

Journal of Excellence

The Journal of Excellence
is devoted to nurturing
excellence in
all human endeavors
and all worthy pursuits.



Issue No. 1

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Mission of the Journal of Excellence

Terry Orlick - University of Ottawa

My mission in initiating the birth of The Journal of Excellence was to fill some important gaps in our literature and in our lives that are essential to the pursuit of excellence. The Journal of Excellence is devoted to nurturing excellence in all human endeavors and all worthy pursuits. It is centered on the pursuit of excellence in the working or performing parts of our lives, as well as the non-working parts of our lives. Our aim is to inspire excellence, to present a forum to discuss the positive pursuit of excellence and to provide practical strategies and perspectives for pursuing high level goals.

The Journal of Excellence is the communication vehicle for the International Society for Mental Training and Excellence (ISMTE), a not for profit organization with the vision of education and training for better people, better performers and a better world.

There is much discussion about the quest for, and value of excellence, for example in education, sport, health, the performing arts, parenting, teaching, coaching, leadership, health care, business and the workplace. There is also much talk about the importance of quality living, quality relationships and the development of a higher level of humanity. This is the first journal, which has **EXCELLENCE** as its sole focus. Providing people with the insights and strategies to be successful in their pursuit of performance excellence and excellence in living is the ultimate mission of the Journal of Excellence.

My vision is a journal that is applied in orientation, relevant in content and wide ranging in application. We are committed to:

- 1) learning from and sharing the experiences of great performers and great people
- 2) developing a more thorough understanding of the mental links to excellence
- 3) promoting excellence in performance and excellence in living
- 4) initiating positive real world change.

If you have applied research or meaningful insights that are relevant to the pursuit of excellence in any worthy human endeavor, for any age group, we encourage you to submit your material to the Journal of Excellence to be considered for publication.

Introduction to Issue No. 1

The studies, keynote addresses and reflections offered in issue # 1 of the Journal of Excellence point out that each performance domain poses unique challenges for the performer, and each performer has unique experiences within their personal performance domain. Yet there are common elements to the pursuit of excellence - links that connect those committed to being the best they can be, at whatever they do.

Marc Garneau, speaking about his experience as an astronaut, and Jing Guan Pirie, describing the challenges of a television host, bring up the very public faces these performers wear - a responsibility to an audience and the effect on the individual of being so well known. Both Pirie and Talbot-Honeck, in her study of classical musicians, mention the element of spontaneity that is essential in keeping performance a constantly evolving creation. Curt Tribble, a thoracic and cardiovascular surgeon and Garneau, both experienced at making life and death decisions in critical situations, discuss the importance of being able to deal with suboptimal outcomes. Professionals who spend large periods of time away from home, such as astronauts and national coaches (Zitzelsberger and Orlick), speak about the leaving process - the strategies they use to make it easier for all involved and the recognition that it is easier for them to be away than it is for those left at home. Hans Gertz, an opera teacher, and Garneau remind us that although our interest is in the mental, the mind interacts with the body and this should not be forgotten. Classical musicians along with other performers emphasize that the enjoyment they experience in their individual pursuits keeps them connected to their dreams and committed to their goals. Finally, in their presentation of the Mental Training Exercise for Quality Practice, Partington and Orlick provide performers, coaches and consultants with a useful tool for assessing the shared core skills: commitment, goals, imagery, focus distraction control and ongoing learning, all of which are necessary in the day-to-day striving towards greatness.

This first issue of the journal exemplifies the philosophy of the Journal of Excellence - to be international in orientation and scope, to be open to learning from people in different fields, and committed to the value of shared wisdom. We hope the articles offered here give you new insights into the pursuit of excellence, whether for yourself or in helping others to be the best they can be.

The Editor,
Louise Zitzelsberger, PhD.

Reflections

Learning to fly: Teaching mental strategies to future surgeons

Curt Tribble, M.D., USA and Doug Newburg, PhD, USA

Curt Tribble is a world leader in thoracic and cardiovascular surgery and surgical educator at the University of Virginia School of Medicine. Doug Newburg, whose formal training is in sport psychology, is the Educational Co-ordinator for the University of Virginia department of surgery. He works closely with Dr. Tribble.

Abstract

In the medical education community, Dr Curt Tribble has played a major role in highlighting the importance of the mind in dealing with the performance demands of surgery and in incorporating systematic mental training into surgical training. The goal of surgical training at the University of Virginia Health Sciences Center is to help residents “learn to fly” - to reach a point where they are independent actors who take responsibility for their decisions. As surgery involves both mind and body, mental training has been made an integral part of the training process. This article describes the mental aspect of a training program for surgeons from laying foundations to practicing surgery as a flow experience.

Teaching the mental side of surgery

The following article is based on a keynote address Dr Tribble made to the delegates of the 1995 World Congress on Mental Training and Excellence in Ottawa, Canada.

Surgical training in the United States has many elements of a model adult educational system. It is a system that takes virtual beginners, and allows them to achieve a level of mastery over a fairly short period of time. The system has been extraordinarily successful, and is emulated around the world. Still, despite the success of the system, some of the lessons are not explicit. Thus, our interest in the mental strategies of surgery began with a search for improvements in surgical education. We have turned to the adult education literature,

to the self-help literature, to the business management literature, to performance education literature, and to our own observations and trials. Our mission has been and continues to be to categorize and articulate the performance tools that master surgeons need to have in their armamentarium as they achieve the status of master surgeons.

We have sometimes called our informal course in this type of training ‘cross-training your hands’. The idea behind this term is that there are really two parts to learning surgery. One is learning the physical or technical side. The other is learning the mental strategies that are associated with the technical side. The training would not be complete without attention to the ‘minute particulars’ of operative technique. However, I will not dwell on the physical training that we give our residents, but rather on the

mental training. One of the ideas that we tried to begin with in this area is the idea that training in the mental side of surgery is like learning to fly. Beginners learn speed control, then speed, and eventually achieve freedom. The various portions of our approach to ‘cross-training your hands’ include foundations, preparation, leadership, awareness, focus, anxiety, decision-making, reflection, vision, and flow. When all of these mental strategies are mastered, the resident has become free to act as an independent surgeon, responsible for his or her own actions without the need for supervision by his or her teachers.

Foundations

Training begins with foundations, which includes having an idea and taking it to the level of a dream. One must know the “whys” as well as the “whats”. An example of an idea about someone going into surgery that comes from my own experience is that when I was about twelve or thirteen I was with my dad at a football game and we were STAT paged to the emergency room. When we got there a person had been stabbed in the heart and had a cardiac arrest. My dad opened the patient’s chest and pulled a clot from around the heart, which allowed the heart to start beating again. There was a knife wound in the heart, and he had me put on a glove to hold my finger over the hole while he prepared the operating room. I did not think that it was a particularly unusual experience until many years later. Still, it formed the basis for the idea that I might someday be able to save someone’s life that way.

A way to take an idea like that to the level of a dream is idealism. Most people seem to have their most idealistic

thoughts around high school and college. I suppose I was no exception to the general principle. When I was in college, I read a book by Albert Camus called *The Plague*. *The Plague* is about a doctor who is taking care of patients in a walled city in Africa when the bubonic plague breaks out. The doctor has a choice of whether to escape from the city or to stay with his patients. He chooses to stay with his patients. I was very struck by this book and the principles portrayed in the doctor by Camus. This book, probably as much as anything, influenced me to consider going to medical school. I realized at that time that I was determined to make some specific difference with my life. I realized that life is a limited time offer, and that I needed to make the most of it. I hoped to make difference by taking care of people, and by teaching others to do so. This evolution from an idea to a dream led me eventually to decide that I would be both a surgeon and a teacher, and that I would orient my practice around cardiovascular surgery.

Preparation

When we have looked into the issues of preparation, we have turned to the principles of adult learning. These principles take full advantage of the concepts of repetition, variety, association, and, most of all, pertinence. Most adults will not really memorize things they cannot use.

We have realized that we are in a period of changing educational methods or paradigms. The older education model was one that was prominent in the Middle Ages and has been in use until modern times. This approach is called the monastic tradition, because it was formulated and promulgated in the mon-

asteries of the Middle Ages. In this model, the student is passive and is being taught. The teacher is the teacher and is omniscient. In the newer model, one that we would like to call the model of performance education, the student is active and is learning rather than being taught.

There are two aspects of preparation: general and specific. General preparation for surgical training includes the kind of education and experience you get in both college and medical school. This general training includes background information, principles, and various other issues that form the fundamental foundation for the later areas of expertise to be gained. Specific preparation includes preparing to deal with certain types of cases as well as preparing for a particular patient's operation.

Sometimes one is unable to prepare specifically ahead of time for a particular activity or event, but rather must be prepared in case such an event occurs. When I was a junior house officer, one of my patients was losing his airway after an operation had been done to remove a tumour in his neck. When I got to the patient, it was obvious to me that the patient was in dire straits. I knew the situation was complicated by the fact that the patient had recently undergone radical pharyngeal surgery. I put in a call for the faculty anaesthesiologist who had intubated the patient the day before. I looked into the swollen tissues of this man's mouth and pharynx and knew that I had little chance of getting an airway through the narrowing area. The attending anaesthesiologist and his resident arrived and were similarly discouraged but set about getting together their instruments over the next few minutes to try to

intubate the man since it was obvious that he would not be able to breathe much longer through the very narrowed opening. I put in a call to my senior resident hoping that he could come and help us in case we needed to do something heroic. By the time the senior resident arrived, the anaesthesiologist was still unable to obtain access to the airway. The patient was turning blue, and we all knew his next breath might be his last. My senior resident walked in the room, picked up a large needle, inserted it into the man's airway, picked up a flexible guide wire of the type often used in vascular procedures, threaded it through the needle into the windpipe and pushed on it until it was visible in the back of the man's pharynx. I grabbed the end of the wire with a clamp, and the resident asked me to thread an endotracheal tube onto it while he and I both held each end taut. The tube threaded right along this guide wire into the airway and immediately the man could breathe again. His colour turned from deep purple back to a healthy, normal pink. This move had saved this man's life. I, even in retrospect, have little doubt this man would have been dead within a minute or two. The resident looked at his hands, looked at the patient, looked at me and did not say a word. The attending anaesthesiologist said, "Wow, have you ever done that before?" The resident with absolute honesty, and not even a hint of sarcasm, looked at him and said, "No, but I've thought about it a lot." Many times since then I have thought about that situation and the concept of "thinking about it a lot" - ahead of time. I made a pact with myself that I would have in my armamentarium the knowledge to do, as best I could, whatever needed to be done to save a person's life, even if I had not seen it or done it before. I knew at the

time that it was my responsibility to be prepared for those kinds of contingencies. I knew that I had to be active in this process and to not just wait until the opportunity to learn about such things presented itself. This type of specific preparation for contingency has subsequently saved a number of my patients' lives.

Another aspect of specific preparation is to prepare for each procedure that you know you **are** going to do. I believe that the surgeon should review the patient's history, exam, and the results of all studies, personally viewing all pertinent X-ray studies and other types of data. The resident should talk at length with the patient and the patient's family as well to make sure that they understand what is going to happen and also that they understand what is expected of them.

Surgery is a psychomotor skill as is the performance of a master piano player or an Olympic gymnast. Generally, to acquire some sort of psychomotor skill requires an introductory period, a period of deliberate practice, a further period of full time commitment, and when all of this has been accomplished, the performer may have the opportunity to achieve a level of elite or eminent performance. Anders Ericsson, studying this type of expert performance, looked at many elite performers, including various world champions and others who were considered to be eminent performers. As described in Ericsson, Krampe and Tesch-Römer (1993), it was found that almost invariably, expert performance required ten years to achieve, which is about the period of time that people invest in the initial portion of surgical training, starting from the time they

make their decision in medical school to become a surgeon, until they have achieved mastery of their particular aspect of surgery. Ericsson et al. also found that this investment usually consisted of about 10,000 hours of time. This is about the same amount of time invested by the surgical residents in their training.

Leadership

One of the most important summarizing principles of leadership is that the team leader must make sure that everyone in the room knows that everything matters. Nothing is neutral. Everything that happens in that room, every thought, every sound, every action will have an impact on the patient's outcome. Each thing will either help or hurt, but nothing will be neutral. The importance of this concept must be made clear to the team.

Leadership is very important in the world of surgery as it is in many other areas of performance. Every surgical patient will require care from a team and the surgeon must be skilled at leading such a team. The typical number of people in one of our heart surgery rooms during a cardiac operation ranges from 15 to 25. When we are harvesting two lungs and a heart for three separate recipients, we have over 100 participating in the process. Thus, a surgeon must learn to become a leader. The surgeon must also help create a team environment.

There is no doubt that everyone on the team counts. The surgeon must be aware of even subtle psychological differences that might be present in some of the team members and help each of these people contribute while avoiding letting these differences interfere with the

team's overall function. If any of these very important people do not do their job, the operation will not turn out well. The leader must also recognize that everyone must understand what is happening, especially on a complicated or unusual operation, and take the responsibility to teach other team members what they need to know to help effectively.

Another important aspect of leadership is to be a role model. The surgeon must set the standard for care, attention to detail, and the level of commitment to the patient that others must emulate.

One of the most important aspects of leadership for the surgeon is optimism. The surgeon must exude optimism. He or she must believe that the operation is accomplishable and must convey that feeling to all other team members. If everyone does not think this way, they will not do their best and all may be lost. I often use the example of an elite pro quarterback like John Elway in the two-minute drill at the end of a game with his team behind. Can you imagine that his line will block to the utmost of their ability and that his receivers will dive for barely catchable balls if they do not believe they can win? There is no way that a quarterback of his ilk would enter the huddle and say anything other than, "We can win this game". There is no reason for a surgeon to enter the operating room without conveying the same attitude.

Awareness and focus

A person performing in a tumultuous situation, as an operating room often is, must have a general awareness of what is going on around them. In basketball this is called court sense and

some of the best basketball players of all time were known for this ability. This was one of the greatest strengths of players like Larry Byrd and Magic Johnson.

In the world of martial arts, the fighters are taught to maintain a general awareness of everything going on around them. They are taught to keep a "glaze" in their eyes, which means that they do not necessarily focus on any one particular thing, such as an opponent's hand or foot. Rather they maintain a more general awareness not only of all movements of their opponent, but also movements of other potential opponents in an area. In the martial arts this general awareness is known as "mushin".

When we tell our surgical residents that they will need to focus on what they are doing, one must be aware of the fact that people are fairly much like computers, and that it is difficult to think of more than two things at a time. Thus, it is possible for someone who is doing something to focus on two things at once, but they are usually unable to focus on more than that. To be able to maintain a general awareness and simultaneously to be able to focus in on a specific task, one must be more like an air traffic controller with an array of radar screens with alarms which will draw greater attention to one screen or another if necessary.

There is a particular type of IV fluid that we do not like given to our patients because it thins the blood too much. It comes in an unusual cellophane wrapper. If you hear the sound of this cellophane crinkling above the ether screen, you know that the anaesthesiologist is preparing to give this "forbidden fluid", and

without even looking up, you can tell them that you do not want it given. This is an example of being trained to allow a specific sound to interrupt your stream of thought so that a particular problem can be dealt with. Other analogous situations in the operating room are the necessity of listening for abnormal flurries of activity in one part of the room or the other, such as in the area of the anaesthesiologists. Such activity may signal trouble that you would need to know about.

It is best if you are able to maintain several layers of unconscious thought about what is being done. One layer is a type of surgical “conscience” that follows along behind what you are doing, “double checking” what has been done. The picture I have in my mind is of people swimming along at different levels in the ocean, perhaps while scuba diving. The person who is higher off the ocean floor has a greater perspective and can see more things around them. Sometimes the primary surgeon will have to shift back and forth between these various levels in order to pay proper attention to all issues.

Another aspect of focus is distraction control. It is often true that there are many things that do not need one’s attention and must be blocked out of conscious thought. An example of this occurred to me when I first joined the faculty and a patient was being brought from the cardiac lab with his heart failing. A large, important artery had closed down, and the patient’s blood pressure was falling. As I was bringing the patient to the operating room and trying desperately to find a surgical resident to help me with the case, the attending cardiologist wished me well and mentioned to

me that the patient was the former mayor of Charlottesville. I knew then and there that my future in the city would probably be determined by editorial comments in the newspaper if the mayor did not do well.

I was already fairly distracted by this as well as by the emergent nature of the operation, when one of the other faculty members in our department came into the room and really hit into the surgical resident who had come to help me. This other faculty member did not realize that I was in the room and he thought that the resident had wilfully not taken care of some other chore he had been assigned to do. I was pretty annoyed by this intrusion into our already precarious situation, and told this colleague so. My colleague was apologetic, of course, once he realized that what the situation really was, but by then I was stirred up in about every way that a person could be, when what I really needed was to be calm. I knew then and there that if I did not get settled down, I would not be able to do a reasonable operation for this patient.

For some reason I had an epiphany at that moment, and realized that what I needed to do was to shut out all of the things that were going on around me and to focus on what I was doing. Somehow I imagined myself in a former life as a water safety instructor, teaching and swimming the breaststroke. When one swims using this stroke, the water line hits you on your forehead. Thus, your face and your ears are underwater and you can see nothing nor can you hear anything of what’s going on above the surface of the water. While your face is in the water, you have only the water around you and your environment is

peaceful. I imagined myself in that mode and shut out all that was around me. I did not realize it right at the time, but that picture has helped me enormously since then. One cannot maintain total focus at all times. The “neuro-circuits” just get too hot, and there must be a rhythm to one’s focus. There must be an ebb and flow of its intensity. The breaststroke became a good analogy for this rhythm, because as you stroke with your face in the water, all around you is quiet. And then you come up for air, transiently becoming aware of more of your surroundings, and then you regain your focus during the next stroke with your face in the water. I have found this to be a very useful way of working through the ebb and flow of the focus required to do operations and even specific steps of operations.

The hardy personality

To be a master surgeon, or an elite performer of any kind, one has to develop a resilient, hardy personality. One must face challenges positively and trust in one’s abilities and one’s preparation. We tell our residents that they need to be determined to do more than just survive. They must be ready to prevail over the circumstances that they find in their sometimes chaotic lives. One of these challenges is dealing with anxiety. We teach the residents that there is little physiological difference between anxiety and arousal. The paradox is that people spend a great portion of their lives trying to avoid anxiety and a great deal of the rest of their lives trying to seek out arousal. If one realizes that the physiological reaction of the body to both anxiety and arousal is similar, then one can approach situations that might seem anxiety provoking with a positive outlook instead of apprehension. One should

channel these feelings of arousal into an energetic state of being that will allow one to do one’s best.

We have enjoyed utilizing the line from one of Phil Collins’ songs in which he says, “*You’ve been waiting for this moment all of your life*”. We tell the residents that everything they have done up until this time has prepared them for what they are getting ready to do. They are able to reflect on that reality and often attain a state of calm that allows them to get on with their work. A discussion of this need for calm is seen in the famous baccalaureate address, *Aequinimitas*, by Sir William Osler. Osler discussed the need for physicians to maintain a state of equanimity and calm when dealing with stressful situations. Ernest Hemingway often wrote about the “grace under pressure” required of bull fighters as they watch a bull charging at them, stepping gracefully out of the way at the last minute, never seeming to be flustered. An important concept in dealing with anxiety and arousal is that you, the performer, get to choose how you are going to react. We suggest you choose arousal.

Decision-making

We teach that great surgery is often much more about decisions than incisions. It is true that a surgeon has to have good hands, but also good judgment. Precisely placed stitches are of no value to the patient if they are precisely placed in the wrong position. A perfectly executed operation is of no value to the patient if the wrong operation was done. A study was conducted of cardiac surgeons during a five to six hour cardiac operation to determine how often they made life-threatening decisions. It was determined that they made a life or death

decision approximately every five to ten seconds during the operation.

We teach the residents that great decision making is more about asking yourself the right questions than it is about knowing the right answers. We were all taught in medical school that about half of what we learn in the first two years will be out of date in five to six years. Another way of saying the same thing is that the answers will change, it's the questions that will remain stable. When our students come on our service, even after the first two years of medical school, they think they know almost nothing about clinical medicine, but I tell them that they do. If I ask questions of them in the right order and in the right degree of increasing difficulty, they will virtually always be able to work their way through the decisions to an appropriate answer. I do this to illustrate to them that once they know these questions, they will be able to ask themselves the questions and that they already know the answers.

Another aspect of decision making that is very important to realize is that optimal decision-making is not often accurately compressed into algorithms. An algorithm is a diagram in which each decision point usually has only two choices. Decision making in medicine very rarely involves choosing between two courses of action. There are almost always more than two choices and attempts to put medical decision making into "if this, then that" types of decision trees ultimately will not provide the best outcomes for our patients. I believe alternatively, decision making is more like a polynomial equation of the type that we learn about in advanced algebra.

The following is an example of a polynomial equation in which the letters are constants and the other factors are raised to different powers:

$$ax + bx^3 + cx^2 + dx + k = \text{decision.}$$

To me, this illustrates better the way decisions are made. Different factors have different levels of importance, and they also have different degrees of likelihood. All of these factors must be taken into account before a decision is made. Also, some of these varying levels of likelihood of importance and consequence will change depending on some patient related factors such as their religious or ethical beliefs as well as on hard and fast medical issues. Like other elite performers, a surgeon must learn to make decisions with incomplete information. One must take into account the need for more information and balance it against the urgency of the situation and be ready to move ahead even when all the information is not known.

I often say that surgeons are gamblers and must know the odds of almost everything that might happen in an equation. Even when one does not know the exact odds, it is sometimes useful to calculate a rough estimate of the odds of certain events occurring. Overall, perfection under these conditions is virtually unattainable, and in fact, one of our sayings is that "perfection is the enemy of good". If one waits until all information is available or perfection in decision making could be achieved, one may end up with a perfect decision, but a dead patient.

Reflection and analysis

One of the most important aspects of learning to be a master surgeon is to learn how to reflect upon what you have done, analyse your results and learn from everything that goes on around you. One of the first steps of dealing with something that has not gone the way you want is to realize that, in essence, there is a sense of loss, or even grief as outlined by Dr. Elizabeth Kübler-Ross. Denial, anger, bargaining, depression, acceptance, and hope are the stages that she observed terminally ill patients went through in dealing with their illnesses. These stages are also applicable to anyone dealing with any other type of loss or grief. People will often vacillate back and forth between these various stages, but eventually as they work through the psychology of their loss, they will come to a point of acceptance and look forward instead of backward. These are the same feelings that any performer will have when he or she deals with a suboptimal outcome.

The process of dealing with bad outcomes has been formalized more in surgery than in any other realm of medicine. Virtually every department of surgery in the United States has a weekly conference known as Death and Complications Conference or Morbidity and Mortality Conference. These conferences are formal reviews of complications, deaths, and any other suboptimal outcome that occurred. While this process is formalized, it is one in which our residents need guidance in order to participate optimally and to take the approach taught in these conferences back to their everyday lives.

Some of the things that we teach our residents are that the goal of the con-

ference is to search for the lessons and not the guilty. We ask them to outline what may have been done differently or better. We ask that they teach others some lesson from the case under discussion. We even encourage them to create a “wish list”. When using this approach, one can merely write down what they wish had been different. For instance, they might wish that a patient would have been younger or healthier or that the patient might have gotten to the emergency room sooner. This type of wishful thinking is helpful on occasion when it just seems that the bad outcome was inevitable.

The reason this approach is useful is because the goal of every discussion of this sort is to learn to be able to approach similar situations better in the future. There is also an emphasis on catharsis. Often, people will carry around the bad feelings of some untoward result for a long time without really dealing with them. With the emphasis on shared learning and support from the group, it is possible to unload some of the feelings one might have had and to go on better armed for the future. In a sense, given that nobody is perfect and that nature is at times flippant, bad outcomes are bound to occur and the surgeon or physician really only has two choices when these things happen. One is to forgive themselves and the others involved, learn all the lessons that he or she can and go forward. The other alternative is to get out of medicine altogether. Some do choose the latter, but if all physicians and surgeons did, we would not have any doctors!

As we have tried to further define this process of analysis and reflection, we found ourselves talking about the

concept of quality. Robert Pirsig (1991), in *Lila*, says that the “metaphysics of quality” could be called the “high country of the mind”. He says that he makes this analogy to the high country of mountain climbing because it takes a lot of effort to get there and more effort once you’ve arrived. But unless you can make the journey, Pirsig believes you are confined to one valley of thought all your life. Pirsig emphasizes that one must think about quality, not only in an abstract sense, but also in a practical sense. For us, the message of *Lila* is that one must strive to maintain a life of quality.

The business world has provided some insight into quality management in industry. One of the most well known writers in this field is W. Edwards Deming, who was very influential in the restoration of the Japanese economy after WWII with an emphasis on quality of industrial production. When one reads about Deming’s thoughts, the primary theme is “total quality management”. He emphasizes that one must base decisions about the production of quality on accurate, timely data.

Trying to apply Deming’s statistical methods to the quality of performance, however, has been difficult since performances do not lend themselves as well to statistical analysis as do the thicknesses of sheet metal or the number of bad computer chips coming from a production line. Thus, we have turned to look at some of the concepts of qualitative analysis. These concepts are discussed in the sport psychology and performance education literature, as well as in some of the other types of educational writings.

Dr. Steve Rosenzweig, writing in *Academic Medicine* in 1994, discussed this issue by pointing out that the division between science and non-science can be “false and dangerous” and that sometimes people “confuse theory with fact, resulting in dogma”. He makes the point that medicine and medical education may have tried to be too quantitative, forgetting that not all things can be easily quantified. In fact, some of these important lessons and ideas in the area of managing the quality of performance can only be passed along as stories. Though we have been required to learn the language of mathematics in order to be accurate in telling these stories, and in making our measurements and performing statistical analyses when appropriate, still not all descriptions of human interaction can be passed along by numbers.

This background has led us to propose a term that should be considered as a concept that is complementary to Deming’s “total quality management”. This term is “performance quality management”. We believe that this concept, in which one can analyse, reflect on, and manage the quality of one’s own performance, requires that one understand the difference between quantitative analysis and qualitative analysis. This concept revolves around a personal approach to quality management which requires that each person be independently responsible for his or her own output and performances. This requires constant feedback, but it also requires analysis at a later time.

The immediate review of one’s performance requires that one analyse it, learn from it, remember the lesson, forgive one’s self and others for whatever parts of it are sub-optimal, suppress the emotional side of the event, refocus on

what needs to be done next, and go on. There is an implication here of establishing a rhythm of doing, analyzing, and doing again. One of the best lessons in the need for this immediate review and a need for a rhythmical approach to performance was taught to me as I learned how to do coronary anastomoses. When doing a coronary anastomosis one has to stitch a graft to an open coronary artery beyond the blocked area. This is the primary event in doing coronary artery bypass surgery. Often, these coronary anastomoses will be ones in which a person's life will hang in the balance. Some of these lesions that need to be bypassed are so critical that we call them "widow makers" since if they are done wrong the patient will die. This situation certainly will raise the angst that one feels when doing this kind of work. As I was learning how to do this I would be in the mode of putting in stitch after stitch and feeling pretty good about the way things were going. My professor would then say that the stitch was too deep and that my stitch, if left alone, would be a "widow maker" stitch. One can certainly get rattled by that sort of an assertion. On the one hand, you would feel the need to argue, and on the other hand you would feel hurt that this criticism had been levelled at you. However, your only choice was to look at the stitch, see what it was that the faculty member thought was not right, do it over, see if you could make it better, and go on. However, if you were not learning from each of these stitches and each of these comments you would never improve and, of course, within the personal quality management concept one has the need to constantly improve and get better. So I learned to get into a rhythm where I would place the stitch, analyze it, listen to any comments that were

made, learn from it, remember it, get rid of the emotional side of any feelings I had about the stitch itself, suppress that thought, and refocus for the next stitch which was often even more important than the one I had just done. I have subsequently learned to apply this same approach to many other things of that sort, whether it be giving a speech, learning people's names, shooting baskets in a basketball game, learning how to snowboard, or any one of many, many other tasks.

The second stage of optimal performance quality management requires some form of later review. I have often thought that this is analogous to minimizing and maximizing windows in the currently popular computer programs. These programs have small arrows which can close a window and leave it as a small icon in the corner of the computer screen while one works on something else. However, one is able to go back to that small icon and "maximize it" to examine the window more fully. This concept of "minimizing a window", which can later be reopened is very valuable when one is performing. This is all the more valuable in situations where one must learn from what one is doing and in which the time constraints are enormous, such as a coronary artery bypass.

One of the ways I try to incorporate the concept of maximizing the window later is to dictate my thoughts at the end of an operation or after some subsequent conversations. Frequently a partner or a resident and I will discuss a case the next day or even later after it has been done, and I will have some new ideas or understanding of what we have done. When this occurs, I make a note in

my daily planner to dictate my thoughts about the subject. My secretary will type up the notes and I keep them collected in my techniques books or surgical journals. In this way, I am able to later reflect more fully on things that I have done. This type of contemplative review is very valuable, both for improving in surgery, and in many other realms also.

Vision

I believe that one of the main characteristics of a master surgeon is vision. One of my performance education colleagues asked me once what I thought separated the great or master surgeons from the others. He had observed that there was wide agreement around our hospital as to who are the best surgeons, but it was not obvious to the untrained eye what made certain surgeons the best. In fact, he had even watched some of these people operate and some seemed a little bit sloppy, others seemed slow, others seemed hasty, but somehow they were all thought to be very good at what they did. My reflection on this question was that first and foremost these surgeons always get good results, but the way they did so, I thought, more than any one thing, was that they had a vision of what they wanted to accomplish. This vision, in its fully developed form, is analogous to a sculptor who can carve a statue out of a block of stone. The sculptor has a vision of what he wants to create or accomplish and everything he does with his tools leads to that ultimate goal.

I think that there are many surgeons who approach their operations thinking they will just figure it out as they go along and do not really have a vision of what they want to accomplish. I think that that approach holds them back quite a lot, making them slower and

less efficient, but also interfering with their end result. I think they simply must have a vision of what it is they are trying to do to perform at their best. Obviously, the surgeon at the beginning of residency has a more unfocused image and may not realize quite as well how to gain this vision. One obviously can look at books, do dissections in the lab, and watch videos. An even better technique is to observe others operating, however, the real incorporation of vision into one's practice will come only with experience. The development of vision requires constant reflection and analysis. It requires one be a lifelong learner.

Independence

Obviously, the goal of our surgical training program is to make independent surgeons of our trainees. They come into the system being unable to be very independent and must leave ready to be on their own. I sometimes think of that evolution as being analogous to young birds learning how to fly because both require emulation, experimentation, and constant learning. We believe that there are three categories or stages of freedom going from "freedom from" to "freedom to" to "freedom of". Rollo May (1981) in *Freedom and Destiny* discussed the responsibilities that come along with attaining each stage of one's newly acquired freedoms. He stated, "*Each step...carries a new sense of the responsibility equivalent to the new freedom.... One can only be as responsible as one is free*".

The concept of "freedom from" involves freedom from externally imposed rules or guidelines. When one is in the mode of obtaining "freedom from", one is moving from the position of being evaluated and criticized to beginning to

evaluate and critique one's own performance.

In discussing the concept of "freedom to", one dwells on the freedoms that one would like to have to do things. This begins to get into the area of creativity. Albert Einstein (1954) stated that, "*The development of ...the creative activities of the spirit in general requires ...inward freedom*". He was aware that one cannot be creative unless one has an element of independence and freedom in one's life. Jacob Neusner, a college professor giving a commencement address at Elizabethtown College, pointed out that the real purpose of education is to teach people to teach themselves. The goal for our trainees in achieving the independence of "freedom to" is that they need to learn independently, perform independently, and begin to manage their own performance quality.

The next category of freedom is the "freedom of". We think that people, in order to perform at their best, must be happy in their role and receive positive feedback from what they do. One of the greatest disservices to medical education was a book by Samuel Shem entitled *House of God*. Shem was a trainee who did not want to be in medicine and who was miserable during his training. His experience was very different from most who relish the opportunity to work and learn in a medical education environment and who enjoy taking care of people and learning how to do it better.

There is an ad for a currently popular running shoe that states, "*It's the difference between **having** to run and*

wanting to run". When one enjoys what one is doing one has achieved "freedom of". Csikszentmihalyi in *Optimal Experience* (1988) discusses the concept of achieving a "state of flow" in which one has a seamless, subconscious, visceral feeling of turning an idea into an action. I think that this type of flow is seen in kids who play computer games. I have experienced it in other activities such as scuba diving, sailboat racing, bike riding, performing heart transplants, rollerblading, and snowboarding. In all of these areas, one has a sense of freedom and gets a visceral satisfaction from what one is doing. I do think that when people ask me how I do what I do in the operating room, my response is oriented around this concept of flow. Performance is a total body event. It is not one that involves just the mind, or just the body, but involves both. It requires intuition and emotion, and it should be fun. We often say in talking about surgery and about learning surgery, that it is the ultimate full contact sport. Thus, we have concluded that the freedom and independence that we are talking about is not a personal attribute or state of mind, but it is an activity, something that must be worked on at all times.

When our trainees have reached this point of independence, we believe they have earned the freedom to be independent operators. They have learned, after thirty years of formal education and tens of thousands of hours of training, to balance their freedom with the responsibility for managing the quality of their performance. They are ready to fly.

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Thinking Sound: Reflections on the Application of Mental Training to Opera

Hans **Gertz**, Opera Coach, Sweden

Hans Gertz was a highly appreciated singing teacher based in Stockholm, Sweden. For more than 30 years, he taught the classical techniques of opera singing to students. The Stockholm Opera School, the Gothenburg Opera, the Gothenburg Opera School, the Copenhagen Opera School, and several other music schools benefited from Mr. Gertz's knowledge and experience. Of the hundreds of students he taught, forty have international careers on stage and in well-known opera houses.

Abstract

Based on years of experience as a teacher of opera, Hans Gertz offers his reflections on the applicability of mental training to opera training. The importance of "correct" thinking is emphasized - if a singer is able to shape and colour sound in the mind, then its physical manifestation will be correct. A number of suggestions are presented for how students and teachers can use mental training in training the voice and pushing forth self imposed barriers.

Reflections on mental training and opera

Most singers I know do not use mental training in a systematic way in their daily work. It might happen that they use it just before a big concert or opera performance, but rarely in a more structured way. I have read hundreds of books about singing techniques, on how to use your voice correctly, but I have not read a single book about combining singing technique with mental training. Yet, it is very important. One of the great singers of the past, Nellie Melba wrote the following in 1903 regarding singing: "Nearly all difficulties are of our own making and are the result of wrong or confused thinking." The great tenor Beniamino Gilgi said that one of his teachers Antonio Cotogni always told him: "Remember that you must always mentally shape the vowel and impart to it the right colour, timbre and

expression before actually producing it." He added, "Think more, do less."

I first encountered mental training being used in a highly defined way in 1989 when I heard and saw Lars-Eric Unestahl on television talking about his work and how important it is to "Think in the right way". I then realised that I had been using and teaching mental training for years. I called Lars-Eric after the program, and since then we have worked together and have held courses in mental training for singers. In my daily work with singers, I consistently use mental training.

A good general education is of great advantage to a singer. Every singer knows that she or he has to be in good health to sing well, and for that, specialised physical training exercises must be studied and practised regularly. It is my firm opinion that you also have to use

mental training in a structured manner on a daily basis.

First, mental training can be used for vocal technique improvement. Some of the most common faults which can benefit from mental training are as follows:

- Incorrect breathing techniques
- Incorrect placing of the voice
- Larynx is too high or too low
- Soft palate is too stiff or hangs down, forcing the sound to pass through the nose
- Subglottis pressure is too high or too low
- Glottic resistance is either too weak or too strong
- Interpretation of music, text, and acting is not what it could be.

Naturally you must do exercises to learn which muscles work incorrectly in order to have them work correctly. Often you cannot just think the larynx into a lower position if it is used to being in a high position. You have to do special physical training exercises, but improvement will be more rapid if you consciously understand what is happening. The same applies for breathing, use of the palate and tongue and so on. By combining the mind with the physical exercises, the singer will acquire the right positions for the rest of his or her life.

The novice in every field looks at the champion and says, "It looks so easy". It *is* easy or the player would not be a champion. What is "ease"? I think that it is doing something without unnecessary muscular action or tension. How many of us know when we are making unnecessary movements? The

good teacher knows how to correct a student when she or he is showing these kind of faults - reducing the amount of energy being wasted and showing the student a good way to focus energy to promote/produce the right kind of muscular use for the purpose of producing a very good note.

It must become easy to sing. You must become free from unnecessary muscular tension. We fear, for example, that we cannot reach a high note or sustain our breath for a long note. In such cases, fear takes our attention away from what we should be doing in order to sing well and causes muscles to tense up, muscles that should be free to work or to rest. We must strive to banish fear.

If a tenor has difficulties with a top note, for example, the high C in the aria, "Che gelida manina", from *La Boheme*, he might be afraid of that note, anticipating possible failure. The singer, knowing he has to reach the note, tries over and over again to produce this note, and cracks each time. The singer is then sure that no matter how hard he tries, he simply cannot sing this high note. What was at the start a difficulty, has now become a certainty of failure.

What the singer can do, instead of trying to sing the top note several times a day, crack, and feel distressed, is take the aria down one note. In doing so, he succeeds in singing the top note (which is lower), and creates a feeling of happiness, freedom, and success. Having done this for a couple of weeks, the singer will transpose the good feelings to the right key. Having implemented the feeling, and knowing in his mind that he is successful in taking the high note, he is highly likely to achieve the same re-

sult with a note higher than the one trained. There is no point in training one's faults.

The habit of orderly and structured work cannot be formed too early. Many students who are anxious and eager to achieve results do not know how to work. A singer has to work, study and develop all aspects of singing, otherwise there is no chance of further advancement. The young and inexperienced singer does not understand the importance and need for hard, consistent and quality work, thereby not giving enough time for the process to take place. Instead, they expect instant results. They start by doing too much on one day, and nothing on the next. They are "in the mood" one day, while another day, they may not be in the mood to work. Then, they wonder why they do not get the desired results. Steady, regular, quality work with the mind concentrated on what is being done is absolutely necessary to excel.

No work of any value can be done without concentration, and there can be no concentration without relaxation. The power of relaxation is one of the most important things in the study of singing, as it is in the preservation of health and in the art of living. In my daily work as a singing teacher, I tell singers, "First, you must relax. Relax the whole body. Then you must mentally (a) see the vowel, (b) feel the vowel, and (c) hear the vowel." Every vowel sound must be mentally shaped and mentally given the requisite colour before being physically produced. When thinking is correctly based, the physical part reacts and adjusts accordingly with equal accuracy. To sing the sound of the vowel "A"

as in father, if you can think the sound, it will be correct.

The singer must learn to build up his or her feelings of being a good singer. The old saying, "Form follows thought" is very true in this case. To train feelings of happiness when singing, the singer must love his or her own voice and must love to sing. In daily exercises, effort must be put into developing the feeling of being a good singer. The student must as soon as possible leave behind feelings of being a student and start to think, "I am a singer". He or she must carry out the mental and physical voice training as if she or he is singing a performance. Training becomes a performance or competition. Then, when you actually go to a concert or opera performance, you are used to it because you have done this performance hundreds of times in your mind.

Visualization is of great use to the singer. When you come to a new place where you are going to sing, it is not always the case that the conductor likes you and/or your voice. You must be able to perform well despite this. Having seen, felt, and heard yourself performing well will help tremendously. Your programming of success is then not as easily disturbed as it would be had you not been prepared or trained yourself for this mentally.

Also, if you have a cold, you can still train your voice as much as you usually do. This is simply because you can train silently with your mind, and have the feeling of placing the voice correctly.

The following are a list of suggestions for how to apply mental strategies to practice:

1. You can place the voice just by thinking. If you want to place the voice against the lips, nose, or up in the head or neck, you think the vowel where you want to have it. As the great tenor, Gilgi, said, "I mentally think every vowel in my mind before I sing."
2. You can train breathing by mental training. Think how you want to breathe and the body will do what you will it to do.
3. If the larynx is too high, you must train it to lower itself with special exercises for the muscles, but use them together with the mind as soon as possible.
4. You must always have the musical phrase in your mind. You must think the phrase and what you want your mind to do with it
5. It is necessary to be relaxed from the beginning, both in body and in mind.
6. You must see, feel and listen to the vowel.
7. If you have a cold, you can train your voice as much as you usually do. You can train silently with your mind and have the feeling of placing the voice correctly.
8. If you have difficulties singing a very high section, bring it down one note. After practice, you will eventually be able to sing it in the right key. Do not train your faults.
9. The student should think of him or herself as a real singer, and not a student. Do not practice, perform.
10. Think the sound and the colour of the vowel you want to sing, and then listen to the voice and correct it.
11. You must visualize, have imagination, and feel the right feeling.
12. Brigit Nilsson said, "Discipline, discipline and discipline."

A very important part of teaching singing is that the teacher shall not be a fault finder, but should try to listen to the good things in the student's voice and then work on developing them. To be happy in our work and art, we must believe in ourselves or we will accomplish very little.

Excellence in Space

Marc Garneau, Canada

Marc Garneau is Canada's first astronaut and a veteran of two space flights. In 1984 he flew as a payload specialist on the Space Shuttle Challenger. He was later selected as a "cap com" captain of astronaut communication. He flew his second mission as a mission specialist and has logged over 437 hours in space.

Abstract

The performance skills needed to be an astronaut are, in many ways, no different than those of other high performance professions (e.g., ability to set priorities, focus on a task, deal with stress, work as a team member and communicate quickly and efficiently). However, there are certain aspects of the astronaut's workplace (such as the element of danger, the public nature of the profession, and the responsibility of working with expensive equipment) which make mental preparation a highly important component of preparation for space flight. In this article, Marc Garneau highlights the performance skills and demands involved in being an astronaut and presents his personal approach to mental training.

Excellence in Space

The following article is based on a keynote address that Marc Garneau presented at the 1995 World Congress in Mental Training and Excellence in Ottawa, Canada.

I know very little about mental training per se, at least in terms of it being a structured discipline. I am, however, conscious of the fact that I have applied certain principles of mental training, albeit subconsciously, to most aspects of my life, including astronaut training and preparation for space flight.

On Being an Astronaut

I became an astronaut in 1983. Thirty-four years of living had miraculously conspired to produce in me the required astronaut profile, whatever that is. Let me say right away that there are many people who would be good astronauts if given the opportunity. Unfortu-

nately, there are only so many spaces available. I was one of the lucky ones.

Let me start by trying to describe what it is to be an astronaut. There are certainly some misconceptions and these have endured since the beginning of the space program. Based on all the contact I have had with the public and the media since becoming an astronaut eleven years ago, the common image of the astronaut is that of a military pilot who spends most, if not all, of his time concentrating on physical fitness and the enhancement of motor skills. He also spends quite a bit of time getting poked and prodded in the interest of science. In other words, an astronaut spends most of his working day either in a gymnasium or a laboratory or out flying a high performance jet aircraft. Books such as the *Right Stuff* have helped to perpetuate that misconception.

While that image of the astronaut may have been true in the early days of the space program, the truth is that today, only some of the astronauts are military pilots, and incidentally, that includes women. However, many astronauts are civilians, and have never worked in a military environment. In fact, two types of astronauts exist: the pilot astronaut who flies the space shuttle and is always a military pilot; and the mission specialist astronaut who works in space performing a wide variety of tasks and is usually a civilian, often with a PhD in science, engineering or medicine. I happen to be a mission specialist.

Physical Preparation for Spaceflight

The public perception that astronauts spend most of their time doing physical training in preparation for space flight is actually quite wrong. Yes, astronauts must be fit for space flight and we have frequent physical examinations to monitor our health, but most NASA astronauts spend less than an hour a day on physical fitness. Spaceflight aboard the U.S. space shuttle is not the physically demanding experience that it was in the early days of the space program when astronauts were launched into space aboard rockets and returned in capsules. They had to withstand high accelerations on ascent and entry and their capsule landed in the ocean... hopefully near a waiting recovery ship. The crew quarters aboard the shuttle, although quite small, are spacious compared to the Mercury, Gemini or Apollo capsules, and so, spaceflight has changed considerably.

Now, I do not want to give you the wrong impression. Physical fitness is

important and remains an ongoing requirement. The reasons are as follows:

1. Spaceflight is very expensive, and we cannot afford to jeopardize a mission if an astronaut becomes ill, either in space or late in training.
2. If something does go wrong during a mission, the stress level can be very high and being fit helps to cope with that stress.
3. Some tasks such as spacewalking are physically very demanding. Other tasks while routine and not physically demanding, such as operating the Canadian robot arm, require intense concentration, and we all know that physical fitness enhances mental concentration.
4. Weightlessness deconditions a person. This might not matter as much if we were on a one-way trip, but the fact is that the crew must bring the shuttle safely back to earth. The task of piloting the vehicle is extremely demanding, particularly after spending an extended period of time in weightlessness. Our bodies have literally forgotten, at least temporarily, how to deal with the force of gravity. Again, physical fitness is considered important for this task.

One last word about physical training. It is an individual responsibility. Each astronaut is ultimately responsible for his or her own physical fitness, and although advisors are available if requested to recommend a specific pro-

gram tailored to an individual's needs, there is no structured fitness training.

Mental Preparation for Spaceflight

This brings me to mental training. Like physical training, this is an individual responsibility. No one at the Johnson Space Centre has a shingle on his or her door saying "Mental Training Instructor". There are no formal mental preparation classes prior to spaceflight. There is no mental training division developing mental strategies for astronauts. Basically, you are on your own.

I have read Terry Orlick's (1992) paper in which he proposes seven elements of excellence (belief, commitment, full focus, positive imagery, distraction control, mental readiness and constructive evaluation). I would say that for me, mental training consists of trying to incorporate those seven elements into my mental preparation for spaceflight. I do not sit down, go over the list, and plan my next move. A more accurate way of putting it would be to say that I try to work on every element simultaneously, a little bit like a juggler juggling seven balls at the same time. Every once in a while, something significant happens, and causes me to stop and do some self-analysis. I then realize that I have dropped one or more of the balls. In other words, it is not a highly structured process, but I would say that it is a very deliberate one. I suspect that this is the case for most astronauts.

Mental preparation for spaceflight is extremely important, and in the case of astronauts, in my opinion, more difficult than the physical preparation which is relatively straightforward. And

yet that journey to mental preparedness is a solitary one for most part.

When does that journey begin? I believe it begins in childhood. Did all astronauts start out as children wanting to become astronauts? Certainly not. Whatever it was that they wanted to do at that moment in their young lives, whether it was playing on a softball team, acting in a school play, winning a prize for best composition or learning to play the piano, they began the process of mental training required to reach their goals. They were not aware of it as such, in a formal sense, but the successes and failures they experienced along the way allowed them to refine the mental training required for each subsequent task. In other words, they gradually discovered what worked best for them. And then it was on to the next goal, this time with a greater sense of confidence and a greater knowledge of themselves.

I said earlier that this is a solitary task. Of course, I realize that support, encouragement and advice from others along the way are as important as the personal feedback one receives from having achieved or failed to achieve a goal. But ultimately, each person is responsible for integrating this advice and feedback.

And so, the process of refining one's mental training to achieve one's best is an iterative one. It is no different for an astronaut than for anyone else. It continues to improve through childhood into adulthood and sometimes stalling out or occasionally even to deteriorate on occasion. As with all forms of training, mental training is never static. It adjusts to changing factors. Ultimately, it requires you to know yourself, your

strengths, and your limitations and how these are continuously changing over time.

Important Mental and Physical Skills for an Astronaut

Now let me tell you what I think are the important mental and physical skills required of an astronaut (Please don't jump to the conclusion that I possess all, or for that matter, any of them). They are as follows:

1. The ability to prioritize in order to identify the most urgent task.
2. The ability to focus on a specific task to the exclusion of all others.
3. The ability to think clearly and quickly and to act correctly under stress.
4. The ability to maintain the 'Big Picture' while attending to a specific task.
5. The ability to rebound from failure and move on to the next task. So far, this does not sound very different from many other professions. To continue:
6. The necessary motor skills and eye-hand co-ordination required to control a complex space vehicle or robot.
7. The ability to communicate quickly, clearly, and concisely.
8. A team player's temperament.
9. The ability to work in cramped quarters for extended periods of time.

Again, none of this is exceptionally unusual. Many professions require these skills, some to a greater degree than others, particularly when something goes wrong. Being an astronaut is not all that different from many other professions.

Why is Mental Training Important?

Before discussing how I prepare, an important aspect to address is why I need to prepare myself mentally for spaceflight. What are the motivations for doing so?

First, when I have been given specific responsibilities for a mission, I want to perform flawlessly. I will be working with spaceflight hardware worth millions of dollars. I will be performing experiments on behalf of scientists and engineers who have invested years of work getting an experiment ready for flight. I will be a proxy-investigator working on their behalf. There is a great deal at stake and I have only one chance to get it right. Speaking candidly, this is an awesome responsibility. It creates an enormous burden of expectations and I do not want to disappoint anyone, including myself.

Second, I perceive, correctly or incorrectly, that the whole world is watching me. I am on stage and every faltering step will be noticed. You might say that I am motivated by the urge to avoid embarrassment.

Third, spaceflight carries an element of danger and will require my best performance if something goes wrong. In this respect, I believe that my greatest motivation is the family I have left behind and my fellow crewmembers.

Finally, I am surrounded by over 100 astronauts, many of whom are more talented than I am, and I am damned if I am going to let any of them know it!

An Astronaut's Methods of Mental Preparation

And so to the central question, how does an astronaut mentally prepare himself or herself?

First, by training: by practice, practice, practice, and then, more practice. By training for what we call the nominal scenario, and then spending considerably more time training for the "what if something goes wrong" scenario. In this respect, NASA has superb simulator facilities and they are used extensively prior to each flight. The adage that practice makes perfect is certainly true in my profession, not only because it increases my chances of doing it right, but more importantly, because it will allow me to do it more quickly. Speed of reaction is a critical factor during ascent and entry and the pilot astronaut shoulders most of the responsibility during these phases of flight. Once in space, there is the additional requirement to adapt to weightlessness as physiological changes take place in the body. Some astronauts appear to be unaffected by these changes in terms of work performance. Others feel many of the symptoms common to motion sickness, and this can last for several days. Some have described a 'woolliness' in their thinking, not feeling as sharp as usual - all the more reason to have trained extensively beforehand since there are no breaks planned for adaptation to space.

Second, I visualize each step of a task I will perform before I perform it.

This includes practising the "what if" scenario in case I do not get the correct response from my actions. This is my last dress rehearsal and my last mental check before I do something. Sometimes I will ask a crewmember to crosscheck me. Obviously, visualizing is not always possible, especially in time-critical situations.

Third, I try to maintain and enhance specific motor and communication skills prior to spaceflight. This is why astronauts train in jet aircraft, a multi-sensory environment that develops the ability to react and communicate quickly and correctly in demanding situations while performing other tasks. This training transfers very well to the shuttle environment.

Fourth, an astronaut has to develop mental discipline. Mental discipline is purging your mind of other distractions before you begin a task. It is thinking before you act, thinking before you speak, remaining focussed on the task at hand, using the fewest words to communicate and checking yourself when your mind wants to relax at the wrong time.

On a more personal level, I try to forge strong personal links with my fellow crewmembers. After all, these are the people I will live and work with during the spaceflight. My life may depend on them and their lives on me. Team cohesion is extremely important for spaceflight as I am sure you can imagine; I am putting my complete faith and trust in my fellow crewmembers and I want them to reciprocate. This may require an adjustment in interpersonal relationships, something which I might not

be prepared to do back on earth, but which is essential for spaceflight.

Also on a personal level, I make peace with myself as the spaceflight approaches. What I mean by this is creating the right mood for the experience that lies ahead. This includes mundane tasks such as sorting out my finances and getting up to date on my correspondence. After all, I will be gone for a while. Part of it also has to do with "psyching myself up" for the flight. This is a worn-out expression, but I think it conveys the idea very well. Part of it also has to do with helping my family prepare for the experience. Astronauts often say that spaceflight and the endless preparation for it are often harder on the families than on the astronauts, and there is a lot of truth in that. Finally, there is the physical conditioning so that I feel as sharp as possible on the day of launch.

Having tried to explain how an astronaut mentally prepares for space, and given that this is done with very little external guidance, I would have to say that astronauts perform the necessary mental training remarkably well. Perhaps it is the culture that exists at the Johnson Space Centre or perhaps the realization that many others have done it successfully before you which tends to give you confidence. You certainly try to follow the example of more experienced astronauts. Perhaps, it is instinctive and is really based on all the experience you gained before becoming an astronaut...perhaps a little of each.

Ability to Rebound from Failure

Of course, no one is perfect. Every astronaut will admit in hindsight that he or she could have been better prepared for a particular task and that

their mental training program may have had weaknesses.

There is one particular aspect of mental preparation which I would like to dwell on for a moment - the ability to rebound from failure and to move on to the next task. It is truly difficult to prepare mentally for this eventuality, and even more difficult to cope with it once it has happened, especially in the "Glass Bubble" environment of the space shuttle where all mistakes are exposed, if not to the world, then at least to those on the ground who are following the mission closely. I am talking about the hundreds of experts who directly support each spaceflight.

When we make a mistake, it tends to haunt us and to distract us from concentrating on the next thing that has to be done. This is the normal course of events. Yet, it is a luxury that we cannot afford in space since the work of a crew never stops and a loss of concentration can lead to other mistakes, some very important.

More than anything else, an astronaut wants to do a perfect job during his or her mission. This is probably an impossible goal, but one which every astronaut tries to reach. As I mentioned earlier, there is the additional pressure of perceiving that you are on display for the whole world to see. While astronauts are generally not too hard on themselves in terms of self-criticism during their training on the ground (in fact, they welcome all the feedback they can get from their trainers), they tend to be harder on themselves if they make a mistake in space. It can prey on their minds and distract them from other important concerns. In this respect, a sensitive ground

support team is very important during a mission to maintain a high level of crew morale, since the most important thing is to stick to the tightly scripted flight plan. As astronauts, we learn this with time and experience. We have no other choice.

Mental Skill Training in Daily Life

There is certainly room for improvement in my mental training. I keep working at it in everything I do, even in the small details of my daily life. Let me give you an example, perhaps a trivial one. I am very fond of a computer game called Minesweeper. The game is both mental and physical. The mental part involves computing the location of mines based on visual clues. The physical part involves moving a cursor, using a mouse and two of its buttons. The aim of the game is to defuse the mines as fast as possible without getting blown up. I think it is a great game for eye-hand-brain co-ordination. My wife says I am addicted to this game, and perhaps she is right. But, I have also learned some important lessons in the process. I have learned that my hand can lag behind my brain and that this loss of synchronization can cause me to make the wrong move. The brain and hand **have** to be co-ordinated in space. If the brain is too slow, it takes too much time. If the hand is too slow while the eyes and the brain forge ahead, it can lead to the wrong move. Maintaining synchronization is critical for tasks such as robot control.

The other thing I have learned from Minesweeper is that my emotions sometimes get the better of me (such as when I get mad at myself), my play invariably deteriorates and I make the wrong move. The lesson here for me is

to control my emotions. I believe on balance that it is more important for me to do it correctly than to do it quickly and, more often than not, I think this is the right approach for most astronaut tasks. In other words, strive for speed by all means, but slow down when your emotions are getting in the way. It interferes with your thinking. This is a lesson with many applications elsewhere. And so, even a curious little pastime like Minesweeper can be instructive.

The Joys of Being an Astronaut

Being an astronaut is a rewarding experience for many reasons, some of them perfectly obvious. I have gazed upon our beautiful planet from space. I have experienced the sheer exhilaration of speed and power that is a launch. I have tumbled joyfully, like a child, in weightlessness.

Being an astronaut is a fabulous experience. I am very conscious of my good fortune and I feel an important responsibility to share that experience as often as possible. I have to admit that my motivation for being an astronaut has changed over the years. Initially, it was purely personal. I wanted to answer the call to adventure, and to test myself on the new frontier of space. I wanted to see if I had the "right stuff". Ten years later, and having savoured the experience of spaceflight, my motivation is now broader in scope. I want to be an astronaut now because I believe that it is an important human undertaking, and I want to be a part of it. Spaceflight has a habit of changing your perspective on life, and of this planet on which we live and struggle to find harmony. Having experienced spaceflight, I now find myself more interested and concerned with global issues rather than local issues.

You cannot help that once you have seen our planet from space. Somehow, many of the things that I thought were important in my life before I flew seemed trivial after my flight.

When your feet are solidly planted on earth, you can only see a few kilometres to the horizon. Your daily life is bounded by that limited horizon. When you fly in space, you circle our planet in 90 minutes, and you can see 1,000 kilometers in front of you. You experience sixteen spectacular sunrises

and sunsets during every earth day. You see the beauty, and you see the signs of destruction - some of it natural, some of it man-made. Most of all, you notice the vastness of space. Planet Earth looks particularly inviting from the vantage point of space. You can forget for a while that borders separate us, and that wars are raging below. Earth in its lovely tones of blue and white, brown and green, is home, and the importance of preserving it is impressed upon you dramatically. I wish everyone could see it.

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Applications

Balanced Excellence: Juggling Relationships and Demanding Careers

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Abstract

Is it possible to achieve a balance between a highly demanding profession and meaningful relationships? Twenty full-time national team coaches were interviewed to determine the nature of their job demands and the perceived impact of these demands on relationships with their partner/family. The coaching occupation at the elite level requires a huge time, energy and emotional commitment as well as extensive travel. Coaches, on the whole, believed that this commitment was necessary to achieve their high level goals and that their devotion to their work impacted on the quality of their relationships. Even with this commitment, however, most coaches felt that it was potentially possible to achieve excellence in both their occupation and their relationships if certain conditions were attained. Some necessary prerequisites for balanced excellence are discussed.

Introduction

One of the core factors necessary for achieving excellence in any domain is an intense commitment to one's pursuit. Such a commitment implies that over a period of time a unitary focus is crucial to the development of skills required for success. Most adults are faced with trying to juggle, at minimum, a profession, family and personal needs. Does excellence in one area of one's life preclude excellence in others? This question was explored by examining the experiences of individuals in one highly demanding profession: full-time high level sport coaching.

Much of the literature on the coaching profession has centered on qualities and skills associated with effective coaching. The focus has been on how the individual impacts on the profession rather than on how the profession impacts on the individual. Only recently has sport research begun to look at the effect of coaching demands on individ-

ual well-being (Sage, 1987; Weiss & Sisley, 1987; Wentzell, 1986; Wilson, Haggerty & Bird, 1986; Wilson and Bird, 1988).

The purpose of this study was to gain insight into the following three questions: (a) What are the occupational demands of high level sport coaches?; (b) Did coaches feel that these demands affected their ability to maintain satisfying relationships?; and (c) Did these coaches feel that excellence can be achieved in both career and relationships concurrently?

Method

Participants

Twenty national team coaches who were employed full-time by a national sport organization were involved in the study. Coaches were not preselected on the basis of marital status. It was felt that regardless of status, coaches would be able to comment on the topic of the study.

The twenty coaches ranged in age from 29-59 years of age; the mean age was 40.8 years. The majority of the coaches were male (n=16). Only a small number of female coaches were involved which reflects the small number of women coaching full-time at the national level. Due to the small number of female participants, male-female comparisons were not conducted.

Sixty percent of the group (n=12) were married at the time of the interview: one female and eleven males. The remainder were either divorced or had never married (although one male had lived for an extensive period with a partner). One quarter of the group had experienced a divorce during the course of their national coaching career. The majority of the currently married coaches had children (n=9).

In terms of coaching at the national team level, the range of experience was one to twenty years. The mean length of time coaching at this level for the group as a whole was 9.9 years.

Interview Construction and Protocol

An interview format was considered most appropriate for collecting the type of data desired for this study: detailed descriptions of individual perspectives. An interview guide was developed based on topics that emerged from the review of literature and on input from individuals with elite level coaching experience. The questions in the National Coaches' Interview Guide focused on four areas: the demands of the coaching profession at the elite level, the perceived effect of the occupation on relationships with a partner, their perceived role in the relationship and the possibility of achieving excellence in

both career and relationship. The majority of the questions were open-ended.

The National Coaches' Interview Guide was used to attempt to reduce potential interviewer bias. The guide ensured that a standardized, uniform approach was used with each participant. The flexibility of the interview format, however, allowed the participants to address issues deemed relevant to the topic and allowed both parties to ask for clarification if necessary.

The interview guide was pre-tested on three experienced coaches in order to ensure relevancy and clarity of questions. Some minor adjustments were made based on recommendations from the coaches.

Procedure

The Coaching Association of Canada sent a cover letter to those coaches who fitted the criteria for the study: full-time coaches employed by a National Sport Organization. The letter explained the nature and the relevance of the study, ensured confidentiality and indicated to the coach that he or she would be contacted in the near future for an interview.

Agreement to be interviewed implied consent. Prior to each interview, permission was given by all participants to tape the interview. Tapes were transcribed verbatim by the researcher.

A number of transcripts were subsequently sent to coaches for confirmation of their accuracy. Coaches indicated that what was recorded was a valid account of their perspectives.

Data Analysis

Analysis of the data was of a qualitative nature. Each transcript was read through a number of times to familiarize the researcher with its content. Key phrases in each transcript related to the study topic were highlighted. Key phrases from all of the interviews were then aggregated to establish major themes common to the majority of the transcripts. The phrase contents of these themes were then reviewed to ensure that they were appropriately categorized. Representative quotes were selected to illustrate key themes in the words of the participants themselves.

In order to establish reliability of theme identification, another researcher familiar with qualitative methodology read through selected interview transcripts. Using theme labels, this researcher categorized phrases from the interviews. Results were then compared to the original categorizations. Inter-rater reliability was 90%.

Results

The Effect of Coaching Demands on Relationships

Prior to addressing the issue of whether balance can be achieved, the extent of occupational demands was identified. Coaches were asked for details of their jobs including what a typical daily, weekly and yearly schedule was like for them.

Coaching demands that affected an ability to lead a balanced life could be classified into two main areas: time and travel. Common to all coaches interviewed was the enormous amount of time and energy they put into their jobs. Two sub-themes arose from the interview analyses regarding time involve-

ment. The first was the sheer volume of time that coaching at this level requires, and the second was related to the kind of commitment coaches felt was necessary to be successful. Time spent away from the family in travel is discussed separately, as specific difficulties seem to arise in connection with leaving, being away and returning to the partner/family.

How these demands influenced their relationships was the main question explored with the underlying theme being that of whether coaches felt they could balance work and relationship demands. Comments on the nature of the coaching occupation and how coaches, partners and families juggled occupational demands are integrated into the following section.

Time Requirements

Theberge (1987) in an analysis of female Canadian coaches stated, "At elite levels, coaching is demanding work involving intense relationships with athletes, long and irregular working hours, and often, extensive time away from home for travel to competitions and camps" (p.185). The national coaches interviewed for this study described similar demands.

The time requirements of national coaching were described in terms of irregularity of hours and the immense volume of time the job required. Coaching at the elite level is definitely not a nine to five, Monday to Friday job. Coaches said they were often making and receiving phone calls well into the night, working on equipment late at night, dropping into the training center on their days off and taking work with them on their holidays: "...at 11:00 last night I was trying to hire a new coach."

Not only are the hours irregular, the volume of time put in by coaches was great. As one coach stated it, "*Unless it's holidays, there's something going on all the time. It's just amazing the amount of stuff.*"

One reason for this volume was the multi-dimensional nature of the job. National team coaching involves duties that go beyond working with athletes. One coach described the duties as: training athletes, organizing tours, speaking to parents and personal coaches of athletes, answering calls from athletes, entering athletes in tournaments, ensuring that tournament entries are organized, "...and then I usually have other projects, sort of the bureaucracy of sport, things like filing reports. Every tour that we do we have to do a report at the end that goes to the players and their coaches and there's also the expense report."

Although the time required to fulfill these duties was generally very great, it increased at certain times, for example, with the approach of an Olympics or with a rise in success or recognition. The more successful some coaches became, the more demands increased. These burgeoning demands were sometimes seen as unwelcome intrusions on the little free time the coach had.

There's other things like seminars, symposiums and the more successful you become, the more you're asked to attend those or speak at them or clinics or what have you. And if you don't do it, you feel guilty, you feel as though you're not giving back something to the sport but by the same token, it's more of your time that's given up for (the sport) that you could be using for yourself.

With little and unpredictable free time available, certain aspects of their personal relationships were affected.

One feature of the relationships most disturbed by the coach's time involvement in sport was the amount of one-on-one time available for family members. An important component in relationship satisfaction is effective communication (Havemann and Lehtinen, 1986; Hendrick and Hendrick, 1983). A key aspect of effective communication is frequent communication (Boss, 1983). The hectic schedules that the coaches followed made frequent contact difficult to achieve.

The whole concept of an evening disappears and of course, with competitions, the concept of a weekend disappears... Travelling is a real demand but lots of people travel. I think the real demands are day-to-day; there's crazy hours in coaching.

Not only was time with the family scarce, other problems arose which minimized time that might have been available. One problem was interruptions at home due to work-related phone calls morning and night. Another problem mentioned by some coaches was simply not having the energy at the end of the day to interact in the way they would like, especially with their children.

I think an important thing with our job is that after a really hard day, I'm really physically tired and what I would love to do is get the basketball and...play with (son) and there are times when I'm just too tired and I can't do it. And I resent that. And I think he probably does too.

One of the single coaches also mentioned that lack of energy made trying to establish a relationship difficult: *"It's easier to go home and read a book because you're too tired to have a decent conversation with someone"*.

The coaches discussed two perspectives regarding the potential time they had for their partners/families. Some coaches simply felt that time for their relationships was not available: *"We didn't make time. The administrative demands would have made it impossible to do stuff like that together"*. Others made a definite commitment to make time for their family. For twenty-five percent of the coaches, when they were at home, all of their spare time was spent with the partner/family.

I realize that this is a tough relationship so when I am home I do everything with my wife. I mean there's no going off and playing golf with the boys. I play golf with my wife, we go biking or we go to the movies together, we do everything together and there's no consideration for anybody else. I've always told her when I'm home, my commitment is to her and that at any time she feels I'm not honoring that commitment, I want her to speak up.

Some research has shown that it is not necessarily the amount of time spent away from the family that influences satisfaction with a relationship (Guillota & Donohue, 1981), rather it is what one does with the time together. In cases where husbands spent most of their spare time with their partner, wives expressed greater satisfaction with the relationship (Clark, Nye & Gecas, 1978).

Coaches made various attempts to create more one-on-one time including: putting their children to bed early one night a week in order to have time alone with their partners, making an effort to set aside time with a partner and each child individually or dedicating one day a week to the partner/family when in town. Most coaches also planned a yearly vacation with the partner/family. Vacations were an opportunity for both partners to renew the relationship away from all other priorities. Although these are simple measures, most coaches recognized the importance of making a commitment to act upon them to maintain meaningful family relationships.

In dealing with people around you...it's real easy to get caught up in everything you're doing and cut them (partner/family) out too. It's really important that you go back to caring enough to be honest, caring enough to communicate wholeheartedly with them and caring enough to ... be aware of what's going on for them too.

Not only did the huge time involvement of coaches influence the time available each day to spend with one's partner, it was a salient factor in long-term family planning. The majority of married coaches (75%) in this study had children. For almost all of those who did not, the extent of the job requirements and their devotion to their occupation directly influenced the decision of whether or not to have children. These coaches felt that it would be unfair for the children and the partner at home to be an absent parent.

We would not have had a child if I was still coaching, that's for sure. We'd maybe still be together, but I'd never go

as far as to say, 'Well, see you (partner's name), bring up the child'. There was no way with children that I thought it was good for them if they hardly knew who their dad was.

Even though most coaches said they tried to spend as much of their spare time as possible with their partner/family and to get involved in their partner's interests when at home, the reality was that the partner/family spent much time on their own. Coaches felt that their partners had developed both coping strategies and qualities, which were critical to the continuation of the relationship.

Literature which has examined how the spouse of the coach has coped with the lifestyle identified several coping strategies including the development of support groups, and becoming involved in the coach's sport (e.g., as team assistants, travelling to camps and competitions etc.) (Sabock & Jones, 1978; Wentzell, 1986). The coaches interviewed for the current study said that their partners had developed similar strategies.

Coaches also mentioned certain qualities that their spouses possessed that were integral to the maintenance of their relationship, the two most important being self-sufficiency and a willingness to make sacrifices. Three of the coaches made reference to the fact that their partners made more sacrifices for the relationship than they had.

You have to have a special person. To hold the whole thing together, I'd say that (partner) certainly made much more sacrifice than I did...I certainly made a lot of effort but she was the one who certainly had to adjust her

life more than I adjusted mine. I was still going on the same schedule; away, come back for a little while, have quality time and then be gone again.

Linked to this recognition of the contribution spouses made to the relationship was the awareness by some coaches that their own contribution was often not what it should be.

I saw my role as being someone who could be there unconditionally for her, that could support and provide assistance to her in every way, shape or form. But again, in so many cases I denied living that because although that was what I set as an objective, my priorities didn't live that way and so a lot of things kind of got pushed and shovelled back and compromised where they shouldn't have been. So what I actually projected as my role and what I actually lived as my role didn't mesh. They were two different things.

The Commitment Needed for Coaching Success

It was evident during the interviews that coaching was viewed not simply as a job but as an obsession. Coaches were asked during the interview how they felt about the amount of time they spent at work versus at home. For the most part, coaches accepted the enormous time commitment as a requirement of success at their job. Only three coaches out of the twenty mentioned they would like to take time away from their job to have more time at home.

I thought that I had to work as hard as I did in order to have the quality of results that we got. And then for me to spend more time with (partner), I would

have had to work less and therefore, the quality of coaching and the team and everything else would have been much less. At the moment I'm considered among the top three coaches in the world and I wouldn't have accomplished that if I couldn't have had anything less than the effort that was put into it.

Some coaches made an extensive time commitment even more extensive by bringing work home. Bringing work home in this case refers not only to physically carrying it home but mentally carrying it home and spending much of time at home thinking about the job. Some (25%) felt it was impossible not to bring it home; they could not forget about it.

You're never really able, especially in the competitive season, to put it away for a period of time where you can forget about it....Things just pop into your mind and sort of bring you back to the job, it doesn't matter what the situation is.

A number of coaches said that even on their days off they would find themselves dropping into work or if on vacation, brought a suitcase of work with them.

This was the one week to ten days (in the year) that we can actually say we had time just for each other...and even on those I always took a full briefcase. The first one I remember, I used to work. She'd be down by the pool and I'd be up in the room. She'd just shake her head and go, 'This guy's weird!'. I got better, but it was true I used to take a full briefcase at least the first three to four years.

Three coaches made a determined effort to separate home and work. For example, they limited the amount of time spent thinking and talking about work when at home, limited phone calls to emergencies or used the time between work and home to put away the day.

I live about an hour from here (work) so once I'm home, I don't work. Nobody really calls me at home unless it's an emergency and all the national team members know if they want to reach me they can leave messages here (work) from 8:30 to 4:30 and only really in extreme cases will they call me at home. When I'm here (work), it's action packed. I don't have a break and then when I go home, I sort of have that hour to unwind... I think (partner) respects the fact that once I leave work at 4:30 and I'm home, it's off limits for anyone to call me unless it's an emergency and then we don't mind dealing with it...so work isn't really coming into our personal life unless I'm discussing something with (partner) or bringing up a problem.

Separating work and home life or at least limiting the intrusion of work on home life are recommended strategies in preventing burnout (Maslach, 1982). All coaches in this study did bring work home to some extent, however, in that they shared work experiences with their partners. Coaches varied in the type and amount of information they shared. For example, some coaches felt it was important to share only the positive experiences of the day. Most coaches used their partners as sounding boards and appreciated receiving an outside perspective.

Three coaches mentioned one difficulty with respect to discussing

frustrating work issues at home. Sharing the story took energy from both the coach and partner but rarely resulted in the problem being solved as neither had control over the situations being discussed.

I wouldn't always say it works out well because sometimes she gets into it and doesn't know. She's not aware of all the things surrounding the situation and then it gets into either you've got to provide more information which then becomes tiring because you want to get away from work or she makes comments not knowing all the information which gets you into a little bit of a row. So I don't know if it's good to do that. You're better off to have your own time, to have something else to talk about.

Some of these frustrations at home could be avoided if it was clear to both partners what kind of support is required, e.g., a sympathetic ear. In addition, it may be beneficial for coaches to discuss these issues with other coaches or trusted support staff. Issues can then be raised with others who have experience with the issues and who are potentially in a better position to understand and/or help the coach resolve the issues at hand.

Travel

Another demand common to national team coaches that made a balanced home life more difficult was travel away from home. The amount of time coaches were away varied due to the sport and the scheduling of camps and competitions, however, it was typical for a coach to be away from one-half up to three-quarters of the year. While some coaches considered this amount of time away from home extensive, others ac-

cepted it as part of the job. One coach (whose partner also coached in the same sport) saw it as an opportunity for them to visit exciting places.

The literature concerning those families where one member is often away due to travel suggests that the events of leaving and returning can be difficult ones for the entire family (Bey & Lange, 1974; Mitchell & Cronson, 1987). Disruptions to routines, shifting roles and discrepancies in expectations were the main difficulties faced. Coaches and their partners/families faced many of the same difficulties. However, they developed some positive strategies for leaving and returning that appeared to facilitate these events.

Leaving

For almost three-quarters of the married coaches, leaving was or used to be an upsetting time. Parting was anticipated for some time before it actually occurred and was marked by partners becoming more distant or upset. Some coaches found it upsetting because their partner was upset and for others, because they were going to miss their partner/family.

I wanted it (leaving) to be special and good and to leave knowing that everything was great and I find that because they know I'm going away, they become more distant because they don't want to have that cut-off point. So they tend to be more distant; I'm trying to be closer and it ends up making the week before very rough.

For three coaches and their families, they had been through so many departures that the whole process had become routine.

Measures which coaches and their partners/families took to facilitate the leaving process fell into three main categories. They increased the amount of time they spent with partners/families in the period before leaving and planned some special events, e.g., a dinner or a movie. They tried to attend to as many of their home duties as possible in advance. For example, if coaches were responsible for the household accounts, they would pay all the bills paid ahead of time. Advance organization by others included getting their children involved in extracurricular activities so the partner had some free time when the coach was away and arranging for a friend to periodically call the partner to ensure all was well.

The most frequently mentioned strategy was the use of a calendar. Knowing when the coach would be away helped the partner/family anticipate and plan for that time, both in terms of scheduling family events between camps and competitions and in terms of scheduling the time for when the coach was gone. For example, some partners used that time to travel themselves or to see friends they would not see otherwise.

As useful as calendars were, it was detrimental to rely too heavily on the exactness of the dates. Once a partner had prepared for the upcoming time away, any changes in the schedule, which were common, became extra-disruptive.

One of the problems has been that the schedule changes a lot...she wants to know so she gets fixed on it and when it changes, it upsets her...I used to say, 'I'm going to be gone (let's say we

had a tournament the sixth to the fifteenth), I'm going to be gone from the sixth to the fifteenth of August' and she'd write that down and then all of a sudden we couldn't get a flight on the fifth. She said, 'Every time you tell me a date, it's always longer, never shorter'. So now I block out a big period so that she doesn't get all wrapped up in exact dates.

Being away

When away, many coaches experienced a narrowing of focus toward the team and job. Thoughts of the family were minimized.

When I was away, I could balance my time better and my time was probably 95% team and 5% myself. I could totally dedicate myself to the team, as long as I had the feeling that I left enough money at home and they were safe and secure. I didn't have the daily demands that would be required if I was home, the daily pressures of family and children. Not that that was good because I was putting all that pressure on my wife to raise my children, raise the family but from a coaching standpoint, it meant that almost all my time was spent with the team or thinking about the team....Almost when I'd get on the airplane, I'd try to click into a gear that says, 'There's absolutely nothing I can do at this point; I've done what I can now I'll spend this time with the team'.

An interesting point raised by three coaches was that they felt that it was easier for them to be away than it was for their partner to be at home. For the coach, days were busy and often involved an enjoyable social component, e.g., seeing other coaches, former players. The partner, however, came home to

a mateless house and typically had not only his or her own duties, but those of the travelling partner to contend with. Partners, therefore, had extra burdens added to their workload and at the same time, were deprived of their main emotional support (Bey & Lange, 1974; Mitchell & Cronson, 1987).

The time the coach was away was made easier for some partners by geographical relocation so that the partner could be close to his or her family. Coaches also mentioned that their partners dealt with the time alone by travelling themselves, becoming more involved in their own careers, taking on extra projects and/or by developing strong friendships.

In the summer, she plays softball with a group of ladies and they were a very good support group because they socialized as well. She needed that because she needed to get away from the kids in all fairness to her. She would have gone bananas just staying at home with the kids.

Being away from their partners/families so often and for long periods resulted in some personal reflections on the part of some coaches. Seeing other cultures and other families helped them realize how much they valued their own families and lifestyle. It also made them aware of the things they were missing: birthdays, anniversaries, watching their children grow and the simple sharing of daily events.

There are so many... experiences in life that go on from day-to-day that you go, 'I wish they could see this' or 'I wish we could share this' and you can't and you try to tell them about it, you try

and write about it but it's not the same. So many things like that get lost that you start to lose ties together and I mean the whole deal of having a relationship is having shared experiences, having ties with the other person through those shared experiences and when you start to lose those things, you know the relationship can deteriorate fairly rapidly unless there's a real concerted effort to keep it glued together.

For some coaches, especially those in the early stages of a relationship, there was concern that the lack of time together and what was missed would jeopardize the survival of the relationship. Coaches reflected upon questions such as: do we really know each other, what if we have nothing in common, have I missed too many important events, and how will we cope when I leave the profession and we have to be together all the time? Coaches felt that as they are away so much, it made it difficult to establish a good basis for a meaningful relationship.

Returning home

Coming home was marked by a period of readjustment for both the coach and the partner/family. For almost half of the coaches, the main emotion associated with their return was one of tension.

When I would come home from trips and it would be upwards of five weeks away from home...I would have to try and fit in to their schedule and there was an adjustment period that would take one to two weeks sometimes. Because I'd come home and I'd think I'd fit right back in. Well, my goodness, I didn't because she had to plan extremely close because she was raising kids and doing

her own social things. So all of a sudden, I'd come back in and I'd upset the way she was going. So there were periods of adjustment where we" have to find each other again but fortunately we did and it always seemed to make the bond a little stronger. The first trip I didn't understand it. Boy, I got my knuckles slapped so I realized pretty quick that I had put her under a stress.

Difficulties arose from a difference in expectations. The coach expected the family routine to be the same as before he or she left. However, the family had established their own routine in the coach's absence, which was then disrupted when the coach returned. Expectations also differed in that the coach would often come home wanting only to rest to be faced with a desk full of work that had accumulated in his or her absence and a partner/family who eagerly anticipated spending time with the coach upon return.

In families with children, shifts in the roles of authority could also cause problems for both parents and children. The home partner was often the authority figure while the coach was away. On return, the coach expected to assume that role while the partner did not want to give it up. For the children, as the authority figure changed, often the rules did too.

It seems like the house at times has two rules: rules when Daddy's home and rules when Daddy's not home. I come home, I change the rules...so it's tough sometimes on the kids and on my wife...Sometimes I do have time to reflect and I say, 'Hold it, hold it, you haven't been here for the last two weeks, you

don't know what's been happening'. But it's something I wrestle with all the time.

Coaches discussed some simple but effective things they did to facilitate re-entry into the family such as taking time off immediately upon the arrival at home to re-energize themselves and gradually re-establish the family unit. Some coaches made a point of doing special things with their partners/families such as staying at home with the children so the partner could get out of the house or planning special activities.

Priorities and Balance

Looking at the occupational requirements of elite level coaching, it appears that balance in terms of equal time spent on work and family relationships was virtually impossible to achieve. One question asked of coaches was what they perceived their priorities to be and how they would rank them.

All of the single coaches said that coaching was essentially all they did in their lives, thus, it was their top priority. Whether the job was given top consideration because of the lack of a relationship or whether work demands made a relationship impossible was not determined. However, single coaches did mention the difficulty in establishing a meaningful relationship because of the nature of the job. One problem encountered was that it was difficult to find someone who accepted his or her commitment to or passion for the occupation. In addition, because of the time away, the coach had a limited opportunity to establish a social life outside of coaching. The majority of single coaches expressed concern over the singular focus of their lives.

You know, sometimes I'll be standing on the deck, talking to myself and wondering what I'm doing. Sure I love the sport and sure I love coaching, but that's not everything. And I'm starting to question that more and more.

Most of the single coaches also recognized that they needed to make an effort to change their situation.

It's easy to sit there and say, 'Heh, you have to do something for yourself, you've got to get some other outside life other than (the sport)'. It's easy to tell yourself that but what do you do? You can't just walk out there and say, 'Here I am'. So I think I'm going to have to force myself to go out and join some club, maybe totally outside of sport. That's not easy.

Nine of the twelve married coaches said that both their coaching and their partners/families were important to them. For most of these coaches, it was difficult to say which was more important, their family or their job. One coach said that his position took so much energy that his wife was often low on the priority list. If forced to make a choice between the two, four said that the family would come first. Two of the coaches interviewed left elite level coaching to take a job that allowed them more time with their families. Others expressed concern that their contribution to the relationship fell short of what they wanted it to be.

For some coaches, priorities changed at times as a result of certain life events, for example, achieving a career goal, seasonal variations in workload, overload, having a child, beginning a meaningful relationship, or facing a marital separation. These events resulted

in some coaches re-evaluating their priorities.

I made a mistake when I worked at the academy as the head coach. We were on the court at 5:30 in the morning and I basically got home at 8:00 at night and then was doing planning and other things and I had no break, travelling with the kids (athletes) almost every weekend and it was just disaster. I had no personal time at all for myself or for my partner and there was a lot of strain on our marriage. We didn't exactly break up but it was very close to it and then I had to set my priorities straight, which I ended up doing. But it was just from neglect, not thinking about it, just being abused by other people and wanting to do everything as much as possible.

Although few of the coaches lived lives where the job and the relationship were considered equal in terms of priorities, most of the coaches (n=16) did feel it was potentially possible to achieve balance in terms of excellence in both facets of their lives.

Boy, it's tough. I really think it's tough and I wish the general public understood, I wish Sport Canada (management) understood. I think very few people understand that balance is really tricky and hard to achieve. I don't know how many coaches have destroyed relationships, hurt relationships, lost relationships because it's so demanding. Those athletes, they are almost like wives or partners themselves, they are so demanding of your time, they really take, they really sap the coach's energies physically and psychologically. So that whatever time you have left, you try and put it into a relationship, you're pretty sapped.

Four coaches felt that achieving balance depended on their partner and the nature of the relationship with their partner. Coaches said that their partners were more understanding and giving than they were. The partner's expectation of the nature of the coaching lifestyle was also a factor in the success of the relationship. In a number of cases, the partner either knew the coach when he or she was an athlete or became involved with the coach when he or she was already coaching.

He certainly knew what I was like as a player. When we dated and were engaged, I was playing professionally and really not home much at all. I mean, as a pro, I probably travelled 30-35 weeks (8 months) a year so I think he thought anything less than that was great. So I think he knew what to expect.

Maintaining a successful relationship also depended on open communication between the coach and partner. Another four coaches said that it was the coach who was responsible for making balance possible.

I see myself as a good example. Sure it's not perfect. If I had to categorize 50 national coaches, I'd put myself in the top 5% with being organized and being able to balance both. I think that being a woman plus having a family... and still being able to do it, I feel if I can do it, there's no reason why any of the male coaches can't do it. And if they can't do it, maybe it's because they don't want to do it.

Part of making balanced excellence possible was setting balance as a goal, being aware of what is necessary to achieve it, committing to it and acquir-

ing the personal and organizational skills to make it possible.

You'd better know the responsibilities of this job; you'd better know what it means when you talk about excellence in international competition - that it's a never ending battle and it's going to take all that you have to give. You'd better be able to have the energy to give at the relationship end also; you have two things to love here, your wife and your job....if you're going home every night, where you might walk in the door and talk to your wife for two minutes and then go down in the cellar while she's upstairs working at the sewing machine, I don't think you can be that casual.

Six coaches believed that an individual's definition of excellence and their personal goals determine whether balance is possible. In many cases coaches did not fully understand the parameters of the job when they first took on the position as head coach. One of the key recommendations by coaches was to find out, first of all, what they are getting into when they take an elite level coaching job and secondly, to remain realistic and optimistic about what can be accomplished.

I think I can (have balance), the problem is what we're willing to accept as excellence. And if you've got 90 athletes and you're dumb enough to commit to the job, then you're going to have a lot of sacrifices.

Coaches described a tendency in the early days on the job to do a lot of work for small reward because they were excited about what they wanted to accomplish. With time, and in some cases, after experiencing burnout, coaches re-

alized that what was being accomplished did not match the time and energy that was being invested. It was suggested that coaches need to learn to identify their needs both professionally and personally, accept doing a little less in order to stay healthy and find ways to get extra help.

When I first started this job, I'd do this for nothing....But realistically, you have to survive and support yourself. All of a sudden because of the exhaustion and feelings of exasperation... 'What's the end result? What's in it for me?'. Well, I can be more demanding with the people who hired me. There are things I need to do a good job and also to look after myself as a person.

Finally, three coaches felt that there was a role for National Sport Organizations to play in helping national coaches through salary increases, providing better preparation in terms of understanding the job demands and recognizing the importance of the family's role in the coach's life and success.

I think it (balance) is possible but I think there's a lot of things that have to change. I think salaries have to be higher; I think there has to be more perks....Maybe I could spring for them (family) to go to a nice resort so that they feel they're being taken care of....Here a lot of time they just see the grief we get and how we have to pay for bills out of our own pocket, like paying for phone calls to home when you're on the road, having meetings on the weekend rather than during the week.

For those four coaches who felt excellence in both occupation and relationship was impossible, the majority

said that their current demands made balance unthinkable.

I do not have the demands of a regular relationship that pulls me away. If I did and I had to make a choice, then I would be in serious trouble. So with that stressor not there, I know this is where I want to be, this is what I want to be, this is who I want to be, I have balance within but I've cheated. I'm balancing only the people and things that fit...But should the occasion arise, say it were a person who said that our relationship is such that they were not going to live with this, then you see the true spectrum has come into being and I have to make the choice. And what I'm saying is that there is no way you can balance it. Something has to go, not away but get less of, either your relationship, your health, your team, your mental state, something has to go. So I really don't think it can be balanced....

Conclusions and recommendations

National level coaches felt that their occupation had a definite effect on their relationships. The demands of the coaching profession in terms of time and travel as well as the commitment coaches made to excel in their jobs made it difficult for some and impossible for others to attain balanced excellence in both their profession and their relationship(s). Coaches and their families did, however, act in certain ways that helped them to maintain the quality of their relationship. Balance was felt to be potentially achievable, if not easily achievable, by most of the coaches.

Balance in life is a critical challenge for all those who pursue excellence. We need to take a close look at those exceptional people who are able to

excel in their professions and in their relationships. We need to learn from their perspectives and experiences.

Some of the important lessons that emerged from this study with respect to the relationship include:

1. Find a supportive partner who understands and respects what you do.
2. Care enough to be honest, to communicate and to understand your partner's feelings.
3. Find ways to remind your partner that they are important (e.g., get involved in their interests, know what is important for them).
4. Plan to make time for each member of your family including yourself. Orlick (1992) spoke of four different Quality Time Zones for growth within families: time for you, one-on-one time with your partner, one-on-one time with your child and time together as a family.
5. Make the best of your time together no matter how long or short it may be. Orlick (1993) suggests looking for the good things in your relationship. Most important is being there, men-

tally and physically, when you are with your partner: listening intently, feeling what they are feeling, connecting completely in your interactions and fully focusing on what you are doing.

6. Plan a vacation together that is not connected to work.
7. Limit the intrusion of work on home; to those at home you're a partner/parent not a coach.
8. Plan departure and arrival routines with your partner/family.
9. Remember that to a large extent, balance is a personal choice. Make it a priority and a commitment.

Most of the coaches in this study were not highly successful in achieving excellence in both their demanding professions and their family relationships. However, this does not mean that it is an impossible challenge, as some were capable of balancing excellence in both. We need to find models of balanced excellence and learn from their experiences. We can all gain from their wisdom, as they carry the essence of human excellence.

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A TV Show Host's Performance: An Exploratory Study

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Abstract

An exploratory case study of a TV show host was conducted. The aim was to gain an understanding of the nature of her performance, the mental demands that it placed on her, and the methods she had of coping with these demands. The show host and a close colleague of several years were interviewed to obtain relevant information. The show host's recording day was also observed to provide further understanding, and media clips were used as a source of supplementary information. Results were divided into the following areas: the nature of the performance, performance quality, having a high profile, weekly routines and actual performance.

Background and purpose

The researcher was interested in carrying out an exploratory study of a performer in a field other than sport. A well-known television performer was chosen in order to find out more about what was required of performers in the media. This is a very competitive occupation which places great demands on its performers both in their professional and private lives. What can be learned from the experiences of athletes and applied to TV performers? And vice versa, what can performers in other fields learn from them?

The purpose of this study, therefore, was to gain an understanding of the nature of a TV show host's performance, the mental demands which it placed on her, and the methods she had of coping with these demands.

Methodology

A naturalistic approach to research was used to carry out this study (Lincoln & Guba, 1985). This form of qualitative inquiry was chosen as it helps to build a holistic picture of the issues to

be studied. It also acknowledges the effect of the researcher on the study.

Procedure

The TV personality selected was an experienced and successful Swedish TV and radio performer. As such, it was assumed that she would have had experience with the trials and tribulations of TV performance. At the time of the study, she was recording a show on a regular basis, which meant it was possible for the researcher to observe her performance.

The selected show host was contacted via a mutual friend who told her a little about the researcher and the study that she wished to carry out. The researcher then contacted the show host by telephone to discuss the study in further detail, and to obtain her commitment to the study. This telephone discussion also functioned as a further means of familiarising the study participant with the researcher.

An initial two hour-long interview was conducted at the show host's home. The next step in the process was a

daylong observation of the show host's recording day at the television studio. The following day, the researcher rang the participant and asked questions about her observations during the recording day. An interview with a colleague who had worked closely with the show host for several years was carried out several weeks later. Finally, a collection of media clippings about the show host was read in an attempt to find further relevant information and/or confirmation of information which had already been obtained.

Interview Protocol

The researcher aimed to create an open and relaxed conversational atmosphere in which the respondent felt able to speak freely. It is important to note here that the show host requested the researcher to disguise personal details about her in order to preserve her anonymity. This has been done in such a manner as to respect the show host's request at the same time as producing a case study which does not distort information about her performance. Confidentiality was an important aspect of creating an open atmosphere for the interviews.

An open-ended interview format was used in this study. The researcher had a picture of basic areas to address if the interview participant did not cover them. These areas included the build up to performance, mental attitude/routines on performance days, the consequences of being a public figure, the nature of performance and recovery. A detailed pre-determined list of questions, which would have dictated the direction of the interview and the information gathered, was avoided. Questions came up as a natural part of the flow of the dialogue.

The interviews lasted approximately two hours. Permission was given to record the interviews in order to be able to create accurate transcripts.

Data analysis

The recorded interviews were transcribed verbatim. The transcripts were then read several times by the researcher in order to gain a better understanding of the show host. All gathered information was broken down into relevant themes, put together to form a picture of the show host, and used subsequently to write the case

Establishing trustworthiness

There are four main issues, according to Hanson and Newburg (1992), to be approached when establishing the trustworthiness of a naturalistic study: credibility, dependability, confirmability, and transferability.

Credibility has been established in this case study by using the following methods:

1. Peer debriefing: this study has been discussed with a disinterested peer who has experience of similar qualitative case studies. Discussions involved the exploration of the researcher's biases and her interpretations of data.
2. Member checking: the study participant reviewed the interview transcripts and discussed conclusions from the interviews, observations, and media clips with the researcher. The final version of the case study was also checked and

approved by the study participant.

3. Triangulation by source: this involved obtaining different sources of information in order to check findings. This was achieved by first interviewing the show host, then by observing her recording day when she is under most pressure. Finally, a colleague of the show host was interviewed and media clips about the show host were read.

Dependability and confirmability have been established via an inquiry audit (Lincoln & Guba, 1985). In this study, tutor approval of the description of methods of information gathering and building the case study has formed one part of such an audit. Another part was the auditing of the process and results which was carried out by a peer who was not involved in the case study.

Transferability refers to the ability and extent to which the findings from this case study can be transferred to other situations. In naturalistic inquiry, the aim is to provide the reader with sufficiently rich and detailed information so that she or he may decide whether the information presented in this case is applicable to the reader's situation. In this case study, it has been the intention of the researcher to provide a "thick description" (Hanson & Newburg, 1992) which will help the reader to decide about transferability.

Person as an instrument statement

The researcher is currently a part-time student of sports psychology as well as studying business administration and

economics. She has completed a major thesis using qualitative methods as a part of her business degree.

She has performance experience in high-level sport, as well as in dance, modelling and advertising. As these fields share some similar demands with those of hosting a television show, she was able to use insights gained from experience to help in understanding the current context.

The researcher entered the study assuming that there are parallels which exist between sport and TV performances. She also assumed that not much was being done by television performers to consciously use mental training to help themselves to perform or simply to help their own personal development. Moreover, the researcher assumed that the field of television performance could benefit from the knowledge available in the area of sport psychology.

The case study: A TV show host and her performance

Show host's biography

The show host was born in the 1960s and raised in Sweden. As a child, she was interested in radio, becoming an avid radio listener when her parents rationed TV viewing at home. During her high school years, she took an active interest in producing radio. At university, she worked on the university magazine and at the radio station. During this period, the show host's family, who were somewhat conservative, had expectations that after completing her university degree, she would build a successful career in a traditional manner. These expectations created some inner conflict for the show host when she decided to

follow her interests and began to work in the media profession.

A job at a magazine led to some timely contacts with media figures and a project in radio. Simply by following what she enjoyed doing, she became part of an extremely successful radio program. This success led to other media opportunities. A TV program, based on an unusual idea, was the next success for the show host. By this time, the show host was beginning to be in demand in the media world, and was consequently offered the possibility of hosting a show based on a well-known American formula, for an even larger Swedish TV channel than she was working for before. There was a lot of external pressure placed on the now well-known host to produce the “goods” just as she had done before. As it turned out, the first season was less of a success than first expected. In response to this, the content of the show was adjusted slightly during the summer break. It was in this context - during the show’s second season - that this study was conducted.

The nature of the performance

It’s a performance making this program even if we can always re-film or edit it if we need to. In this show, it’s basically one take. There are about 180 people sitting and watching in the studio and there are a lot of people working behind the scenes. It’s not like I can suddenly say, ‘I don’t feel like doing this right now, I’m off home. Can we do it tomorrow?’.

When the season is in progress, the show host must perform once a week in front of the cameras come rain or come shine. There was a safety margin to be found in the possibility to edit in-

terviews with guests or to re-film, but the immediate pressure to perform in the heat of the lights still remained.

A lot of energy is required simply to keep track of the details involved in being the show host. There are many things which I need to remember - movements, things to say, cameras to look at. I need to think about what I have to do next and what questions I have to ask. My producer is amazed that we never have to interrupt recording because I have said something wrong. I always say my lines right. I am good at that.

One of the show host’s strengths was the ability to concentrate on and remember the many details that led to a smooth and professional performance. She said that her academic background has been a factor which contributed to this ability.

On TV, I need to come over as more professional, sharper, faster and funnier in order to be entertaining. I have created a more well-defined TV character of myself which is quite dry and rational, but funny. It’s an unusual combination which has given me my own niche.

Part of a TV performance involves creating an explicit character which is entertaining and unusual. The host was not really the same person on TV as she is outside the studio.

I have full control over my input and what I have to prepare. I don’t get help with that. I know what it is that I have to do and what I need to prepare. I must emphasize though that I am simply

a part of the machinery. The whole time I have a team backing me up and taking care of most things for me. I am the one who has the good fortune to be seen the whole time and get all the praise when things go well, but also the criticism when things go badly.

Comments from others in the team and observations bear witness to the statement that she saw herself as one person in a team. They spoke of her humility and good attitude towards others in the team. She seemed, however, to forget the rest of the team when media critics wrote bad reviews about the show, and tended to take the full burden on her own shoulders rather than spreading it across the team.

My work affects other aspects of my life quite substantially at the moment. Even though I have the luxury of having long periods when I am on holiday, I feel that when I work I put a lot of time and energy into what I am doing. It is a very uneven workload. It is physically demanding due to the time and concentration required to do the job. I know that every Friday I have to interview a couple of guests. I unconsciously think of these guests day and night in order to prepare myself.

I feel that my relationship with my boyfriend suffers as a result of my work. We record one program a week and this makes me feel that I don't have enough time to do anything else. When I have spare time, I want to spend it with my boyfriend, and consequently feel bad because I don't see my other friends.

She had difficulties prioritizing her free time; she felt that she needed to put more time and energy into her work. This may

have been partially caused by the fact that the program had not been as well-received as hoped, therefore causing the show host to analyse her performance and to think "overtime" of ways to improve the program as a whole. The risk is that this may also have contributed to the creation of a vicious circle - she has less free time, feels unhappy about that, does not perform well and so on. The fact that this had been a step up to a larger TV station and a new program had raised the stakes.

Performance quality

The first two successful programs that the show host was a part of were built on rather unusual ideas which she and several others came up with. They simply created what they themselves felt was fun and interesting rather than trying to find what the public wanted. The show host worked on them because she felt that it was enjoyable. The feeling of surprise about the success of the first two ventures plus not really knowing what she had done to be successful led to difficulties with her latest venture when things did not go so well.

Viewer ratings and critic reviews are forms of external feedback about quality of performance. There were very great expectations placed on this show when it began. The media and critics observed and discussed practically every program and were not generous with their praise. Nor were viewers as numerous as expected.

The show host spoke of feelings of frustration when she and her producer felt that they had a good show, but external feedback said the opposite. She felt that it was very important for her to feel that she had a good program even if

others did not share her opinion. This did not, however, make it easier to cope with the negative feedback which she had been receiving.

The link between external feedback and myself as an individual is very strong. I feel bad when things are going bad. When reviews say that my program is no good, it is me that is no good. I think that this is not only a result of bad self-confidence; I mean it's logical to put the two together. I am affected by this even though I am pleased with what I am doing. I find it very difficult to differentiate between me, the show host, and me, the regular person.

A major problem since starting this new program was the stress caused by negative feedback about her performance. Her self worth as a whole had been affected. She had found it difficult to distinguish between the private individual and the show host, even though she knew that the quality of her performance should not be confused with who she is. It had affected her self-confidence and disturbed her feeling of well-being.

Perhaps one of the keys to performing really well is feeling harmonious and feeling good in the studio when we are recording. It is then that I can be spontaneous and warm, and come up with good questions to guests or make funny comments.

The show host found it difficult to determine precisely which factors contributed to a good performance on her part. She said that she couldn't determine when she steps into the studio whether or not the program she is about to record will be what she calls a "good program". She may feel physically ill or

unprepared to meet her guest, yet still produce a good performance. This she found worrying. She did admit though that there was a greater chance of performing well if she was well prepared, well rested, harmonious and had already met her guests.

I learned voice and breathing exercises from a speech therapist which help in my preparation for recording and to combat stress. I feel that these have been a great help, but I don't always use them in my preparation unfortunately. I have also found that it is important for me to have plenty of sleep in order to be fresh. Physical training has also been a way for me to get stronger physically in order to cope with the pressure from work and has been a means to clear my head.

She had at her disposal tools which she felt were good for her well-being and performance, but did not use them on a regular basis. She was aware of storing stress in her body in different ways such as severe tension headaches, neck and shoulder tension, and the occasional stomach problem. These physical problems have come more often than not when there have been bad reviews or bad viewer ratings.

Having a high profile

When you see me on TV I am playing a role. When I go home from the studio, people on the bus point at me or when I go out to a restaurant, they want to talk to me about the program or something. All these things, this attention and focus on me tend to wear me out because I can't just get rid of it. There are days when I don't feel so strong, on such days I travel by taxi instead of by bus and I stay at home with

my boyfriend instead of going out, or I choose to do something that everybody else isn't doing.

Even if attention was often positive, it was still tiring. It was even more so if it was negative. Moreover, it was not possible to flick a switch and get rid of public attention. As was mentioned above, the distinction between being a private person and a professional becomes hazy - work performance affects the individual "behind" the show host. She spoke of feeling strong some days and weak on others when she did not want to cope with public pressure.

Pressure on the show host to perform had on the whole increased with the new program and with increasing fame. She applied greater pressure on herself which affected her general well-being. The external pressure in the form of media attention and focus on her show and performance had also increased during the past year.

I do feel that it is extremely wearing and tiring to have my own program, where I am the one who is visible and gets all the attention. I have enjoyed it though during the years when things went so well. But when I get bad reviews or low viewer ratings it doesn't really matter if I think that I have done a good job. It affects me no matter what. These thoughts go through my head when I make my entrance into the studio and my audience applauds - I must perform.

There was a tendency for her to take criticism personally when things were going badly even though she was aware that she was part of a team effort and even if she felt that she had done a good job. She expended a considerable

amount of energy worrying about what others in the media and public said about her program and her performance.

I find it difficult talking to friends about this. They can't really understand my situation because they haven't had anywhere near the same experiences. I can talk to my boyfriend, he has some good thoughts, but he is still too much in the thick of things. I need someone to talk to about everything.

Not being able to discuss the issues which are involved in having such a high profile with someone who can listen and have some understanding of her situation made it difficult for the show host to gain the neutral support that she needed. She lacked a coach who usually fills such a role for athletes.

Weekly routines

I am a very rational and logical person. I try to set up a pattern for how my week looks and stick to it so that every week has the same appearance. I see the build-up to recording days as a weekly unit. I have Mondays off and the week really begins on Tuesdays. There is a slow but sure build-up of energy which is directed towards that hour on Fridays. The energy is more a matter of being prepared, feeling safe and secure in myself. I know my stuff so well and I know exactly what I am going to do. I have read up about my guests and can put everything aside and simply be curious. I do have a script with me because I do get nervous when I'm sitting there.

The show host and other sources constantly emphasized how rational she was and how she wanted control. She said that this need for control was both good and bad. Good, because it enabled

her to plan her work in the manner that suited her and gave her a feeling of security as a result. Structuring her work and time in the way that she did was also a means of controlling stress. The structure also contributed to her professionalism and reliability. The need for control was bad in that she felt that it made her too rigid and decreased the possibility to be creative and spontaneous.

Tuesdays and Wednesdays were quite relaxed days for the show host. They marked the beginning of the mental processes which built up to performance on Fridays. There was little feeling of pressure, and time was not quite as precious as it was later in the week. It was the lower rung of the ladder of stress where Friday was the top rung. The show host spoke of enjoying Fridays and that they felt good because everything became so much more concrete.

Tuesdays involved a variety of tasks such as: team evaluation of the previous program, brainstorming of ideas for the program on Friday, and preparing background material about guests for the show host to read. The show host may have also booked a meeting with a guest as part of her preparation.

Wednesdays were occupied by recording of segments which were later slotted into the Friday program. The show host saw Wednesdays as being rather relaxed, pleasant days, because she just had to go where she was told and follow orders.

Thursday is the day before recording. It is really first on Thursdays that the program is beginning to take shape in our heads. In some ways it feels good

because it's soon my time to perform. At the same time, however, I am more difficult to deal with. I don't usually want to meet my boyfriend on Thursdays and I am more easily irritated or angry because there is no longer room for mistakes. On Tuesdays we can play around and waste a bit of time, but by Thursday it's important that things work. I leave the office at Thursday lunchtime and spend the afternoon working at home. Being at home allows me to increase my feeling of control of the situation. I can turn off the phone so that no one can disturb me. I sometimes have a sleep in the middle of the afternoon and then continue working after that. I see this as a simple concentration exercise which gives me a little breathing space and peace of mind. Thursday afternoon is important for my focus and build-up to recording the following day. I use this time to start physically concentrating on the program. I write out a program of how the recording day is going to look in detailed point form. Some aspects are very long as they include questions to guests or comments I'll make at certain times.

The feeling of stress was building up by Thursday and the show host was aware that she tended to express this stress with people around her. Her Thursday afternoon strategy was an important one, because it helped to build up her concentration, focus and feeling of control of the situation. It was also a means of getting rid of external sources of distraction. Other sources consulted bear witness to the fact that she was at times easily distracted and could get carried away with irrelevant matters.

Performance time

There is a clear pattern for how Fridays work. I don't have to be at the studio until mid-morning which is great as it gives me the time to start the day in a positive, relaxed manner. Otherwise, it's usually quite a busy, stressful day when people in the team are occupied with their tasks.

Once again the idea of structure and predictability appears in order to create a feel of control of the situation. The show host had found, by experience, the recipe for a harmonious start to recording days. She had a genuinely positive approach to Fridays and appeared to enjoy them even if she felt a little nervousness.

There seemed to be few spaces during the day once she arrived at the studio. She attempted to get into the calm of her dressing room in order to read her script and to focus herself several hours before recording. This was not always successful though, due to the many activities which were sandwiched into the hours prior to program start. Vocal chord warm-up was on the "To Do" list, but that was not always managed.

I feel that most of my energy goes towards looking cool and calm on the outside in front of everybody else.

Despite her calm surface, the show host became more stressed as performance time came closer and closer. An increase in the speed and amount of physical movement during the day was noticeable. She also admitted to using physical movement to increase her arousal level. On top of this, she hummed away or talked to herself out

loud to pep herself up more frequently as recording time drew nearer.

There are times when I perform that I feel that I am not totally harmonious or in control. I feel slightly stressed or unfocused; I am not really listening to what my guest is saying. Perhaps I feel nervous sitting there in the spotlight or maybe I might say to myself when I am sitting there, 'This is no good. I have got to do something about this. What shall I do?' What usually happens is that if the show starts well, it just gets better and better. If, however, I have a guest who is not on the same wavelength as me, things can get a bit stiff and forced. That affects me negatively for the rest of the program.

The few times when she became unfocused could affect the rest of her performance. It must be said that in general, once the show host sat in front of the camera, she was extremely focused on the task at hand and was a very good performer.

There are many times when I have felt physically and mentally exhausted a whole weekend after performance.

She did not, however, have any physical or mental routines to review her performance or to aid recovery. Nor did she have any specific plans for what happened after recording.

It's not always easy to steer what happens, like if there's a party on or someone wants to go out. If things went well, I want to go out and have fun. If things went badly, I can feel pretty annoyed or negative. These are two sides

of the same coin, but the energy can go in two different directions.

Her activities after the show were influenced by how she felt the show went. Her own feeling during recording plus the producer's opinion dictated whether or not she felt things went well. There were times when she felt that it was a good program, but her producer thought that it was not. She admitted to being influenced by his opinion and that her opinion had often changed according to what he said. This in turn affected activities after recording.

Summary

The show host followed her interest in the media. She began a successful career first in radio and then TV after completing her academic studies. Her latest venture, hosting a program on a large Swedish TV channel, has proven to be a challenge, as it has not been immediately received as well as expected.

Her performance involved creating an interesting character who hosts a TV program. She had to pull together a lot of details in an entertaining manner, in front of a studio audience and a large technical team. Even though she is part of a team who works on the program, she is the most visible team member who tended to take the brunt of both the praise and the criticism for the show. Preparation for the show took up a lot of her time and energy during the season which has meant that she had difficulties prioritizing other aspects of her life other than her work. This affected her private life considerably.

The feedback she received as to the quality of her performance came in the form of viewer ratings and critics'

reviews. She has felt satisfied with her program and her performance, but has received quite negative external feedback during the first two seasons. This has led to decreased feelings of self-worth and has negatively affected her well-being in general. She had at her disposal several tools to improve physical well-being, but did not always use them.

It was tiring being a person with a high profile; it was not possible to flick a switch and get rid of public attention. She felt that she had no one who understood her situation.

She structured her week in an orderly manner in order to increase her feelings of control of the situation and to decrease stress. Through experience, she had, to a certain extent, created routines which work for her.

When it came to actual performance, she was good at focusing on what she was doing and performing in a professional and successful manner. She worked hard at appearing cool and calm in the hours close to recording, even if she felt nervous inside. There were many times during the past year when she has been physically and mentally exhausted the whole weekend after recording.

Discussion and conclusions

The researcher believes that many of the issues faced by the TV host are also experienced by athletes, even though the nature of actual performance is different. Perhaps one of the differences between a TV performance and a sports performance is that in the case of the former, it is more difficult to obtain objective feedback about performance quality. This can lead to a psychological

problem for the performer if she herself believes that she is performing well, but external feedback says otherwise.

The nature of the profession also provides performance challenges. Television is very trend conscious, and follows what is happening in other media and society at large quite closely. Seeking outward approval and wanting to be hip or trendy could create problems for a performer such as the show host in this study. Her self-worth and well-being become linked to being “right” in other people’s eyes. Superficial characteristics become more important than the core of the person.

In sport, it is pretty much unthinkable for an athlete or a team not to

have a coach. Some similar form of external support in the form of a mental coach for a TV performer would also be valuable. This person could provide a listening ear and be able to help the performer with mental training which would then provide her with skills to perform better professionally, and as a bonus, aid her self-development. Even without such a coach, a more explicit focus on the mental side of performance would be a great help to TV performers.

The show host requested that the researcher complete this paper with a note saying that she and others felt that since this study was conducted, her television show had flowed better and that she as a host gave a better performance.

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The Essence of Excellence: Mental Skills of Top Classical Musicians

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Abstract

The purpose of this study was to use Orlick's (1992) model of excellence as a framework for studying elite classical musicians. The picture of excellence which emerged included such aspects as: a deep commitment to music and/or excelling, non-materialistic goals, a strong sense of self, a positive perspective based on continued growth and learning, and an abiding love for and enjoyment of music and music-making. Musicians also considered creativity, spontaneity and flexibility to be the foremost prerequisites to performance excellence. A refined performance focus allowed the musicians to translate this essence of excellence into consistent high level performance.

Introduction

In recent years, as more emphasis has been placed on improved performance, the demands placed on performers have increased. Concomitantly, there has been an increase in interest in the psychological aspects of excellence. The domain of music has been no exception to this trend (Ericsson, Krampe & Tesch-Römer, 1993; Fogle, 1982; Green & Gallwey, 1986; Grindea, 1984; Hanson, 1992; Lipton, 1987; Lorenzi, 1993; Molo & Ness, 1992; Reubart, 1985; Ross, 1985; Whitaker & Tanner, 1987). However, stage fright has been the main focus of the literature (Grindea, 1984; Reubart, 1985) and mental preparation, on the whole, has been seen largely as a remedial approach for dealing with incapacitating performance anxiety. Thus, this study represented an attempt to provide a more holistic view of performance excellence from the viewpoint of elite classical musicians.

The main purpose of this research was to explore and document the mental factors related to excellence of

elite musicians. Orlick's model of excellence (1989, 1992) was selected as a suitable framework as it presented a comprehensive approach. The model considered self-belief and commitment to be the foundations on which five other aspects of excellence were based: ability to focus, use of visualization, ability to control distractions, ability to evaluate constructively, and mental readiness, a general construct which includes planning ability and willingness to learn. This framework helped develop the interview instrument. A secondary purpose of the study was to assess the relevance of Orlick's model (1992) to the performing arts, namely, elite classical musicians. This article is based only on one aspect of the complete study, namely that which was considered to be the "essence of excellence" for the musicians interviewed.

Methodology

Subjects

Internationally renowned soloists in the field of classical music served as

subjects for this research. Participants were selected on the basis of their reputation for excellence. Criteria used to judge excellence included:

- musicians' participation in international music festivals (e.g., Salzburg, Tanglewood, Bayreuth)
- having been a guest soloist with orchestras of international standing (e.g., Berlin Philharmonic, Vienna Philharmonic, New York Philharmonic)
- having made at least three recordings on national labels
- playing as a member of a world renowned chamber music ensemble
- efforts were made to interview string and wind players as well as pianists.

A list of the names of all artists interviewed (n=30) was given to ten professional musicians along with a list of the criteria for selection. They were asked to confirm the subjects' level of excellence. Of the thirty, sixteen were considered by the panel to meet the criteria. These sixteen musicians represented the sample for the study.

The musicians ranged in age from 15 to 54 years old. Thirteen were male, three were female. Ten musicians were string players, four played wind instruments and two were pianists.

The Interviews

Participants were interviewed using the Musician Interview Guide, adapted from Orlick and Partington's Athlete Interview Guide (1988). This guide consisted of 25, mostly open-ended questions and examined such ar-

reas as goals, practice routines, preparation for performance, focus during performance, best and worst performances, enjoyment, and potential recommendations for novice musicians.

Most of the interviews were conducted during two international festivals in Austria. Interviews ranged from one hour to two and a half hours. All interviews were tape-recorded in their entirety, and verbatim transcripts were made from the recordings. Five transcripts were sent back to artists for authentication of content. The five participants confirmed that the transcripts represented what transpired during the interview.

Analysis

Transcripts were qualitatively analysed. Initial readings of two transcripts resulted in preliminary tags being made (Wentzell, 1986). Tags with similar meanings were grouped to create categories following the procedural guidelines outlined by Coté, Salmela, Baria and Russell (1993). A meeting with another coder experienced in qualitative studies was held in order to clarify and agree upon the category labels used, and two further interviews were subsequently analysed. Categories were enlarged and other categories were added to capture ideas not previously expressed. This process was continued until all interviews were analysed and "theoretical saturation" had been reached (Glaser as cited in Coté et al., 1993).

All sixteen interviews were thoroughly re-analysed using the final list of categories. An independent assessor was then given descriptors of each of the categories and was asked to analyse two transcripts using the list of categories.

Inter-assessor reliability was high (92.7%).

Results

The purpose of the research was to elaborate on the “essence of excellence” as it emerged from the interviews. This essence included: a deep commitment to music and/or excelling, non-materialistic goals, a strong sense of self, a positive perspective based on continued growth and learning, and an abiding love for and enjoyment of music and music making. Creativity, spontaneity and flexibility were considered by musicians to be the foremost prerequisites to performance excellence. A connected focus during performance allowed musicians to translate this excellence into consistent high level performance.

Commitment

It was clear that elite musicians were highly committed to their musical pursuits. Those interviewed had made music the focal point of their lives even if they had families and/or other interests, and this commitment was made very early in their lives. Commitment was clearly one factor that determined whether participants achieved their full potential with their chosen instrument.

The musicians’ involvement with music had started very early and by the age of fifteen, 88% had already made the decision to pursue a career in music.

(Began learning instrument at 10)...a little while later, one or two years, I got really bad in school because I wasn’t learning any more. I wasn’t interested in anything else any more and was just fixated on playing.

...when I became 15, I switched to (present instrument) and was captivated. I never really did something that I didn’t like to do and I never liked to study so...I lived to practice though....When I was in college, I practised even more...10 hour days of practising, and I was always having to take time off if I had an important concert coming up because I was practising so much that my lips were like, worn down to a frazzle...

For fourteen or the sixteen musicians, music was still the focal point of their lives.

I came to the conclusion that music and all that pertains to it...that’s the most important. Everything else will have to, not submit to it, but fit it somehow.

Very few people are privileged to combine their profession with their hobby...something that they love more than anything else. Music is the most important thing in my life...music is my whole life.

Goals and Dreams

All participants readily talked about their dreams and aspirations concerning their music. These goals could for the most part be divided into three distinct subcategories: self-growth or personal excellence goals, goals concerning the music itself, and a strong desire to express feelings with their music or to give something of themselves in their interpretation of it. Some of the musicians also talked about how their goals had changed or evolved over the years.

Nine of the sixteen musicians interviewed felt strongly that music gave them an opportunity to grow, to be the best they could possibly be or to better themselves.

I have only one long-term goal, I always had it: through the music, through the study of music, to develop, to discover myself, my personality, and to grow.

...I want to be a very good musician. I think that's the only aim a musician can have.

You want to play as well as possible. That's enough. You spend your whole life with this one goal because somehow, you always fall short of what you imagined.

For nine of the musicians, music itself was a top priority. They had aspirations of interpreting the music as well as they possibly could, of respecting the composer's intent when interpreting a piece and/or of understanding the music more and more.

When I practice, when I learn a piece, I always feel very much respect for the work. I would like to be an honest interpreter of the thing I want to play. I think the rule of an interpreter must be to try to be as honest as possible regarding the composer. So, this is a very big goal.

I try to keep it very clear - the instrument is only a vehicle and the main goal of my existence, as an interpreter, is the music. The instrument just helps you express...Sometimes, priorities get switched around, music becomes a vehicle in order to show...how wonderful

they can play that instrument, how fast, how clean, how loud...It's the end of my profession in my opinion. The most important thing, the music, gets to be secondary.

I only know that this is necessary in order to do the music justice. You must learn to give yourself completely to the idea behind the music notes. There is always an idea, a tone quality and you have to be always freer and more knowledgeable to be able to interpret it properly. Purer somehow.

For many musicians, music was a vehicle to communicate with the audience or with their colleagues (e.g., when playing chamber music). Seven musicians expressed goals in these terms.

*It's very hard to explain, but I think it's...all what you feel; you have to...express it. To let the people feel what you feel....So all that you think, all that you want to express, that's it really - that the people really can hear it - not just that **you** feel it. Because you have to put it across.*

Self-growth, doing justice to the music, and communicating feelings encompassed most of the general goals or dreams that drove the elite musicians to even higher levels of excellence. It was interesting to note that goals were not expressed in material or competitive terms at all. Only one participant was clearly materialistic in his approach to music because of his problems and general disillusionment with it. Four of the musicians interviewed insisted that it was wrong and/or impossible to live by materialistic goals in their profession.

(Those goals)...have nothing to do with the music itself...I must say honestly that I'd rather play at home to my heart's content than say I can play in the best concert halls of the world and it's (the music) not as good.

There are people who dream of worthless things- he needs a Mercedes or whatever - material things. I try to give them (students) more idealistic dreams, that they dream of the music, what they can do with a piece, to develop a certain ambition from these dreams.

I combine enjoyment with my profession which I think is my greatest ambition....because I don't believe in 'Mr. X', the number one cellist or violinist or pianist in the world and the greatest. I don't believe really that such things exist in the music anyway...what does it mean number 1, number 2 or whatever? You could say who is the most famous maybe, or the best paid, yes, o.k.. But the greatest? It's a matter of taste anyway.

Another five musicians pointed out that these more materialistic and/or competitive goals were more often a strong motivating factor when a musician was young. In the early years of learning an instrument when so much of the work is mastering the technical skills required to play, they felt it may be necessary to have such goals because one is not yet able to see the broader picture - the music.

Children don't see so far in advance. My goal as a child was to get out of (a former communist country) and the way to do it was to get to be so good with my instrument that they'd allow you

to go to competitions. That's what I did. Later, the goals were always more concrete...career oriented goals. Anyway, I think that goals change a lot with age. When you're young, goals are determined by the need to measure yourself with others. Later, this becomes boring...the goals change, they become more related to the music itself.

The goals of the elite musicians remained idealistic even after many years in their profession. Their love for and commitment to the music remained strong. It is interesting to note that for at least four of the musicians interviewed, their commitment to excelling and/or making beautiful music transcended the commitment they made to their instrument.

I love my instrument and I think it has fantastic qualities, but so does any other instrument...music is more important.

Sense of self

There was no doubt in the musicians' minds concerning the importance of having a strong sense of self in order to survive in their chosen profession.

It's like in sports, self-confidence and security are two of the most important factors. If you approach something with fear and think 'Now I have to play this', I'm only able to function at 40 to 50 percent of my abilities. I always have to think, 'I can do everything'.

I believe there is enough space for many different kinds of musicians and I have my own qualities even though I know that some colleagues have some other qualities which are stronger than

mine. But, I have something that I want to say and people want to hear.

This belief that a strong sense of self was very important, even necessary, in order to excel did not always translate into unwavering confidence in one's ability to be the best or play one's best. Most of the musicians interviewed appeared to experience some fluctuations in their level of self-confidence.

You think, 'I hope nothing goes wrong!'...Of course, then the self-confidence comes in: 'You can do everything'. It's a constant up and down...I think that when I'm playing on the stage, then the confidence wins.

Some musicians felt that while a strong sense of self was important, too much of it could be detrimental.

I find that humility is one of the most important things in your approach to music. I can't say any more than that. You have to defer to music and not have the feeling that you have to make the music. Humility in the face of something really great.

Self-esteem...is a condition that everyone wants to have because they associate it with inner strength. I aspire to it but...I don't think much of having self-esteem and nothing else...I have a picture in mind of a child who plays totally without self consciousness...open to everything in the world. When this child would say, 'I have self-esteem', he would get all caught up in himself and couldn't play any more.

Self-effacement is a very interesting concept raised by the musicians. It reaffirms the musician's belief in and

commitment to music. Self-effacement and a strong sense of self were not mutually exclusive. On the contrary, one must have a very strong sense of self to have the courage to forget oneself and focus on the music.

Perspectives for excellence

As a result of listening to these elite musicians talk about their goals and aspirations, their approach to music, as well as the focus they aspired to attain, it became clear that they carried some common perspectives into their musical endeavours. First, they viewed playing music as an on-going developmental experience and as such had goals of continued growth. Second, they felt that it was important to keep the "big picture" in mind. Third, they were positive thinkers. A fourth perspective for excellence raised by a limited number of the musicians interviewed was a feeling of being in control of one's self or one's life, while accepting things that could not be changed. With the exception of one musician, who had given up his career aspirations, they viewed their work as an opportunity for self-growth, and they felt that one should never stop learning.

Opportunities for self-growth and lifelong learning

Most musicians commented on the fact that they greatly enjoyed learning and looked for opportunities to grow in their music and other areas of their lives. They constantly sought out opportunities to play with different and better musicians in order to continue to learn. They felt that they were always growing and learning, and that any given concert only represented a stage in their development, not their last word on a given piece of music.

Above all, I hardly think that there is someone who can claim to know everything. He'd have to be at least 500 years old....Everything is relative and that's why I say you have to be flexible, you must be like a chicken pecking corn - I need this, I can learn something here, I can benefit from that, I can contribute there....Everywhere kernels are lying around. Some eat everything in sight and have nothing from it. Others won't touch anything. You have to find out what kernels you need.

When I think of future life about music, I like to see it with no arrival point. Like a road, you always have to keep going, I like to think that when I will be old, it will still be going on.

You have to be open, to play with different people - that's my leitmotiv, always play with better people....Always something new from pianists, from violinists, from winds...you always learn something. I believe that's very important.

I always hope that my best concert is still to come! If I feel one day that I have played my best, I'd probably quit, change professions....I don't think I ever will feel this way because I feel that there's an unlimited amount of feelings.

Keeping sight of the whole picture

Generally, musicians felt that the "big picture" was the process of ongoing development and the pursuit of their long-term goals.

Events are important milestones, but in music, you have so many events (concerts) that there's no point in focusing on every event exclusively, you

should really focus on the developmental side and see the big picture....That takes a little bit of pressure off. You can feel more relaxed, that you are working towards a long goal....

The big picture was also felt to be important in the music itself. Musicians felt that there was sometimes a danger of concentrating too much on minor details in a piece and thereby losing sight of what the piece was all about.

At first, you have the whole picture, that's the music. Then I start to cut it up or take it apart, pieces at a time, to turn them over and look at them closely...totally apart from the music actually. You don't even know where this part fits in the whole...I know earlier (when the musician was younger), I found it extremely difficult to put it together again. Today, I try not to lose the whole picture from the beginning even as I am taking it apart...to keep the music whole in my head. Even if I practise a tiny little piece, I try to slip it back in where it belongs at the end.

...there are different kinds of lenses which you can use and two major kinds are the zoom lens and wide-angle lens. So, I think...I kind of upgraded my assortment of lenses. When I was young, I was using the zoom much more you know, to zoom in to little details of music and play this little phrase more beautiful or whatever. Now, I use a wide-angle lens more often, together with the zoom, to try to see the whole long line in the music...which is, finally, most important because those little things are important too but they still are secondary, and the shape of the music and the long line is, in my opinion the most important.

Not losing sight of the big picture in terms of the music itself, obviously has important implications in terms of the focus and perspective musicians want to carry into a performance.

Positive thinking

Ninety-three percent of the musicians shared a very positive attitude. They were optimistic in their approach; they always tried to see setbacks and/or mistakes in a positive light, they learned from them or even used them as a catalyst to performance excellence.

Every once in a while we'll miss a note....I try not to think of it. It's gone. And if it happened in a solo concert, I'm always relieved because now, I can play better.

(About a not-so-good concert) It was very upsetting for me, very disappointing. But, in a way, it was good to recognize I have to change something. It was one of the best things that happened to me...It's good it happened at that time, at the beginning; I had more time to do better.

Mistakes or difficult situations (e.g., when conductors made mistakes) became opportunities to be even better or to take control and to make it all right again. Similarly, stage fright or pre-performance nervousness was accepted as normal, or even viewed in a positive way.

Of course, there's always stage fright, and it's always there, but, for me, it's a thing that inspires me more than anything.

Conductors get a bit haywired! That's quite exciting too...it frees you to

play even better because you're not thinking about yourself.

Feeling in control

Another component of what might be considered a perspective for excellence which surfaced in a number of interviews was a feeling of being in control of one's life or one's destiny, accepting the things one does not have control over, but working hard at changing what you can. For example, one musician refused to accept the view that he was the victim of a non-receptive audience.

Because you have them (the audience) in your hand, you're the one to make them attentive...Only for very special performances would they all be together, euphoric and all concentrated....Usually, they are all over the place and you should consider that there are many individuals sitting there, that you have to gather them! You can gather them yourself or not!

Another musician accepted that he was not in control of some things, such as winning a competition. He went in to the competition to do his very best and hoped to win, but realized that he was not responsible for that part of it.

Of course, if you play a competition, everybody wants to win. Or, he hopes to win. When I played my competition...I didn't think, 'I have to win otherwise'..... But I thought, 'Just do the best and (the rest) doesn't depend only on you.' It doesn't depend on you if you win, not only on you. When you play your best, then you can be pleased.

Enjoyment

Musicians were asked whether their enjoyment of playing had changed over the years. All but one participant said that they enjoyed music at least as much or more now than in the early years.

Generally speaking, unless I feel lousy...physically or whatever, I enjoy playing...usually it's a festive occasion. I am nervous of course, but in a kind of positive way, because I enjoy it and look forward to it.

For the most part, the increase in enjoyment came from feeling that they knew more or understood more about music now, that they appreciated it more or that they had extended their horizons by including new music.

I've got more (enjoyment). A lot more! I've learned to enjoy the moment, to create in the moment....I started really enjoying it now. Now, at this time, it's optimal because I really enjoy seeing that I'm getting something across.

(The enjoyment is)...more intense now. Because I think I understood much less before about what I was doing....

It changed a lot. A whole lot...I always enjoyed it a lot, but now, I'm like addicted...I'm really addicted.

In summary, similar to the findings of Barbour and Orlick (2000) in his study of the mental readiness of professional hockey players, enjoyment of their profession seemed to be determinant in elite musicians' readiness to perform and excel. Musicians interviewed greatly enjoyed playing and making mu-

sic. For a majority of musicians, years of hard work had not in any way diminished their enjoyment of music; on the contrary, it had increased and intensified over the years as their levels of expertise has risen. They felt that they knew and understood more and loved it even more.

Concentration/focusing

Musicians discussed their preferred pre-performance and performance focus during the interviews. Musicians felt that concentration was a necessary element of excellence and that having the right focus was a determining factor in a quality performance.

Concentration is the thing you have to learn first and foremost....You have to guide them (the students) so they learn these things. Discipline is also a ground rule of the ability to concentrate, that you have to learn to turn off whatever thoughts are going around in a circle. These are very important. There are many things going through your head and you must see to it that these things bring you to one point and you leave the others.

The musicians interviewed pointed out that the kind of concentration they were seeking could not be forced. It was "there", or just happened if they connected properly with the music, and if one tried to force it, one would lose it.

It's a prerequisite, but if you try to have it, if you pursue it, then it's an obstacle. Only as long as it's not forced and not willed, but is just there, is it helpful. But then it's very helpful.

These musicians considered concentration an essential element of excel-

lence, something one could never hope to perform well without. However, they recognized concentration more as a frame of mind or a mental state than anything else. The ability to choose the right focus or enter the right frame of mind, and control distractions to regain the desired focus was considered highly important.

Inner qualities required to excel

In the course of the interviews, the musicians often referred to the qualities they felt were necessary to excel as a classical musician. They also talked about what they felt made them excellent. The basic elements of excellence proposed in Orlick's Wheel of Excellence (1992) were evident for these top classical musicians including commitment, belief in the meaningfulness of their pursuit, mental readiness for learning, full focus, positive imagery, distraction control, and constructive evaluation of their pursuits.

However, three additional inter-related qualities/skills were viewed as adding enormously to musicians' "big picture" of mental readiness for excellence: spontaneity, creativity and flexibility. None of these three qualities were mentioned by Ericsson et al. (1993) in their discussion of the differences between expert and eminent musicians, yet the musicians interviewed consistently referred to them as "making the difference" between a good and a great musician. Indeed, many would have called "talent" a combination of creativity, spontaneity and flexibility.

Spontaneity and creativity

It is very difficult to separate spontaneity and creativity. Creativity appeared to be a process that musicians

described when they talked about visualization, imagination and/or musical interpretation.

Musicians took up a new piece, learned it, and then lived with it. They drove around with it on the train, tram or car, carried it into every situation of their lives, and even took it to bed with them. What eventually came out in a concert was a personal expression of the feelings and emotions that music had aroused in them, refined and perfected by the hard work of preparing the piece technically on the instrument. This appeared to be the creative process of the artist at work. Spontaneity was interpreted as being the musicians' openness to the creativity of the moment, expressing impulses or inspirations as they were felt or experienced during a performance. Musicians valued creativity and spontaneity and felt that it was these elements that could make their performance special.

A lot is automatic...even the phrasing is automatic...it's the slight improvisation that you sprinkle above the skill...that you do differently from what you've learned or studied about the piece. There's something extra there that you didn't do at home when you were practising. It comes in the concert but you can't explain it. It comes from talent, from the desire to lay something personal down on the table. These things play a big role - the situation of the moment and the creativity, the stimulation of creativity is so determining.

I've learned to enjoy the moment, to create in the moment. Something you can't practise beforehand or rehearse beforehand! The conditions are to be well prepared, be physically fit and not to have done too much. If (these factors)

are positive then, playing is a lot of fun; you just start and it just happens.

Musicians felt that they must protect and nurture these qualities. Eleven of them said that they did not like to do too much repetitive work in practising, or in rehearsing just before the performance, or in playing the same concert too many times in a row.

I'm not one of these people who think I have to play this passage through 400 times when I practice so that I'm guaranteed that it's perfect that night.

I don't like to practice like a machine...There are people I know, they are very good because they practice a passage maybe a 100 times and then, they are very good because it's like a machine, it's automatic. I don't like this very much and when I practice, I try to put new ideas in what I do, not just move my fingers.

If you're on tour, you have to play the same concert 10 times in a row, the same program. Every night, you have to be playing like it was the first time. It's very difficult...When you do a thing over and over again, there's an automatic that sets in...That's why this kind of routine work is not good for us.

Fourteen of the sixteen musicians interviewed felt that spontaneity and creativity were prerequisites to excellence in their field. Creativity was defined as the process of interpreting a piece and making it into a personal expression. Mental imagery or visualization was the major tool by which this process was achieved. Musicians lived with a piece in their mind for such a long time that it became a part of themselves.

Spontaneity was very important for the musicians. They also referred to it as inspiration or improvisation. The biggest danger to spontaneity and creativity was seen to be routine or repetitive work. While repetition and perfectionism gave security in automatization, musicians felt that it destroyed creativity and spontaneity.

Flexibility

If spontaneity was being open to the creativity of the moment, flexibility could be seen as being open to the dynamics of the situation.

Not as many musicians talked about flexibility directly, but it was viewed as essential to achieving excellence in music. They talked about the importance of not being so set in "instrumental habits" when going into rehearsals that they could not see a better way of doing things when presented with one.

It's better to practice less than too much. Spending too much time with the instrument and being too concerned, too busy with solving technical problems and repeating again and again technical things is rather dangerous because unconsciously...you get a certain routine and you get certain instrumental habits that become hard to change.

It may sound stupid, but I hardly ever practice the parts for a string quartet ...I always have the feeling that if I practised my part exactly then I'd be fixated in it. I'll have drilled it into me. Then I can't be flexible when I play with the others. They'd have to go with me constantly. But so, I can still be open, I can mark the notes during the rehearsal: 'Aha, maybe that's a good way of

bringing this out!' ...But when I say, 'It's the only way to play this' - maybe it doesn't sound so good when you mix it with the others.

The musicians spoke of flexibility in terms of being open to what was happening during a performance and going with the flow rather than trying to fight it.

*I taught myself to let a concert develop. At the beginning, I'm not quite so tense any more or aggressive: 'This **must** be good'. No! Consciously I just let go at the beginning. I wait and see what will happen, how the atmosphere is....It helped me a lot because it's the only way I'm in a position to control the piece.*

*I depend on the 'now', on the hall, on the acoustic. When I can go with that, I can get 'in'. On the contrary, if I try to force something so it's like I imagined - that's how I practised, that's how it must be - then I don't come into what happens....If I don't accept the conditions as they are **now**, it means I'm out.*

Being flexible was also implicit in the musicians' perspective for growth and continuous learning.

I've always been someone...if I say today this is black, it doesn't mean that tomorrow I'll still say that. You know, there are ground rules, but also there are always things where you must be willing to revise yourself. I can't swear that when I said something is like this 20 years ago, that I'll still say that today. Then I'm stupid, inflexible and have no possibility to develop! As long as I'm not totally calcified, I'll still try to

throw everything on it's head, not to let it set in cement. That's very important.

To summarize, flexibility was the third interrelated quality that musicians considered necessary in order to excel. Although only five musicians talked about it directly, flexibility was added to the list of skills/qualities required to excel because it seemed implicit in the musician's attitudes: in their perspective for excellence; in their willingness to forego a very detailed pre-performance routine, preferring to settle for some broad or general perspective outlines; and, in the mental state they wanted to carry into a performance.

Conclusion

The picture of the "excellent" musician that emerged from this study was that of a person clearly dedicated to music and to personal excellence with the chosen instrument. He or she was committed to achieving his or her goals, and as the performer grew, goals evolved and became more visionary in nature.

A strong sense of self was essential in order to withstand the pressures of the high profile career of a musician. He or she maintained a very positive perspective based on growth and continued learning, and a feeling of being in control of his or her life. A final component of this healthy perspective might be described as open-mindedness: being open to inspiration or to the creativity of the moment (spontaneity), and being open to the dynamics of a specific situation or performance (flexibility).

The ideal focus going into a performance was in the "here and now", on living the experience of the concert and

letting it happen, concentrating alternately on the big picture of the music or on specific technical details of playing as required by the demands of a particular piece.

Other specific mental factors such as refocusing, mental imagery and

constructive evaluation (Orlick, 1989, 1992) were important tools used by elite performers in order to achieve and maintain high levels of excellence. These and other themes pertinent to performance excellence among musicians are discussed in the complete report of this study (Talbot-Honeck, 1994).

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Modelling Mental Links to Excellence: MTE-1 for Quality Practice

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Abstract

We developed the Mental Training Exercise (MTE 1) in response to requests from athletes to provide them with a convenient way to understand, acquire and/or fine-tune their mental skills in order to improve maximally from practice and compete at their best. Our collaborative, deductive procedure involved developing items from our pooled experience from working with high performance athletes. The MTE-1 comprises thirty-nine items which provide concrete behavioural representations of four types of mental skills (commitment, goal setting, imagery, and attentional focusing) which characterize the approach to quality practice of successful athletes and performers. By symbolically modelling important mental skills, and by providing self-rating scales for each, the MTE-1 enables athletes to assess their own mental skill strengths and deficits relevant to maximizing their practice gains, and ultimately to maximizing their competitive performance. Consultations with high performance athletes and some developing athletes and dancers over the past four years has confirmed the utility and perceived meaningfulness of the MTE-1. Moreover, evidence of its reliability and validity has also been accumulating. This research has also shown that the MTE-1 is easily modifiable for use with various target populations. A complete copy of the standard MTE-1 is provided.

Introduction

This article describes why and how we developed our MTE (Mental Training Exercise), an inventory that models the mental links to excellence. This article (MTE-1) focuses primarily on mental preparation for practice. The article on the MTE-2 in the subsequent issue of *The Journal of Excellence* focuses primarily on mental preparation for competition.

We undertook the creation of the MTE cautiously, almost ten years after our Olympic study (Orlick and Partington, 1988), because we knew that most athletes prefer to spend quality one-on-one time with consultants, interacting in meaningful ways rather than responding

to standardized inventories. They appreciate the consultant's presence at some practices and competitions and want that person to be available to listen and to offer practical suggestions for improvement. Both the authors and athletes are opposed to distributing non-practical inventories (Partington & Orlick, 1987). The circumstances that we faced demanded that we create something practical and meaningful. Elite athletes we were working with were seeking a model of excellence to which they could compare their own mental skills. Plans were also imminent to establish Athlete Assessment Centers to which groups of national team and developing team athletes would be sent periodically for a short period of time to receive complete sport

science assessment with relevant practical feedback.

Our challenge was to develop a strategy to accommodate larger numbers of athletes in limited time, while preserving the individualized, discovery approach which we know works best with athletes (Orlick & Partington, 1987). We hoped to expedite self assessment and feedback with these groups by developing a process that would help each athlete discover or highlight their current sport-specific mental strengths and target their own areas for improvement. We felt that the MTE exercise would help these athletes gain personal awareness about their mental skills *prior* to our consultations with them, and that their responses would help target our work with them. At the same time it would give other athletes we had been already working with a model of mental skills related to excellence.

Another expedient strategy we considered was to begin the self-assessment process by focusing primarily on athlete's orientations and skills applied to daily training and practice. The goal was to set the stage for more success, less failure, and higher quality learning. We knew from previous research that the quality of an athlete's mental approach to practising has identifiable components which are a key to their confidence and success in competition (Orlick & Partington, 1988). Why not then begin by focusing on helping athletes to prepare themselves to maximize the benefits of practice?

The MTE-1 was constructed using concrete behavioral items to represent or model what top athletes have said about the mental criteria for quality

practice. We chose to begin with what we know works for the best. Athletes given such an inventory prior to our consultation with them, would already be aware of their strongest mental links, and where they needed work. Moreover, the guidelines for improvement and for future mental training would be evident from how they rated themselves on behavioral items in the exercise. We reasoned that such prior reflection or increased awareness would likely maximize the impact of limited-time consultations.

Development of the Mental Training Exercise

We employed a deductive method to construct sets of simple self-rating scales. Burisch (1986) has found that when attributes to be measured are well-understood by test developers, the deductive method is superior to other approaches in terms of validity (i.e., the test measures what it is supposed to measure), communicability (i.e., results from the test are understandable and therefore useful to the respondent), and economy (i.e., the test is easy to construct and easy to answer).

The actual work of test construction took place during several collaborative three-hour work sessions. In the first session we reviewed what we knew about key mental orientations toward quality practice based on our work with elite athletes (e.g., Orlick and Partington, 1986, 1988; Orlick, 1990). This session provided the action goals to guide our subsequent work; namely, to write sets of meaningful, concrete items representing how successful athletes have described their intense commitment to practice, their goal setting and goal striving behaviours in practice, and their

use of movement imagery, focusing and refocusing in practice. In the week prior to each session, we independently reviewed what we had learned from our research and consulting with athletes, and made notes on anything relevant to the scale to be developed. This made our weekly brainstorming, item-writing sessions maximally productive. Hence, within a few weeks the first draft of the Mental Training Exercise (MTE-1) was ready. We then sought feedback on this draft from athletes and teams with whom we were involved at that time. Revisions based on their input led to the version of the MTE presented at the end of this article.

Meaningfulness of the MTE

To illustrate the utility, usefulness or meaningfulness of the MTE we now describe several case applications from our consulting experiences. Terry begins with an application for high performance athletes and John then presents an application with developing athletes.

High performance athletes

I, (Terry) first used the MTE (MTE-1 and MTE-2) with national team athletes who I had been working with for a number of years (National Alpine Ski Team, Women's National Basketball Team, Three-Day-Event Equestrian Team and some members of the National Biathlon Team). I viewed the MTE as a model of mental readiness and mental strength, and as a reminder of what athletes do in order to excel. I explained to these athletes that the MTE contained virtually all the major components of excellence that we had discovered to be important for high performance athletes over the years. I gave them both forms of the MTE: the MTE-1 that is primarily related to quality practice, and the

MTE-2 that is primarily related to readiness for competition. I also told them that it takes most athletes over an hour to do a thorough job at completing both forms.

There was no requirement that they complete this exercise, but they knew me well enough by that time to know that I would not ask them to do anything unless I believed it would be of value for them. It was presented as a personal exercise in self evaluation aimed at self directed improvement. I informed them that only that athlete and I would see their personal responses and that I would be available to discuss any parts of it with them individually, if they so chose. Almost all of these athletes completed both forms and returned them to me within one or two days.

At the end of each MTE form, there were two questions requesting athletes' feedback on the MTE inventory and the relevance of this experience. Their feedback was overwhelmingly positive of, and centered on, the relevance of the questions and thoroughness of the mental elements of excellence covered. (*"Everything was in there, I could not think of anything important that you left out"*, *"It was a great reminder of what it takes to excel"*).

The MTE exercise confirmed that the best athletes on these teams, as was the case with other great athletes I have worked with, are the ones who are mentally strongest. Their scores are very high on all components of the MTE. However, even those who are the best in the world have some areas in the mental domain that could be stronger or more consistent. In one-on-one discussions they can readily identify those areas for

potential improvement. The MTE is useful in providing a simple blueprint for the self-assessment of mental skills associated with excellence and perhaps help stimulate action on those improvements.

My orientation in using the MTE with high performance athletes is focused on helping them to answer the following questions. What are you doing well? What can you do better? How strong are your mental skills or positive perspectives compared to the greatest performers on the planet? Can you make them better? The first world class skier I met with after she had completed the MTE flipped through the pages on her form and said, "I am strong here and here, and this is where I need work". We spent the rest of that meeting discussing how she could strengthen that one area of focus.

I felt comfortable taking the MTE directly to national team athletes I had been working with and to advanced development athletes who were very keen to make it to the next level (e.g., junior national team athletes wanting to make the national team or junior hockey players wanting to make the NHL). This is because I felt that their openness and commitment to improvement would make it a meaningful experience. However, I did not use the MTE in my work with groups of male professional team sport athletes (e.g., NHL hockey or CFL football players). Many of these athletes seem reluctant to fill out anything that looks like a questionnaire or "school work", and some are not keen on reading anything. I chose to use the MTE only with individual members of professional teams who showed a genuine interest in

excelling and a commitment to strengthening their mental skills.

On one occasion I used the MTE with a young professional hockey player who was trying to make a comeback from a serious injury. I met with him twice to learn more about his injury, his perspective and to understand how he viewed the challenge he faced. I could feel his deep commitment, so I suggested that he might want to complete the MTE exercise. He returned for a meeting a week later with his completed forms. A brief look at his responses highlighted some of his strengths (commitment ratings of 100 and imagery control ratings of 90's and 100's) as well as some specific areas that needed strengthening (refocusing ratings in the 20's and 30's). We had a great meeting that centered around how he could take advantage of his strengths to strengthen his weaknesses. He had not yet developed any specific plans for positive refocusing, so together we worked on a plan of action.

When he returned a week later to give me an update he said, "*you know that MTE form I filled out last week, well if I did the part on refocusing right now, it would be totally different*". I asked, "*How it would be different?*". He said, "*My scores would be in the 80's and 90's*". He went on to say that he had been working on implementing his refocusing plan every day all week and it was working very well.

When I have used the MTE with people who are highly committed, who want to complete the exercise and then act upon the lessons which surface, it has been useful. It is a valuable and respectful tool that can help, especially when

working with larger groups, when time is limited, when athletes want to compare what they do mentally with what the best athletes do, and when accomplished athletes need a reminder for what they already know they should be doing. Given the time, I still prefer to just talk one-on-one with an athlete on an ongoing basis to discuss whatever he or she feels is most important at that particular time.

Developing Athletes

This application of the MTE-1 also worked well, although I (John) was a little more didactic than usual on consulting. I (John) had been asked to provide a practicum experience in applied sport psychology for a doctoral student. Neither the student nor the six male gymnasts, aged fourteen to seventeen, with whom we intended to work, had much experience in mental training. Fortunately, the coach was very open, and committed to helping his athletes to develop mental skills.

First we met with the coach and obtained his perspectives about the mental readiness needs of the six athletes and how they functioned together as a team. Then we observed several of their 4:30 to 8:30 p.m. practices. We saw a lot of intense work and daring, but we also saw one athlete chronically goofing off for water breaks; another seemed lethargic and had spotty attendance; a third seemed to be stuck in the rut of failing and re-trying without refocusing so that his repeated attempts began to appear ritualistic; the current “star” of the team injured himself on an angry second attempt after failing on a risky high bar move; and we learned that one gymnast had forgotten what to do in one of the lines in his floor exercise routine at a re-

cent competition. At that time, this athlete didn’t believe in doing mental imagery. In short, there were adequate reasons for us to suggest to the coach that we should begin our intervention by teaching his athletes about the orientation and mental skills necessary to improve the quality of their practising. We explained that this could be accomplished efficiently through MTE modelling, and assessment, together with our feedback. The coach approved of our proposal after examining the MTE-1.

The team practised twenty hours per week, Monday, Tuesday, Thursday, and Friday evenings, and Sunday afternoon. The coach assigned the Tuesday practice for us to work with the team. We developed a six-week program to introduce the four mental prerequisites for quality practice, which are modelled by items in the four MTE-1 scales. Based on our judgement of this team’s needs, our curriculum was scheduled as follows: commitment (one week); mental imagery (three weeks); practice goals (one week); and practice focus (one week). We used this part method format to introduce each of the four parts of the curriculum; that is, we gave only one mental segment of the MTE to the athletes just prior to their physical warm-up. Then, while they practised, we photocopied each completed form for our own use, computed some simple summary statistics, and examined item responses in detail to determine which of the athletes had rated themselves strong on the skill being assessed, and which had given lower ratings. Then we had a team meeting towards the end of the practice. Athletes were given back their MTE scale, and we explained and tried to “sell” the significance of the skill. We did this both by explaining that the MTE

items reflect what the best athletes in a variety of sports had told us about their orientation towards practice, and by means of teaching aids such as the video, Visualization, produced by the Coaching Association of Canada. Then while giving the team feedback, with the athlete's permission, we encouraged those who were strongest on certain mental skills to share specifics about how they operate to get the most out of practice by drawing upon that particular skill. For example, in the session on the MTE practice focus scale, the athlete who rated himself highest on overcoming distractions told the others about how he could leave his outside concerns behind for the duration of practice. His strategy was to slam his car door shut out in the parking lot when he arrived at practice. For him this was symbolic of locking his daily concerns in the car before he entered the gym. The team really seemed respectful of these kinds of disclosures, and some of the suggestions became a lasting part of the team's developing identity, as you would hear these things frequently slip into conversation.

Now let me give you a more detailed explanation of how we utilized an MTE scale with this gym team. Consider our first session on commitment. I began this team meeting by pointing out that compared to their high school peers these gymnasts were "super committed", given that they were training twenty hours per week all year long. Next, to "sell" the importance of commitment, I read excerpts from interviews with three very successful and highly committed Canadian Olympians (Orlick and Partington, 1988). Finally, for feedback, I noted that the team's average rating on the second item, "...really want to become an outstanding performer in gym-

nastics", was "98", "like an A+", while their item averages on the "make it happen" questions 4, 5, 7 and 8, "Do you give 100% in practice whether its going well or not so well?"; and, "Do you take personal responsibility for mistakes and work hard to correct them?", averaged "79". We left them with the challenge that there was a nineteen point gap between their wanting to be successful, and their current reported willingness to work for it. I explained that greater success would come from closing that gap simply by giving a little more in each practice.

Reliability and Validity of the MTE

We didn't initially undertake formal steps for establishing reliability and validity for the MTE since the purpose and circumstances associated with our work differed from those of traditional research-oriented test developers. However, in the past couple of years our thesis students have used the MTE along with other measures in their research on various topics involving different types of performers. (Bullock, 1995; Bradley, 1996; Lusk, 1997; and Burman-Hiscox, 1997). Although their research was not directed at the psychometric properties of the MTE, some of their findings have provided a promising potpourri of preliminary evidence in support of the psychometric status of the MTE. It should be noted that in each of these studies, a few items were modified slightly to ensure their perceived relevance, e.g., an item for dancers might replace the word "coach" by "your dance instructor".

Acceptable levels of reliability, or internal consistency, were found for the four scales in the MTE-1. Table 1 illustrates alpha coefficients reported in

a study of seventy-eight cadet and elite rifle shooters, and from studies of sixty teenage female students of highland

dance and one hundred and five students of modern dance.

Table 1. Internal Consistency Coefficients for the MTE-1 Scales

| MTE Scales | Samples | | |
|------------|----------|------------------|----------------|
| | Shooters | Highland Dancers | Modern Dancers |
| Commitment | 0.855 | 0.836 | 0.851 |
| Goals | 0.909 | 0.904 | N/A |
| Imagery | 0.879 | 0.817 | N/A |
| Focus | 0.729 | 0.885 | N/A |

Furthermore, impressive evidence of criterion validity was found in the three student theses which involved between group comparisons. Consider first the study of rifle shooters. Participants were seventy three male and female, army, air, and sea cadets, in the age range fourteen to eighteen years, who were competing in National or Provincial Cadet championships, as well as five adult male civilians who had competed at one or several competitions at the level of Olympic, Commonwealth, and Pan American Games, and/or World Championships. One set of findings showed that each individual MTE item, and each of the four scale scores discriminated significantly between the twenty most accurate and the twenty least accurate participants. Another stage of the analysis compared MTE scale scores of shooters in four groups representing different levels of expertise based on competition target scores. MANOVA results indicated a strong multivariate discrimination between the four skill levels in terms of the four MTE scale scores. (Hotellings $t = 1.04$, $F(12.209) = 6.06$, $p < 0.001$). Furthermore, univariate tests revealed a significant level of discrimination between the four skill groups by each of the four MTE scales:

- Commitment
 $F(3.74) = 16.2$, $p < 0.001$
- Goals
 $F(3.74) = 7.52$, $p < 0.001$
- Imagery
 $F(3.74) = 6.18$, $p < 0.005$
- Focus
 $F(3.74) = 16.75$, $p < 0.001$

Another student thesis which demonstrated MTE criterion validity involved thirty five male hockey players and thirty five male students of the martial arts form called Tae Kwon Do (TKD), all in the age range eight to twelve years. A cross-sectional design was used, with the skill level designations of the TKD samples chosen to parallel the skill level and length of training of the league divisions designated by the Canadian Amateur Hockey association. The finding most relevant to this paper is that for the combined sample of seventy athletes, significant differences were obtained between participants in the three skill levels for both commitment scores ($F(2.64) = 7.77$, $p < 0.05$) and focus scores ($F(2.64) = 11.66$, $p < 0.05$).

The higher the commitment and better the focus, the higher the skill level.

A third thesis, which generated results relevant to the question of MTE criterion validity, involved sixty female students of highland dance from eleven dance schools representing various achievement levels (i.e., Beginner, Novice, Intermediate, and Premier). The study examined the relationship between dancing achievement, and student orientations to, and skills for practising dance, as given by items in the MTE. Four multiple regression analyses were conducted, with participant's dance achievement level as the dependent variable, and item scores on each of the MTE scales as independent variables. Significant associations were found between dancing skill level and both commitment and mental imagery (Commitment R -squared = 0.385, F = 2.820, p < 0.008; Imagery R -squared = 0.371, F = 2.019, p < 0.047). It should also be noted that although results for practice goals and focus failed to reach significance with this group, there is still reason to believe that the MTE measures for these skills in young dancers have some criterion validity and practical significance given that there was a difference of at least twenty points (on scales of one hundred and one hundred and fifty, respectively) between the five highest and five lowest ranked dancers on these scales.

To recapitulate, these three studies found support for the criterion validity of the MTE scales:

- support for the commitment scale was found from rifle shooters, hockey and TKD athletes, and dancers

- support for the goals scale was found from rifle shooters
- support for the imagery scale was found from shooters and dancers
- support for the focus scale was found from shooters and from the sample of hockey and TKD athletes.

Discriminant and Convergent validity

Consider next, evidence of discriminant and convergent validity. Discriminant validity of the MTE was evidenced by results in the study of rifle shooters. Each scale in the MTE significantly discriminated between shooters at four levels of expertise. However, this study also found no gender differences for any of the scale scores. Thus, for shooters at least, MTE scores discriminate what they should, i.e., performance levels, but not what they shouldn't, i.e., gender.

Convergent validity of the Commitment Scale was demonstrated by results from two samples of dance students. One study of sixty female teenagers enrolled in highland dance classes found a significant positive relationship between scores on the Commitment Scale and students reported number of hours of practice throughout the year in class and at home. (R -squared = 0.216, F = 3.238, p < 0.019; practice at home in July-August, beta = 0.277; practice at home in September-June, beta = 0.163; practice in class in September-June, beta = 0.130, practice in class in July-August, beta = 0.035).

The second study, with one hundred and five female modern dance students, age eleven to eighteen, showed a significant positive relationship between students' reported commitment to dance

practice and their ratings of the teaching style of their dance instructor on a composite factor score. As expected, high commitment was related to a positive teaching style (R -squared = 0.177, $p < 0.05$). Typical components of positive style included “making dance fun and exciting”, “teacher likes teaching”, “supportive outside of class”, “teacher loves to dance”, “makes learning easy”, and “happy and in good spirits most of the time”. In sum, the inference about the convergent validity of the MTE Commitment Scale comes from findings that dancers who report high commitment also report that their instructors have a positive teaching style; furthermore, committed dancers report doing more “in class” and “at home” practice than do dancers with low commitment.

Perceived content reality

Finally, what about the “softer”, but practically significant criteria of perceived content validity, representativeness, and utility of the MTE? Two of the four student theses provided open-ended questions on these concerns, e.g., “In the space below, please share your findings about this exercise; about how the questions made you feel; or any other comments”, and “Are there any other areas related to training or practice that we have not touched on that you feel are important”? Content analysis revealed that ninety percent of the dance students reported that there was no reason to include any additional items to represent what was important to them about their approach toward practising. As for the rifle shooters, seventy three percent provided positive comments in support of the representativeness of the MTE items, and their utility for making shooters more aware of their current level of mental skills application in practice.

Their suggestions for improvement included providing extra items on team and coaching issues, and making a French translation available for French-speaking Canadians. At the national team level, the athletes Orlick spoke of who completed to MTE-1 and MTE-2 reported that it was extremely inclusive and did not suggest any additional items.

Before concluding our discussion of the preliminary evidence on the validity of the MTE, one further point can be made. Although our validity evidence was obtained rather unsystematically from a variety of samples, including dance, and a range of age levels, this enables us fortuitously to draw attention to the generality of this measure. Young adults and even boys and girls in both sport and dance settings could understand the mental training principles in the MTE, and the majority in those heterogeneous samples considered the items to be representative of what they do, or should do to improve. This is quite remarkable considering that we developed the MTE from our experience with elite adult athletes in order to expedite our future work with other national level and international athlete clients on our consulting work at Athlete Assessment Centers.

The question of the validity of the MTE, as with all other such measures must always remain open for further scrutiny and improvement.

Highlights of the MTE

We close this article with a brief discussion to highlight major features of the MTE-1. First, although our work on the MTE was triggered by the desire to provide a model of relevant mental skills for excellence, and the anticipation of

increased requests to serve larger numbers of athletes, the orientation we brought to its development was athlete-centered. We wanted to provide a comprehensive mental training blueprint, modelled by specific behaviours and orientations reported to us by highly successful athletes, in order that other athletes might know what they need to do, and how they might best focus in practice to gain maximum benefits. Our athlete-centered approach sets the MTE, and the way we use it, apart from many other inventories. This is because the authors of many other inventories were intending to satisfy either their own research interests, the requirements of coaches or administrators for athlete selection, classification or management, or as a tool to help consultants establish rapport and feel comfortable with their athlete clients. Our attempt at an athlete-centered approach is focused solely on helping the athlete to meet his or her own needs, and athlete feedback, to date, indicates that they appreciate this approach.

A second feature to highlight is that the four MTE-1 scales are proving to be both valid and useful, even though our test development strategy omitted

some of the standard psychometric rituals. We believe that this has been possible because the MTE is grounded, not in theory, but in the reported experiences of successful athletes.

Third, because the MTE is based on how successful athletes approach their sometimes mundane yet crucial preparation day in and day out, we have fortuitously developed an instrument which seems to have anticipated the current needs for measurement of the growing number of researchers on expertise who are becoming aware of the important role of deliberate or quality practice.

As a final highlight, we wish to point out how simple it has been for us, and our students to modify the wording of the MTE for different target populations. Through these kinds of adaptations we can facilitate the modelling of successful approaches to preparation for a variety of challenges encountered by a wide variety of athletes, performers, and people in general, as they pursue their dreams and objectives. We invite you to use a performer-centered approach and to try such modifications for yourself, your athletes, students, and others.

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MTE-1

Mental Training Exercise

The following questions are designed to help you to understand and strengthen your mental skills. The items are based on what top athletes do to perform at a consistently high level of excellence. Answer the questions with reference to the sport or performance domain to which you are most committed at the present time.

1. What sport or performance domain are you most committed to at this time?

2. What was your highest accomplishment or best personal performance in this sport or domain?

3. What is your ultimate goal in this sport or performance domain?

COMMITMENT

1. Are you willing to sacrifice other things to excel in your sport?
Never _____ Always
0 10 20 30 40 50 60 70 80 90 100
2. Do you really want to become an outstanding performer in your sport?
Never _____ Always
0 10 20 30 40 50 60 70 80 90 100
3. Are you determined to keep pushing yourself and never give up in trying to achieve your sport goals?
Never _____ Always
0 10 20 30 40 50 60 70 80 90 100
4. Do you take personal responsibility for mistakes and work hard to correct them?
Never _____ Always
0 10 20 30 40 50 60 70 80 90 100
5. Do you give 100 percent in practice (whether it's going well or not so well)?
Never _____ Always
0 10 20 30 40 50 60 70 80 90 100

6. Do you give 100 percent in competitions or games (whether behind or ahead)?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

7. Do you put in extra time for mental and physical preparation before, after, or between regular practice sessions?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

8. Do you push hard even if it hurts?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

9. During the competitive season do you feel more committed to improvement in your sport than to anything else?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

10. In order to achieve your goals are you willing to do whatever you believe is in *your* best interest, even if it means going against the advice of coaches, athletes, or others?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

GOALS

1. Before practice or training, do you set specific physical/technical performance goals for yourself?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

2. Before practice or training, do you set specific mental goals, for example, to stay positive, to focus only on what you want to do, or to put away distractions?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

3. Do you commit yourself to go after the goals you set with full focus and effort?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

4. Do you give yourself the best chance of achieving your goals by arriving well rested, on time and ready to go?

Never Always
 0 10 20 30 40 50 60 70 80 90 100

5. During practice, before you execute a skill, piece, drill, routine or play sequence, do you set a specific goal by deciding exactly what you want to do, and exactly how you want to do it?

Never Always

0 10 20 30 40 50 60 70 80 90 100

6. Do you go after your specific goals in practice by giving everything you have?

Never Always

0 10 20 30 40 50 60 70 80 90 100

7. During practice when there is a break in the action, do you take the time to think about what worked and what didn't work in trying to achieve your goals?

Never Always

0 10 20 30 40 50 60 70 80 90 100

8. After practice do you take the time to think about what didn't work in trying to achieve your goals?

Never Always

0 10 20 30 40 50 60 70 80 90 100

9. During practice, between drills, trials, set or routines, do you decide exactly what you want to do next time, based on thinking about what worked and what didn't work last time?

Never Always

0 10 20 30 40 50 60 70 80 90 100

10. After practice, do you decide exactly what you want to do next time, based on thinking about what worked and what didn't work last time?

Never Always

0 10 20 30 40 50 60 70 80 90 100

MENTAL IMAGERY

1. Before practice and competition, for example at home, on the way there, or during warm-up, do you imagine yourself doing the moves that you want to do?

Never Always

0 10 20 30 40 50 60 70 80 90 100

2. During practice, before you do a skill, drill or play sequence, do you take a moment to run the skill through your mind?

Never Always

0 10 20 30 40 50 60 70 80 90 100

3. When the coach gives you feedback or a suggestion, do you try to clearly imagine or feel what you are being asked to do before attempting to do it?

| | | | | | | | | | | | | |
|-------|---|----|----|----|----|----|----|----|----|----|-----|--------|
| Never | | | | | | | | | | | | Always |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

6. After doing a less than perfect skill or play sequence, do you imagine yourself doing it better, before actually trying it again?

| | | | | | | | | | | | | |
|-------|---|----|----|----|----|----|----|----|----|----|-----|--------|
| Never | | | | | | | | | | | | Always |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

5. When learning or refining a skill or routine, do you try to come up with good personal reminders (e.g., words, images or feelings) to guide your imagery and performance?

| | | | | | | | | | | | | |
|-------|---|----|----|----|----|----|----|----|----|----|-----|--------|
| Never | | | | | | | | | | | | Always |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

6. Take a moment now to imagine yourself doing a basic movement, skill, element or sequence, that you do regularly in your sport. After trying this, respond to the following questions:

A) How close was it to the way you actually do it?

| | | | | | | | | | | | | |
|---------------------|---|----|----|----|----|----|----|----|----|----|-----|--------------|
| Couldn't imagine it | | | | | | | | | | | | Totally like |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

B) Did you experience the physical sensations in your body that you actually feel when you do it?

| | | | | | | | | | | | | |
|------------|---|----|----|----|----|----|----|----|----|----|-----|---------|
| Not at all | | | | | | | | | | | | Totally |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

C) Did you see things as if you were inside your own body doing it?

| | | | | | | | | | | | | |
|------------|---|----|----|----|----|----|----|----|----|----|-----|---------|
| Not at all | | | | | | | | | | | | Totally |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

D) Did you see things as if watching a video of yourself doing it?

| | | | | | | | | | | | | |
|------------|---|----|----|----|----|----|----|----|----|----|-----|---------|
| Not at all | | | | | | | | | | | | Totally |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

E) In your imagery could you hold on to the feeling or image throughout the skill or sequence?

| | | | | | | | | | | | | |
|------------|---|----|----|----|----|----|----|----|----|----|-----|---------|
| Not at all | | | | | | | | | | | | Totally |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | |

F) How close was your performance image to a perfect performance?
 Not even close Totally

0 10 20 30 40 50 60 70 80 90 100

7. Now let's take a moment to imagine yourself doing this movement, skill, element or sequence again. But this time move it up a notch, make it really great - totally awesome!

A) Were you able to move it up a notch the way you wanted to?
 YES () NO ()

Explain: _____

B) How close was this performance image to a perfect one?
 Not even close Totally

0 10 20 30 40 50 60 70 80 90 100

PRACTICE FOCUS

1. Before practice, if you are thinking about a problem related to home, school or a relationship, are you able to shift gears and leave those concerns behind for the duration of the practice?

Never Always

0 10 20 30 40 50 60 70 80 90 100

2. Do you know what kind of focus allows you to perform best in practice situations?

Don't know Know exactly

0 10 20 30 40 50 60 70 80 90 100

3. What is your best practice focus?

4. When executing moves, skills, routines or plays in practice are you able to maintain this "best" focus?

Never Always

0 10 20 30 40 50 60 70 80 90 100

5. Do you know how to take a mental break in practice when there is no need to be focused on your performance?

| | | |
|--------------|--|-----------------|
| Don' know | _____ | Know exactly |
| | 0 10 20 30 40 50 60 70 80 90 100 | |

6. What do you do to take a mental break in practice?

7. During your practice when there are breaks in the action, how successful are you at allowing yourself to take a mental break when it might be helpful?

| | | |
|-------|--|--------|
| Never | _____ | Always |
| | 0 10 20 30 40 50 60 70 80 90 100 | |

8. During practice there are a number of things that can distract athletes or take them away from their best focus. After each of the situations listed below, indicate how successful you are at getting back on track, into a positive performance focus?

a) Making an error or screwing something up:

| | | |
|--|--|----------------------------------|
| Problem Getting back on track | _____ | Get Right back on track |
| | 0 10 20 30 40 50 60 70 80 90 100 | |

a) Coach getting "on your case" or making a negative comment:

| | | |
|--|--|----------------------------------|
| Problem Getting back on track | _____ | Get Right back on track |
| | 0 10 20 30 40 50 60 70 80 90 100 | |

b) Negative thoughts or worries about teammates:

| | | |
|--|--|----------------------------------|
| Problem Getting back on track | _____ | Get Right back on track |
| | 0 10 20 30 40 50 60 70 80 90 100 | |

c) Negative thoughts or worries about being monitored or evaluated:

| | | | | | | | | | | | | | |
|---------|---|----|----|----|----|----|----|----|----|----|-----|--|---------|
| Problem | | | | | | | | | | | | | Get |
| Getting | | | | | | | | | | | | | Right |
| back on | | | | | | | | | | | | | back on |
| track | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | track |

d) Negative thoughts or worries about being ready for competition:

| | | | | | | | | | | | | | |
|---------|---|----|----|----|----|----|----|----|----|----|-----|--|---------|
| Problem | | | | | | | | | | | | | Get |
| Getting | | | | | | | | | | | | | Right |
| back on | | | | | | | | | | | | | back on |
| track | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | track |

e) Negative thoughts or worries about possibly failing:

| | | | | | | | | | | | | | |
|---------|---|----|----|----|----|----|----|----|----|----|-----|--|---------|
| Problem | | | | | | | | | | | | | Get |
| Getting | | | | | | | | | | | | | Right |
| back on | | | | | | | | | | | | | back on |
| track | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | track |

f) Negative thoughts or worries about getting hurt or being injured:

| | | | | | | | | | | | | | |
|---------|---|----|----|----|----|----|----|----|----|----|-----|--|---------|
| Problem | | | | | | | | | | | | | Get |
| Getting | | | | | | | | | | | | | Right |
| back on | | | | | | | | | | | | | back on |
| track | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | track |

Identify and rate any other distractors.

Distractor #1 is: _____

| | | | | | | | | | | | | | |
|---------|---|----|----|----|----|----|----|----|----|----|-----|--|---------|
| Problem | | | | | | | | | | | | | Get |
| Getting | | | | | | | | | | | | | Right |
| back on | | | | | | | | | | | | | back on |
| track | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | track |

Distractor #2 is: _____

| | | | | | | | | | | | | | |
|---------|---|----|----|----|----|----|----|----|----|----|-----|--|---------|
| Problem | | | | | | | | | | | | | Get |
| getting | | | | | | | | | | | | | right |
| back on | | | | | | | | | | | | | back on |
| track | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | track |

9. After practice how successful are you at drawing out lessons that can help you?

| | | | | | | | | | | | | | |
|-------|---|----|----|----|----|----|----|----|----|----|-----|--|--------|
| Never | | | | | | | | | | | | | Always |
| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | | |

10. Do you act on these lessons at your next opportunity?

Never Always

0 10 20 30 40 50 60 70 80 90 100

11. After practice how successful are you at shifting gears and leaving today's practice behind, especially if things didn't go well?

Never Always

0 10 20 30 40 50 60 70 80 90 100

12. What works best for you to shift focus away from thinking about the practice?

This concludes the mental training exercise. In the space below, please share what you feel are your mental strengths.

Where do you think you need most work to improve?

What are you going to do to make those improvements?

Editorial Statement

The focus of The Journal of Excellence is the sharing of knowledge and wisdom that is relevant to the lived experience of excellence in any domain (e.g., sports, performing arts, health, workplace, education, joyful living). Qualitative research of an applied nature, such as case studies, interventions, interview studies and narrative studies are welcomed. The journal also publishes personal accounts, short commentaries, interviews, poems or stories that offer insights into the nature of high level challenges and the mental links to excellence. Reviews of books, videos, films or conferences as well as notices of upcoming conferences and events will be considered.

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Louise Zitzelsberger, PhD

Editor

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All submissions must be preceded by an abstract not exceeding 150 words. All figures and photographs should be submitted on-line in Tiff format (600 dpi.). Tables should be included in the Word document. A short biographical sketch describing each author area(s) of expertise, performance or research interests and affiliation(s) should accompany the article.

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Founded in 1989, the focus of the ISMTE is excellence in performance and excellence in living. The founding President, Lars Eric Unestahl, organized the First World Congress in Örebro, Sweden, in 1991. Terry Orlick became the second President in 1991, hosted the 1995 World Congress in Ottawa, Canada and initiated the Journal of Excellence. Keith Henschen became the third President in 1998. Keith and Rich Gordin hosted the 1999 World Congress on Mental Training and Excellence, in Salt Lake City, USA. The next World Congress on Mental Training and Excellence will be hosted by Pavel Bundzen in 2003, in St.Petersburg, Russia.

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