amount of time- but in elite athletics, that is the difference between winning and losing. Apparently, the way data is perceived and interpreted is more efficient in the brains of elite athletes.

The third theory is the most interesting and lends itself to some degree, to explain the results of the second theory. In an interview with Russian goaltender Vladimir Tretiak, A. E. Ted Wall recorded the goaltender as saying “If I can see the player windup and shoot I know exactly where the puck will go on the net and I am sure I can make the save.” He claims to be using the cues in the wind up to predict where the puck will end up over the distance covered from the ice to the net- quite a claim. A later study (Bard and Fleury 1983) indicated that expert goal tenders look at the stick more often than the puck when preparing to receive a shot. Obviously, they have learned to read the cues hidden in the wind up to “predict” where the puck will end up. This cuts down on their reaction time even though the motion takes the same amount of time as it would for a non-expert.

So now, we are faced with some interesting data. If we can learn to analyze the data presented to us more quickly and capitalize on early cues- we are

moving ourselves up this curve to expertise. The next question is an obvious how?

As kinesiology has yet to answer this, I have a proposition that I think will help. When sparring (hard work), we have little, if any time to analyze our situation when facing an opponent of equal or greater skill. While facing an opponent of lesser skill, we do have time to analyze our reactions, the setups, breathing, level of arousal and other internal and external data. But we can not depend on always sparring against the less skilled. In fact, sparring against someone more skilled than you teaches many lessons quickly (as many of us know from experience). What then is the solution? Soft Work! If we incorporate Soft Work, or for an example many people are more familiar with, Tai Chi Push Hands- we are, in my opinion, moving along the curve. When moving at such a slow speed- we have time to analyze advanced cues, and to process the data in our environment. I am not, nor will I ever suggest, that Soft-Work can replace Hard Work. We acknowledge that if someone who has put 10

years into a “soft” style like Tai Chi entered the ring and fought someone with 6 months of BJJ and Muay Thai experience, 9 out of 10 times the 6 months of hard training will result in a victory over the 10 years of soft training. So, what am I talking about? I am talking about moving along the curve of expertise. If you continue your hard training, whatever it may be and incorporate some soft training- as active recovery or what have you, you are training yourself to notice cues in breathing, weight shifts, balance, posture, eye focus, etc. that under normal sparring circumstances are almost impossible to test and retest due to the physiological impact sparring has on our bodies. It would be great if we do hard work 15 hours a week and soft work 15 hours a week. However, given that most of us have jobs, families, mortgage payments, trips to the supermarket, etc. one can’t invest more than a few hours a week in sparring and still get about our day (albeit, a bit bruised). We might think of adding Soft-Work to our routines to give us the ability to react “more quickly” by perceiving the cues earlier than we would have other wise. If for example, you incorporate 6 hours of combat training every week with 2 hours of sparring, you could easily add 2 hours of Soft-Work and have no additional fatigue or trauma from it yet you would be increasing your practice time by 33%! People, this is a gift! Use it!

Guy Razy is a Kinesiology graduate from McGill University in Montreal. He can be reached for questions and training at Email unchainedfitess@hotmail.com