THE JOURNAL OF EXCELLENCE

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Mission of the Journal of Excellence

Terry Orlick, PhD – Founder and Editor in Chief, the Journal of Excellence.

My mission with the Journal of Excellence is to fill some important gaps in our knowledge, actions and our lives, that are essential to the successful pursuit of personal and professional excellence. The Journal of Excellence is devoted to nurturing excellence in all human endeavors and all worthy pursuits. Our focus is centered on the pursuit of excellence in the working and performing parts of our lives, as well as our lives outside the workplace or performance domain. Our goal is to inspire excellence, provide a forum to discuss the positive pursuit of excellence, and share practical strategies and perspectives for pursuing meaningful high-level goals.

The Journal of Excellence is committed to nurturing a positive vision of education and training for better people, better performers and a better world.

There is much value in pursuing excellence, in education, sport, health, the performing arts, parenting, teaching, coaching, health care, political, government and business leadership, and every workplace. There is also much value in the pursuing excellence in quality living, quality relationships and the development of a higher level of humanity. This is the first and only journal, which has **EXCELLENCE** in multiple domains as its sole focus. The ultimate mission of the Journal of Excellence is to provide insights and strategies that will help us to collectively become more successful in the pursuit of performance excellence and more fulfilled through excellence in living.

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 exceptional performers and inspiring 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 experiences, 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.

Examining the Psychological Skills Used by Elite Canadian Military Pilots

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Abstract

The purpose of this research was to better understand how elite military pilots use psychological skills to enhance the quality and consistency of their performance. Elite high performance athletes have used psychological skills training to enhance the quality and consistency of their performances for many years (e.g., Mahoney, Gabriel & Perkins, 1987, Orlick and Partington, 1988, Orlick, 2008). For the purposes of this study fifteen elite Canadian pilots were interviewed at a Royal Canadian Air Force base in Canada. Results indicated these elite level pilots utilized all seven elements of Orlick's (2008) Wheel of Excellence over three phases of flight: pre-flight preparation, mission execution, and post-flight debriefs. One striking performance difference in the world of military pilots is the extreme deployment conditions to which they are sometimes exposed and the extreme consequences of mission failure, which may include loss of life.

Introduction

Research has repeatedly demonstrated that psychological or mental skills training (MST) can effectively enhance the quality and consistency of sport performance (e.g., Fournier, Calmels, Durand-Bush, & Salmela, 2005; Vealey, 1994). Focused MST programs empower athletes to exercise a greater degree of control over performances through the acquisition and utilization of skills and strategies such as distraction control, arousal/activation management, and effective competition focusing. Orlick (2008) summarized the key mental skills necessary for high-level performance in any high performance domain in the *Wheel of Excellence* model: focus, commitment, mental readiness, positive images, confidence, distraction control, and ongoing learning. Focus is described as the

driving force from which the remaining 6 elements of excellence develop and grow. This fundamental requirement of a full focus has been supported by research with performers of many different high peformance domains (e.g., Cohn, 1991; Orlick & Partington, 1986; Talbot-Honeck & Orlick, 1998; Werthner 2002).

In recent years, the growing popularity of extreme sports has shed light on the use of MST to enhance performance in high-risk contexts. Burke and Orlick (2003) explored the mental strategies used by successful Mount Everest climbers. The researchers reported that climbers employed mental skills in three distinct temporal phases: the preparation phase, the ascent phase, and the descent phase. The authors noted that a positive mindset and effective focus were

frequently cited by climbers as important components of success. Coleman and Orlick (2006) examined the use of mental skills in the high-risk sport of big mountain freeskiing. In this study the researchers also noted the importance of a preparation phase, performance execution phase, and post-performance phase. The major success elements common to all freeskiers were a fully focused connection with the task, love for the sport, and the ability to remain calm and focused in very challenging situations. Given this existing support for the extensive use of relevant focusing and other psychological skills in elite and high-risk sport contexts, it is surprising that there is an absence of applied research with respect to the use of mental skills and MST in military flying training and performance.

Roth and Andre (2004) produced what may be the first published investigation of an MST strategy for military aviation. Using 60 participants with no previous flying experience, the researchers attempted to ascertain the value of "chair flying" as a pilot training activity. Chair flying was defined as a preparation technique in which a pilot sits in a chair and mentally rehearses each sequence of the impending mission, including movements and props. Participants were assigned to a Memorization group, Simulator group, or Chair Flying group to be compared in a simulated (i.e., computer based) flying task. In preparation for the task, the Memorization group studied an Operating Handbook, the Simulator group practiced the mission with a computerized simulator, and the Chair Flying group received instructions and practiced with the chair flying (mental imagery) method. Results showed no statistical differences between the performances of the Chair Flying group and the Simulator group, and a marked decline in performance by the Memorization group. It was concluded that chair flying can be equally as effective as computer based simulator training in preparation for a simulator mission.

Toong and Koh (2005) investigated the effects of an MST intervention on the performance of 127 novice military parachutists by assigning participants to either a Mental Skills group or a Control group. Trainees in the Mental Skills group received a brief instructional program on relaxation, visualization/imagery, and mental focus. Using self-report measures of confidence and anxiety levels, in combination with other objective measures such as instructor assessment, the researchers reported that significantly more trainees in the Mental Skills group successfully performed a jump from a three story tower when compared with trainees in the Control group. They concluded that MST "can potentially have a positive impact on military performance, especially on tasks that are performed under stressful conditions" (p. 6). They further suggested that a taxonomy of mental skills, appropriate for specific military tasks, would add value to the current technical focus of training.

Purpose

The present investigation was undertaken as part of a collaborative effort with Canada's Department of National Defense (DND) and the Royal Canadian Air Force (RCAF) to examine the psychological underpinnings of Canadian military aviation excellence. The purpose of this study was to explore the following question: What psychological skills are used by elite Canadian military pilots and how are these skills used throughout their highly demanding aviation careers? This investigation also provided the groundwork for the development of a relevant and focused MST program specific to the needs of Canada's Air Force.

Method
Participants

Participants were selected using purposive sampling. Senior commanding officers within DND recommended suitable participants for this study, with the guidance of preferred criteria provided by the researchers. These criteria included high level performers and combat or deployment experience if possible. A sample of 15 elite military pilots was selected from the 15 Wing Moose Jaw base, where the RCAF conducts the majority of its pilot training. A 16th interview, with a top commanding officer, was

not included in the data analysis. Of the 15 participants, several were training to become instructor pilots, others were high ranking instructor pilots, and two occupied top supervisory positions. Seven participants had flown multiple aircraft types (jet, helicopter, multiengine) and two participants had flown the CF-18 Hornet, the RCAF's frontline fighter jet capable of speeds up to Mach 1.8. Four participants had been deployed to combat zones for one or more tours and one participant spent a substantial amount of time serving with Joint Task Force Two, Canada's Special Operations Forces unit.

Data Collection and Analysis

Data was collected through one-on-one, semi-structured interviews. An interview guide was created based on Orlick's (2008) *Wheel of Excellence*. The interview guide was independently reviewed by key RCAF personnel, the DND Social Science Research Review Board, and peers within the performance psychology community. Interviews lasted from 45 to 90 minutes and took place over a period of four days at 15 Wing Moose Jaw. Interviews were recorded, transcribed and analyzed both inductively and deductively. Both phases of analysis were conducted manually, without the use of computer coding programs.

Throughout the course of the interviews and analysis it became apparent that the use of psychological skills coincided with three distinct temporal phases, as was noted in previous studies (e.g., Coleman & Orlick, 2006). Thus the results were categorized within the following temporal groups: pre-flight, mission execution, and post-flight. The pre-flight phase refers to the time leading up to the flight and in-between flights; this includes the pre-flight briefing. The mission execution phase begins when the pilot steps onto the flight line and ends when the pilot exits the aircraft. The post-flight phase refers to all of the time following the flight, before the pilot begins to prepare for the next flight; this includes the post-flight debrief. The element of commitment to the task or mission was clearly evident beyond the confines of any one phase of

flight, and in most cases was evident even prior to employment in the military. Based on the pilots' extensive and ongoing high level of commitment, this element of excellence was analyzed and presented as a unique component of performance excellence.

Results
Commitment

All 15 pilots spoke of the importance of dedication, perseverance, and focus in the pursuit of their objectives. This commitment was clearly present prior to the participants' employment in the military. Pilots maintained a focus on their ultimate goal of becoming a military pilot and acted in specific and positive ways to achieve that goal, even when faced with barriers.

> *I was seven or eight. . .from that point on, that's exactly what I wanted to do the whole time. So going to school I had that idea in my mind: I knew I had to have good marks, be dynamic and so on, because those were all the things the Forces were looking for in officers. (Participant 14)*

Participants described a strong commitment to learning and preparing themselves for flight, wanting to know that if they failed it would not be for lack of preparation or effort. Many also felt that they had made a deliberate choice to achieve their own personal best as a pilot.

> *I think you can choose to perform well. . .I think you can choose to at least set yourself up for success. You can't control everything, but you can at least put yourself in the best state of mind or emotionally and physically ready to perform. (Participant 8)*

Fun and enjoyment seemed to strengthen the level of commitment felt by participants. For all pilots, evidence of this enjoyment could be seen and heard in the way they spoke when recalling certain events or discussing various aspects of their jobs.

> *I remember we had a blast. [The training exercise] was very successful . . .it was very exhilarating, knowing that you made it work, and it's fun. It's very challenging. We still talk about it. (Participant 4)*

At times, participants felt that they could make a choice to feel positively about flying, which was especially important during challenging situations such as a difficult course. Many pilots stated that if they ever stopped having fun, they would know their time in the military was up.

Pre-Flight
Focus
An important part of the pre-flight phase for all pilots was bringing an effective and connected focus into the preparation routine. A key characteristic of an effective focus was being in the moment: Participants were not thinking about irrelevant events of the past or the future, but were totally absorbed in the task at hand. The pre-flight preparation focus was described as being of the same quality as a performance focus.

> *There's no way to simulate [an engine fire] in real life, but in the simulator. . .I'll do the maneuvers. And I exercise myself in the same way: I don't take it nonchalantly. . .I try and keep it as close to as if I would do it in real life. (Participant 11)*

Participants were aware of what they needed to do to effectively achieve this type of focus (their best focus) and would actively take steps to ensure that the correct conditions were in place (e.g., removing themselves from a distracting environment).

Mental Readiness
A key component for all pilots during the pre-flight preparation was ensuring that they were mentally ready to execute their mission. All 15 pilots discussed the concept of mental readiness through ideas such as capacity building,

studying, and anticipating various aspects of the flight.

> *If I know I'm not going to fly for a week I will always go back to the books that the students use, and I will re-read the books. Because, even though my day is predominantly running the [flight] school, never can I go to a cockpit and not be prepared. (Participant 1)*

Participants described several important elements of mental readiness: reviewing written material (e.g., flight procedures, maneuvers), building capacity (the ability to attend to multiple stimuli), learning from others, planning for unplanned events, and engaging in mental imagery. Pilots emphasized the importance of planning for possible emergencies before a flight by thinking about potential circumstances they may encounter (informed by textbooks or other pilots' experiences); determining how they would respond; and often visualizing their preferred responses or a number of possible responses.

Mental Imagery
All 15 participants described the use of mental imagery or chair flying as part of their preparation for flight. An important characteristic of chair flying was the inclusion of clear and realistic details. Pilots specifically noted that they "put themselves in the cockpit" or use a first person perspective in which they saw the cockpit and the horizon through their own eyes. For many participants, chair flying was largely a visual experience. Several participants also described the use of kinesthetic components, such as reaching to flick switches or pulling back on the throttle, and some participants described using auditory elements in their chair flying.

> *I visualize everything from what I see outside to controls in the cockpit. I even go over what ATC [Air Traffic Control] will say/ask and what I will verbalize to myself when I need to do checks in the cockpit. (Participant 5)*

While differences between participants were obvious in the chair flying methodology, it was clear that all participants attempted to engage in a realistic replication of potential flight events and their preferred responses, any way they knew how.

Chair flying encompassed a large portion of many participants' pre-flight preparation, especially as students. Every participant was familiar with chair flying and had practiced it at some point. It is worth noting, however, that even though chair flying is a recommended training exercise, formal instruction in the method of chair flying was not being provided at the time these interviews were conducted. Participant 8 noted this discrepancy: "It's interesting because everybody says 'chair flying', but nobody really teaches anybody how to do it". Participants described learning their own methods of chair flying in a self-directed manner or through dialogue with other students and pilots.

Stress Management
13 of the 15 pilots interviewed discussed their experiences with stress in pre-flight preparation and their personal management techniques. Sources of stress and anxiety during the pre-flight phase included general workload (long hours, high task load) and upcoming tests (the thought of having an examiner in the plane, the possibility of failure). Pilots varied widely in the way that they perceived stress and in their coping methods. Participants discussed the use of cognitive restructuring, visualization, shifting focus, exercise, music, socializing at the mess or with family, and breathing as methods of controlling their feelings of anxiety or stress.

> *The fact is, rather than be nervous [before a test] I would tell myself 'what do you have to lose?'. . .And if I don't care as much, I find I'm more relaxed and I perform way better. (Participant 11)*

> *I would just sit in a room for about five, 10 minutes just to think about the flight and just to try to relax a little bit - especially before an airborne test, because those are stressful. It would help me relax and get more in control. Just think positive. (Participant 7)*

These participants recognized that their control over the situation was limited. By shifting their perspective and focusing on constructive activities that were under their control, these pilots were actively creating improved conditions for success.

Mission Execution
The mission execution phase begins when the pilot arrives on the flight line to conduct the pre-flight checks and strap in to the aircraft.

Focus
Participants described an effective mission execution focus as being in the moment. This involved shutting out all other irrelevant or unnecessary stimuli and being able to broaden or narrow their focus, as required by the task. Being in the moment also included an element of anticipation and an ongoing connection with the aircraft and the flow of tasks.

> *Your focus narrows and you're not thinking about other stuff. I can have outside stresses at home and it won't affect me. . .as soon as I get into the plane I don't think about it anymore until I'm on the ground. (Participant 12)*

Participants were constantly thinking ahead to what would happen next and preparing themselves before they needed to act. In this way, the pilots were able to move fluidly and effectively from one task to the next, without hesitation.

Participants also described themselves as high in situational awareness [SA], which was defined as a working knowledge of the environment, including air traffic, weather conditions, aircraft status, and task demands. This awareness can be either temporal or spatial. A broad SA allows a

pilot to direct his/her focus appropriately and avoid being caught off guard.

> *You can have a plan, but the plan can change very, very quickly. So having situational awareness throughout changing environments would probably be the number one thing. Everybody [can learn] the hands and feet, but it's the thinking part that's the most important. (Participant 15)*

As participants became more experienced as pilots, they increased their SA through greater familiarity with the possible situations they could encounter in flight. The ability to perform routine procedures without conscious thought also allowed pilots to focus more on their surroundings and other SA relevant stimuli.

When fully focused, participants were connected with their task and the mission in a natural, organic, or free flowing way. Participants described completing tasks without consciously thinking about them, by trusting in their abilities and simply allowing their bodies to perform the movements that they have trained them to do.

> *[Do I] get into a groove and do it? Yeah; especially when you get very comfortable with it. The more time you have in the airplane, you know that feel of the aircraft – or muscle memory, brain memory or whatever it is – if something feels a little weird you'll just go 'okay something's off here' and you'll be able to anticipate or change. (Participant 8)*

Participants described feeling connected to the airplanes, as if the aircraft was an extension of their human body. Many participants found that when they attempted to consciously think about familiar maneuvers or actions they inhibited their own performance.

When faced with an emergency situation, many participants noted that their responses seemed to occur almost automatically. They recalled not having to think about what they were doing, but

simply allowing their training and instinct to take over.

> *Everything changed at that point. Everything we'd been training for, because we always simulate [losing engine thrust], and at that time I knew it wasn't simulated. So I just took control from him [student pilot] and brought the airplane back. I just did my drill. (Participant 4)*

Before going up in an aircraft pilots were well aware of what their priorities were in an emergency; thus, they knew which tasks needed to be completed first. Knowing or establishing priorities in an emergency was a key factor in decisive action. In addition, the ability to recall relevant past experiences and responses and adapt those to the current situation was an important performance and survival skill.

Distraction Control and Refocusing

When participants were aware that they could become distracted during flight, they often used verbal cues to prevent their focus from shifting away from where it needed to be. For example, when attempting to complete a maneuver that had been difficult in the past, participants sometimes spoke out loud the various steps they needed to follow as they progressed through the maneuver.

> *On one trip, I was just all over the place. I wasn't settling in. And I was flying with this guy, he told me 'just talk yourself through it'. And I started to do that, and I'd say 'plane, line, hinge', and those are the three references that we use, and I was forcing myself, as I said it, to look at those different spots on the airplane. (Participant 10)*

Participants found this strategy to be useful during slower maneuvers to ensure that they did not overlook anything important and to guide their focus to the appropriate steps in the sequence.

As soon as a pilot found that s/he was distracted, the immediate response was to attempt to refocus on the task at hand as quickly as possible. Refocusing generally involved three components: compartmentalization of the distractor (blocking it out of one's mind and moving forward), prioritization of the remaining tasks, and shifting focus to the new priority.

> *I just tell myself, or the rest of the crew, 'okay, that happened. We can't fix it now; it's too late. We now have to concentrate on the next thing'. And it's either tell them that too bad, that's a fail point if it was a test, or it's a thing that we're gonna have to talk about later. (Participant 9)*

For the majority of pilots, the second step of prioritization was simply a matter of returning to standard procedure. This prioritization component was especially important when participants experienced task saturation (being distracted by an overload of tasks).

> *That took personal training to tell myself if that's happening to me [task saturation], I need to figure out if there's a red ball that's the most important ball. And if you see four balls coming at you, I don't care about the other ones, just catch that red ball. And just use that as the how to get yourself out [of the task saturation]. (Participant 2)*

After determining the order of tasks pilots focused on the top priority first, eventually working through most or all of the remaining tasks on the list. When attending to the most urgent priority, pilots were able to refocus and quickly re-engage in what was most important at that point in the flight.

Confidence

Pilots described three major sources of confidence: personal abilities, fellow pilots, and safety precautions. Participants used various psychological skills to strengthen or enhance their personal confidence. Participant 11 discussed the use of positive self-talk when he was unsure or hesitant in a flight situation:

I was pretty nervous going through [flight school] and as I progressed I began to learn that this nervousness was hampering me. And if I just told myself that I knew what I was doing, I found I calmed down a little more and I was able to see a little more; the horse blinders came off a bit.

Many other participants realized that being less than perfect was acceptable and used their less-than-best performances as learning experiences. Participants also felt that their confidence was affected by their pre-flight preparation.

> *It's almost like you worry about it up until the moment [of the flight], but then when the moment's there you kind of go 'you know what, I just have to go and do what I've been taught to do' or 'do what I've trained to do'. (Participant 8)*

These pilots trusted that the RCAF instructors and training program had given them all the tools that they would require to fly safely and perform at the highest level.

The importance of having a high level of trust in one's fellow pilots was implicit in many of the comments made by participants.

> *Trust is very important. I have flown with people I didn't trust. You pay closer attention to what the individual is doing and double check all his or her switch selections. I would even ask questions to clarify their intentions prior to doing a maneuver. The trust is initiated in the training environment but must be continuously maintained throughout your flying career. We have a saying in the Air Force: You are only as good as your last flight. (Participant 5)*

When a pilot is able to trust his/her fellow pilots, it becomes easier to focus on the task at hand and

all the other important elements in his/her broad situational awareness.

Due to the high risks involved in military flying, personal safety was a top priority for all participants. Some participants gained confidence from the knowledge that they had taken precautions to ensure their safety through pre-flight preparation and also by avoiding unnecessary risks. Participant 13 stated, "I'm always thinking about 'what if this happens; what will I do?' And the minute I don't have any more options, I'd rather be on the ground". Participants maintained their confidence through the knowledge that they were aware of their own personal limits (the point at which they could not safely recover the aircraft). Participants learned their personal limits gradually, over years of flight experience. Once they had pieced together a firm understanding of their limits, pilots respected these boundaries as absolutes.

Stress Management

Stress management during a mission execution was most evident when participants were in test situations or completing new or unfamiliar maneuvers. Flight tests often created the highest levels of perceived stress for students and professional pilots. During tests, many participants found that their desire to do well and please the examiner hampered their ability to focus and act automatically. Participants described trying various approaches to deal with their feelings of stress in test flights. For some, approaching the flight with the mentality that there was nothing to lose helped to alleviate the symptoms of anxiety. One participant reported that he would consider the possible outcomes of a failed flight and ask himself whether he could accept or live with those consequences. Once he had accepted the worst possible outcome, he resolved to simply do his best. Several pilots described putting aside or compartmentalizing their thoughts of the examiner and refocusing their attention on the task at hand, as they would do in a routine flight.

Ongoing Learning

For all participants, ongoing learning was an extremely important facet of optimal performance. Flying was often described as a continuous adjustment to the ideal. Participant 12 stated, "Flying is just a constant correction of errors, that's all it is. You're always fixing something that's going wrong". Because pilots have many decisions to make and little time in which to consider them, they accepted the fact that a portion of these decisions would be incorrect, or not ideal. What was important was not the correctness or incorrectness of their decisions, but rather the ability to analyze those decisions, recognize the errors, and adjust if necessary.

> *[The most important skill is] the ability to make a decision and to rationally think out different options; not just making a decision and sticking with it, but being able to continually assess that decision and update it and make the proper decision at the end of the day. (Participant 1)*

During flight, participants constantly analyzed their decisions to determine whether they had selected the most ideal course of action. In-flight analysis was completed as quickly as possible and once a pilot recognized an error or identified a more appropriate action, there was no hesitation before the new plan was implemented.

Post-Flight
Ongoing Learning

Following every flight, pilots engaged in a detailed debrief in which the various segments of the flight were analyzed, mistakes were pinpointed, and corrective measures were suggested. Many participants noted that the tools or strategies for "how to improve" were the most valuable product of the debrief, as they were frequently well aware of their mistakes as soon as they had made them. The idea of owning one's mistakes was also very important to all participants.

I look at what happened, what I did, what could I have done better so that I can learn something. But I also take into consideration that it's always easier after the fact to analyze because I also think about what I had, the information that I had at the time, and the time that I had [to respond or react]. (Participant 13)

Pilots accepted responsibility for their actions while also recognizing that they are acting within certain situational parameters. Participants analyzed their actions, the information they used to arrive at those actions, the environmental factors, and their frame of reference (i.e., what they believed to be true) going into that flight or maneuver.

Pilots described engaging in personal and group debriefs as well as one-on-one debriefs with the flight instructor or examiner. Participant 15 shared the lessons from post-flight debriefs with others: "There's always lessons that you learn from it . . .I usually share them, because everyone can always learn from other peoples' experiences". Group debriefs presented pilots with a valuable opportunity to learn from others, as they were prompted to consider possible events and responses that they may not have previously regarded as important, or even plausible. Participants were especially concerned with and committed to learning from their debrief following a less-than-best performance.

You don't want to be afraid of failure. It may happen from time to time - none of us are perfect - so the guys who can bounce back from that, actually use that to feed on, they tend to be quite successful. (Participant 2)

Many participants took this opportunity to recognize their imperfections and accept that making mistakes and growing from them are part of the learning process.

Stress Management
Pilots discussed the importance of dealing effectively with criticism, as it remains a large part of the pilot training system. To deal with criticism in a constructive way, participants attempted to extract the most useful information from the comments and disregard the negative aspects (for example, something that may be perceived as a personal put down).

Some guys just like to destroy you, so you just kind of sit there and suck it up. And then you have to be strong mentally when you go out the door, and take everything he said and put that in perspective and say 'Whatever. Yeah, I agree with this and this, but I don't agree with that. And I'll show you next time, I can do it'. (Participant 7)

Participants tried to prevent any internalization of the critical remarks, reminding themselves that the instructors were not attacking them as people but were trying to help them to become better pilots.

Discussion
The purpose of this study was to explore the use of psychological skills by elite Canadian military pilots. This investigation was conducted within the framework of Orlick's (2008) *Wheel of Excellence*. The results of this research reveal that Canada's elite military pilots incorporate all seven elements of Orlick's *Wheel of Excellence* into one or more of the three flight phases (pre-flight, mission execution, post-flight). These findings are consistent with the conclusions of previous investigations in elite sport such as Fournier et al (2005) and Gould, Eklund and Jackson (1992). This research is also consistent with findings in other high-risk activity performance domains (Burke & Orlick, 2003; Coleman & Orlick, 2006) and supports the validity and relevance of Orlick's *Wheel of Excellence* within the context of elite military aviation.

The element of commitment was an integral component of success for pilots in all phases of flight training and flight performance in the military. In their research with National Hockey League players, Barbour and Orlick (1999)

found that NHL players rated commitment highest in terms of importance as well as their own perceived proficiency. Pilots also identified commitment as an essential component of success in military aviation; however pilots seemed to vary markedly in their perceptions of the most important mental skill. Barbour and Orlick further noted the integral role of fun and enjoyment in the enhancement of player commitment and retention. They suggested that fun and enjoyment be recognized as a distinct element of success in the pursuit of excellence. Every pilot in the present study also indicated that some aspect of flying consistently brought him/her enjoyment or positive, uplifting feelings. Pilots cited various sources of positive feelings, including the challenge of the occupation, the camaraderie of the RCAF, their roles as instructor pilots, and the unrivaled freedom of being in the air.

Participants felt that an extremely critical component of their mental readiness was the extent to which they had prepared for potential incidents or other unforeseen events that occurred during that flight. Pilots accomplished this mental readiness task by anticipating possible circumstances drawn from their own knowledge and experiences, as well as by engaging other pilots in discussions of their past experiences in similar missions or contexts. High risk performers in studies by Coleman and Orlick (2006) and Burke and Orlick (2003) also reported detailed planning in the pre-performance phase of high-risk activities; however neither big mountain free skiers nor successful Mount Everest climbers engaged in this type of consultation with their peers. The military pilots' reliance on peer discussion is a unique aspect of flight preparation that is not noted in past research in high-risk sport. While it was impossible for pilots to plan for every possible circumstance, it was important for them to enter each mission knowing that they had had done all they could to prepare themselves for expected and unplanned incidents.

Mental imagery, or chair flying, was an integral component of the pre-flight preparation phase for every pilot in this study. Roth and Andre (2004) suggested that chair flying could be equally effective as simulator based training in preparation for a simulator flying task, but that further research was required to determine whether chair flying is effective in preparation for real missions. For the elite military pilots who participated in this study, chair flying was an essential and effective component of preparation for real missions. Orlick (2008) stated that the world's top performers use mental imagery every day to prepare themselves for training, to perfect or make corrections to technical skills, to overcome challenges, to see themselves achieving their best, and to improve their confidence in their abilities. Pilots in this study utilized imagery in a similar way, with an emphasis placed on skill acquisition, skill refinement and error correction. Pilots incorporated mainly visual and kinesthetic (i.e., physical movements) modalities into their chair flying practice. Some pilots also included auditory elements, such as hearing radio calls, and one participant reported that he could feel the sensations of being under G (the force of gravity). Munroe, Giacobbi, Hall, and Weinberg (2000) found similar results in their investigation with 14 varsity athletes. Results showed that athletes incorporated visual, auditory, olfactory and kinesthetic elements into their mental imagery. The pilots in this study reported using mainly visual and kinesthetic components with limited usage of auditory elements and no mention of olfactory elements. This presents a possible avenue for improved performance by enhancing both the quality and diversity of this part of current pilot and student preparatory routines.

Past research has questioned whether the amount of deliberate practice or mental imagery required for excellent performance decreases once a performer attains an expert level of performance (Durand-Bush & Salmela, 2002; Krampe & Ericsson, 1996). The current research conducted with elite military pilots supports this theory. Pilots reported that the majority of their chair flying was performed during their training in flight school when they were frequently learning

new and challenging procedures and techniques. As they became increasingly familiar with the aircraft and the various maneuvers, they reported a decrease in the amount of time spent chair flying. Later in their careers, pilots would return to chair flying when preparing for important tests or missions, when transferring to a new aircraft, when on deployment, or when returning after time away from flying.

In their work with big mountain freeskiers, Coleman and Orlick (2006) reported that confidence was linked to sufficient and effective preparation, including safety measures such as back-up plans and safe zones. The present research involving military pilots supports the importance of this finding. One pilot stated that the only instances in which she felt a lack of confidence were those for which she felt that she was insufficiently prepared. RCAF pilots also placed a great emphasis on personal safety measures, as they were aware that many preventative steps could be taken to execute the mission in the safest way possible. McDonald, Orlick and Letts (1995) reported that elite surgeons enhanced their self-confidence by controlling their situation through positive thinking, selecting their own team members, and postponing surgery if necessary. Pilots devised similar methods of gaining control over their physical selves and the environment to enhance their self-confidence. The methods used by pilots included positive thinking and positive self-talk; maintenance of physical health and fitness levels; and planning flights according to weather conditions. Pilots recognized what they could control and actively attempted to manipulate those variables in positive ways. In addition, pilots deliberately cultivated a keen awareness of their own abilities and limitations. If their abilities to successfully complete a mission or a maneuver were in any way compromised or questionable, in the same way that surgeons would postpone surgery, pilots would simply not fly.

All pilots interviewed for this study reported that a connected focus was essential in order to excel in flights and missions. Pilots described their best focus as one in which they were in the moment, connected to their tasks, thinking positively, maintaining a broad SA (situational awareness), and using their capacity effectively. Werthner (2002) identified trust as a specific component of an effective 'in the moment' focus. Werthner reported that elite athletes strive to balance the cognitive aspect of monitoring performance with the more instinctual or trusting aspect of simply allowing one's body to perform what it has done many times before. The pilots in this study also seemed to maintain such a balance of focus and trust as most of the routine mechanics of flight were performed without deliberate or conscious thought. The countless hours spent engaged in missions, chair flying, and other preparatory activities allowed pilots to carry out these actions with minimal attention while simultaneously processing other inputs and prioritizing tasks.

Pilots use the term capacity to refer to the ability to monitor multiple stimuli and shift attention to what is most important. Pilots tried to build and strengthen their capacity during their pre-flight preparation by attempting to replicate the multi-input, dynamic environment of the cockpit when studying or chair flying. Some pilots believed they could create a similar effect on the ground by engaging in a secondary activity, such as juggling or bouncing a ball, while focusing on their flight-related preparation (mental imagery or reviewing written material). These pilots felt that by using this technique they could improve their ability to monitor multiple variables (some subconsciously) without becoming overwhelmed or losing focus on the most important task. This strategy of intentionally incorporating multiple stimuli into preparatory activities is a simple one; however it is not specifically addressed in aviation research or other high performance research to date. This technique might provide a valuable contribution to the field of sport and performance psychology. The effectiveness of such a practical activity is worthy of further exploration for performers engaged in fast paced, multifaceted performance environments, especially those with the potential for extreme outcomes.

If pilots did become distracted in flight, for example by an error or an unexpected event, the typical refocusing process for these elite pilots seemed to follow a distinct set of five steps: (1) identification of distractor, (2) recognition of degree of control over distractor (3) compartmentalization of distractor, (4) reprioritization of tasks, and (5) execution of top priority task. Many pilots reported using cue words or phrases such as "what's next?" to prompt their rapid refocusing. Performers in other domains have reported using compartmentalization or thought stopping strategies to block out unwanted or harmful distractions (e.g., Orlick & Partington, 1988; Zinsser, Bunker & Williams, 2001).

One aspect of distraction control and refocusing that does not to appear to have been addressed in sport psychology literature is a pilot's conscious thought process of task prioritization that often follows compartmentalization. This may be due in part to the unique performance requirements in military aviation (i.e., there are many tasks to attend to within a very short period of time, given the high speed at which they are flying). The complexities of flying an aircraft in a busy or dangerous airspace require that a pilot must be prepared to organize a multitude of tasks before attempting to complete them. As students, pilots often relied on a pre-planned RCAF prioritization scheme of "aviate, navigate, communicate". In any situation, pilots knew that their first priority was always to aviate (i.e., keep the aircraft from hitting the ground). As simple as it sounds, this gave pilots a starting point on which they could refocus and proceed with determining the necessary steps to gain control of a complicated or overwhelming situation.

Orlick (2008) stated that personal excellence arises from stretching one's limits, engaging in thorough post-performance evaluations, looking for positive elements as well as areas for improvement, and acting on the lessons learned from one's experiences. These elements of ongoing learning and self-reflection were a consistent component of excellence for all pilots interviewed. Upon the conclusion of every

mission, pilots analyzed both good and bad elements of the flight, drawing out specific learning opportunities and lessons for ongoing improvement. Student pilots and experienced pilots focused on finding the tools to address any mistakes that had been made. Pilots often referred to their toolboxes, which they continually stocked with tips and bits of information gathered from debriefs, personal studies or experiences, and discussion with peers. Once an appropriate tool or lesson was discovered for a specific error or opportunity for improvement, pilots immediately attempted to put that tool into use and focus on performing that maneuver correctly during the next flight.

Many pilots reported that they engaged in personal debriefs during their own time, following the formal flight debrief. Contrary to the findings of Orlick and Partington (1988) – that Olympic athletes used reflection and personal debriefs to continue to improve their mental skills – the pilots in this study seemed to focus almost exclusively on mechanical aspects of the flight during debriefs without directly addressing the role of their own psychological skills or their best focusing and refocusing skills. Only occasionally in this study did pilots mention reflecting or debriefing on their own focus, for example if the flight or part of the flight was exceptionally poor or if an error was made needlessly. It appeared that emotions that were experienced during the flight were also rarely discussed.

Hogg (2002) stated that a successful debrief requires "a desire to reflect on all aspects of performance with the intention to make changes" (p. 184). We would add that a successful debrief should help pilots and other performers reflect on their own best focus (when things are going best) and to find ways to respect that best focus consistently. This research has shown that psychological skills are a critical aspect of optimal performance in military aviation, so these skills should become a normal or structured component of debriefs in military aviation. Because these mental skills play such an integral role in quality or optimal

performance, it would be of immense value in the future for military pilots to include psychological skills training for student pilots as well as include normal ongoing focus reflections in both formal and personal debriefs.

Stress management, or activation control, was an important aspect of successful performance for all pilots in all phases of flight in this study. Orlick (2008) discussed stress control and positive recovery from setbacks as components of distraction control. Pilots reported widely varying strategies for stress management or reduction such as exercise, positive self-talk, meditation, time off, compartmentalizing, and socializing. Some pilots felt that stress was simply a part of the job and should be accepted as such. When stressed, these pilots reported simply focusing on the task and doing whatever was required to complete their goal. While it is possible that the considerable variation in stress management tactics may be the result of a lack of formal training in such techniques, research in sport has indicated that the use of diverse arousal management techniques is common among elite performers (e.g., Gould, Finch, & Jackson, 1993; Lazarus & Folkman, 1984; Nicholls & Polman, 2007). Different performers may simply prefer different strategies, depending on the nature of the stressor.

It is interesting to note that during routine flights, pilots generally did not experience anxiety or fear. In the rare event that a pilot felt anxious leading up to a flight, these feelings were dispelled in the moments prior to take-off when the pilot narrowed his/her focus to complete the routine checks. Similar patterns of activation have been identified in Olympic gymnasts (Mahoney & Avener, 1977) and sport parachutists (Fenz & Jones, 1972). These performers recorded elevated levels of anxiety (physiological indicators) up to some trigger point (e.g., for sport parachutists, this trigger was the starting of the plane engine). After the trigger point, anxiety levels decreased substantially and remained low for the duration of the performance. For many pilots, this trigger point appeared to be the act of strapping in or taking

their seat in the cockpit. Researchers seem to agree that in these circumstances performers exert some type of control over their arousal levels prior to performance; however, the nature of how arousal levels are controlled has been relatively unexplored. Coleman and Orlick (2006) reported that the big mountain freeskiers attempted to control their pre-performance activation by deliberately taking deep breaths, calming themselves and clearing their minds at the top of the hill just before executing the run. Some pilots in this study felt that a certain level of activation was good for optimal performance. Their shift to a calm and fully connected focus seemed to occur naturally, when they immersed themselves in fully connecting to their normal take-off routines.

The pilots interviewed for this study demonstrated a strong desire to take responsibility for their errors and to find ways to continue to make improvements, for example by acting on the lessons learned from post-flight debriefs. During debriefs, errors made during the flight were reviewed and analyzed, and tools or suggestions to improve future performances were discussed. This was a humbling experience for many pilots. Student pilots sometimes received frequent and targeted critiques of their actions, however experienced pilots also received this type of criticism at times during tests, important missions, or when flying with the Snowbirds (formation aerobatic flying). Anshel and Gregory (1990) suggested that skilled athletes cope with acute stress (e.g., criticism) by blocking out negative or harmful elements and assimilating and implementing information that will benefit future performances. The present research supports this finding: To cope with the potential negative effects of receiving criticism (e.g., distraction, decreased self-confidence) many pilots made a conscious effort to adopt a positive perspective. Pilots reported taking ownership of their mistakes, looking for tips they could use, blocking the negative components, staying focused on their goal (of becoming an excellent pilot), putting the experience in perspective and acting on the lessons learned.

Thompson and McCreary (2006) suggested that stress management techniques should not be taught as unique or dissimilar from other typical responses to military situations (i.e., to be used only in special circumstances involving stress). Rather, these mental skills should be thoroughly "integrated into all relevant training opportunities so that they become reflexive in the same way that technical proficiencies are reflexive" (p. 3). Interestingly, the pilots who reported experiencing little or no stress on a day-to-day basis were those who saw stress management techniques as natural and automatic. While others might consider these techniques to be specific tools to cope with stress, these pilots saw them as normal reactions to normal (stress enhancing) situations. Thus, the strategy proposed by Thompson and McCreary is supported by this research and may be an effective way for the RCAF to begin introducing and sustaining stress management training.

Conclusion

The purpose of this investigation was to gain an understanding of how elite Canadian military pilots use psychological skills to perform successfully in this highly demanding occupation. Results showed that Orlick's (2008) *Wheel of Excellence* is highly applicable as a model of performance psychology for military pilots. Pilots used elements of the model in three temporal phases of flight: pre-flight, mission execution, and post-flight. Commitment was an integral element of successful performance for all pilots and was evident through all stages of flight and, in many cases, prior to enrollment in flight school. Looking forward towards the future, this research has highlighted several important elements that could be effective in an MST program within the RCAF or other military aviation programs.

The pilots of Canada's Air Force who participated in this research are a unique group of men and women who possess incredible talents and an inspiring level of commitment. These pilots train with a level of focus and commitment that, to many, may seem unsustainable. Driven by a love of flying and a desire to achieve personal excellence, these pilots understand that high quality training leads to high quality performance; and when these pilots are called to truly perform, there are no second tries. The elite performers of the RCAF possess many psychological skills that enable them to perform consistently in their highly demanding roles. In an environment where circumstances can change at a moment's notice, where decisions must be made instantly, and where every action has a consequence, effective psychological skills can empower pilots to gain their wings, execute missions, recover from emergencies, save lives, and contribute to a better and safer world.

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POSITIVE LIVING INTERVENTION WITH UNIVERSITY STUDENTS

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Paige Walton is a recent graduate from the School of Human Kinetics at the University of Ottawa. The content of this article is based on student evaluations of a fourth year university course on Quality of Living taught by Dr Terry Orlick. This research focused on carefully examining student logbooks (or personal journals) to gain a deeper understanding of the students experiences, perceptions and personal applicability or implementation of the skills being taught in the course. We were also interested in gaining a deeper understanding of the students views on the potential universal value of teaching positive living skills to all university students.

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Part 1: Introduction

APA 4117, Quality of Living: Theory, Research and Application is a course offered by Professor Terry Orlick PhD that is designed to help students obtain the knowledge required to improve the quality of their own lives, and the lives of those around them. Dr. Orlick guides his students to a higher quality of living using various tools including relevant readings on Positive Living Skills, self reflective questions, interactive activities, guest speakers who have discovered positive ways to enhance the quality of their own lives, relevant video clips, focus enhancing tools and perhaps most important a Highlight Journal to increase their daily Highlights and their overall awareness of their current quality of life and what it takes to improve it.

Two of Dr. Orlick's books : Positive Living Skills: Joy and Focus for Everyone (2011) and Embracing Your Potential: Steps to Self Discovery, Balance, and Success in Sports, Work and Life (1998) are the primary reading materials for this course. Each week, chapters from one of the books were assigned for students to read and remember. Students were asked to reflect on the skills presented in those chapters

and attempt to implement the skills they found most important into their own daily lives.

Students were also presented with a Quality of Living Project. This project was assigned during the first class as a 'highlight journal'. Students were asked to record anything that they read, acted on or learned that was relevant to enhancing the quality of their lives. The guidelines of this project required a minimum of 3-4 entries in the journal per week as well as a two page typed reflection to conclude the journal after 12 weeks. This summary was designed to identify what each individual had learned, acted on, valued most and what obstacles he or she faced and worked through or overcame along their path to a higher quality of living.

Part 2: Positive Living Skills Project

The primary purpose of this Quality of Living study was to carefully examine each of the Highlight Journals (Logbooks) and lessons learned summaries submitted by each student in Dr. Orlick's Quality of Living course to determine which positive living skills were most commonly used by the students, which techniques were identified as being most valuable for stress reduction and to discover the extent to which the students felt this class had or

did not have an impact (positive or negative) on their overall lives. A wide variety of Positive Living skills were taught by Professor Orlick in this class. An in-depth analysis of each of the students journals demonstrated that several key positive living skills or positive focusing skills were universally applied by all students in real world contexts. The following summary provides the most universally used skills by the students in this unique Quality of Living class:

Fully Connected Focus:

Dr. Orlick describes a fully connected focus as "a complete, positive connection with an experience, learning opportunity, performance, action or interaction. There is a feeling of being totally absorbed in the experience, becoming the experience, or inseparable from it" (Positive Living Skills, p101). One student described the phenomenon as follows: "a fully connected focus does not dwell on the past or the future. It keeps you centered in the present – even when you are planning a new path or a better future" (student 32). The students in this class truly embraced the real world value of this skill and used it often. Virtually all students commented that they experienced positive benefits from being fully connected in the moment, whether it was related to increased appreciation of different parts of their life or personal performance enhancement. For example, student 2 noted: "I learned that I cannot benefit from the positive nature of my highlights unless I am fully focused on them." Another student found that being fully connected in the moment aided in their school work claiming "whenever I was in a lecture or studying, I would always have Facebook and other distractions on my computer. Now after this quality of living project I almost never go on Facebook and I am really enjoying the freedom it is giving me. Also, my grades have gone up because I am focusing on the task at hand, and really living in the moment of each lecture and each assignment" (student 6). Both of the above students were able to use this skill in different parts of their lives to achieve a positive outcome that was important to them. Student 42 shared the benefits of a fully connected focus in regards

to his/her journal entries with the following statement: "My journals are a true testament to how to improve focus and how much being truly connected in the moment can improve the quality of one's life. Using Dr. Orlick's 8 pillars of focus as a guide, I was able to better connect with moments in my life and find appreciation and joy in the little things."

Wheel of Focus

Having a Positive Focus & Positive Perspective:

Much like a fully connected focus, a positive focus is also universal in its application. Dr. Orlick describes the value inherent in positive focus as relevant to all people and all areas of life; "It brings people up. One person with a positive, constructive and connected focus (especially with the help of other positive people) can raise the spirits, hopes, confidence, performance and lives of millions of people, families, teams, schools, organizations, communities and countries throughout the world" (Positive living skills, p.34).

The students in Dr. Orlick's class found that living life through a positive lens aided in eradicating negatives and enhancing simple joys. From reading chapter 4 in the *Positive Living Skills book*, Student #19 learned to focus on the positive things that he/she was doing and to let go of the negative things; "this wasn't easy but I know that having negativity in your life prevents you from living a truly positive life…There is a positive aspect in everything. Not every day is a

good day but there is good in everyday." In another situation, a student discovered how to take control of their perspective. Student #40 was able to view life in a positive light consistently, by learning to find simple joys in various domains of their life. This in turn led this person to becoming a stronger, happier person even when things were not going well in one aspect of his/her life.

In all of Dr. Orlick's written material as well as in his classes, there is great emphasis placed on the fact that we make choices. Whether you choose to do something or choose to do nothing, you are making a choice. As stated in his *Positive Living Skills book,* "If YOU want to make positive changes in your life, you have to stop long enough to think about your own life, reflect on what you would like to improve or change, and come up with a positive plan for action" (p.35). " Then you have to ACT on the Plan! Otherwise nothing will change!" (Orlick comments in class). Many students were moved to action by this simple statement.

For example, Student 33 expressed that this course "completely turned things around attitude wise" … and proclaimed "once I experienced the feeling that goes along with living a positive, joyful, fulfilling day. I knew I wanted to replicate that as much as possible." In another student's summary he/she affirmed that attitude is everything: "your attitude and outlook on life, situations and relationships is all dependent on what you CHOOSE to do…my attitude allows me to choose whether I want to be positive or negative. Once I chose the attitude to embrace positivity and embrace positive moments, and maintain focus, I was able to see this in a new and clearer light". It seems evident that realizing the importance of choosing the direction in one's outlook and in one's life can have a major impact. Think to yourself, are you choosing to focus on the positive or negatives? Are you seeing your glass of opportunities as half empty or half full?

Embracing Highlights:

In the first class of the semester, students were given a Wheel of Highlights that outlines areas in which simple joys and highlights can easily be found. There are seven key Highlight Domains presented as spokes on the wheel of highlights: Play/Physical Activity, Human Interaction, Nature, Relaxation, Personal Discovery, Positive Sensations and Accomplishments. In previous courses on Quality of Living taught by Dr Orlick, when students were asked to reflect on their Highlights it was common for one or two Highlight categories to dominate their sources of simple joys. Everyone can learn to embrace Highlights or simple joys in any positive Highlight domain, however for long-term quality living (over the course of your lifetime) it is essential to help people discover and embrace meaningful sources of Highlights in as many Highlight Domains as possible. By creating a balance or diversity in your Sources of Highlights, if you are not experiencing any Highlights in one domain, you have six other categories in which to discover highlights for any given day. Multiple sources of Highlights also help to put negative situations (or lowlights) into perspective because you have multiple positive sources of highlights. Student 36 struggled with achieving balance at the beginning of this course and relied primarily on his girlfriend for all sources of Highlights. However, they were in a long distance relationship and sometimes she could not be a highlight for him which in turn led him to feeling negative about his life. He was able to resolve this situation by choosing to implement a Multiple Highlight reeling in method. He chose to begin reeling in highlights from other highlight domains whenever he began to feel the stress, strain or challenge of not having his girlfriend around. This helped him balance his life and maintain the best possible distance relationship with his girlfriend.

Another excellent example of the impact of learning to embrace Multiple Highlight Domains came from student 20 when he/she wrote "an important idea that I discovered in the first few

weeks [of this class] was the concept of 'highlights' and what they can do to improve the quality of my life. To this day I still challenge myself to find highlights through seemingly insignificant moments. Highlights are important and they have helped me learn to put a positive spin on almost any situation. " Student 37 also spoke about challenging himself/herself to find highlights each day and was surprised with just how many occurred: "Another positive thing that this assignment has done to enhance the quality of my life is force me to ask myself at the end of each day 'what was the highlight(s) of my day?' and it was in those moments when I would ask myself this that I realized so many good things happened that day."

Highlights seemed to be the most easily embraced real world action based component of this course and they seemed to be almost contagious once a student chose to start down this positive path. In one summary, a student shared that after an in class discussion session with Dr. Orlick, this student approached another and exclaimed "When you were sharing you're highlights in class today, they instantly became a highlight for me! I was laughing and smiling the whole time!" In turn, this simple act of expressing one's appreciation to a classmate became another highlight for the individual who had originally shared their highlight experience in class. A single highlight shared by one person had now become at least three separate highlights from the students embracing this

experience and finding joy and hope in other students simple joys.

Goal Setting:

Goal setting is a skill that can be helpful in all aspects of life. Whether your goal is to complete a list of chores, or strive to be a better person, simply creating your goals and writing them down is often a first step that leads people to achieving success. At the beginning of the first class, Dr. Orlick asked all students to write down what they believed their quality of life was at that moment on a scale of 1 to 10. Each week during class discussions, students were asked to share what they had tried to do to meet their goals or make some progress towards achieving them. Hearing peers (classmates) share their anecdotes in their quest for more positive living presented itself as a source of motivation and an outlet for innovative applications of the theories presented.

In Dr. Orlick's class, the students' goals could be as small as finding a highlight each day to as large as choosing a new life path. For example student 38 created a very simple goal of smiling at each individual he walked past in his day. By doing this, his goal was to bring a smile to all those he encountered. In a different environment, student 3 used goal setting strategies when dealing with school work; "when challenges were as big as a mountain, management skills allowed me to deal with small chunks at a time. As I completed those small goals, I made sure to reward myself with something positive, something that made me happy." Student 2 embraced a similar approach by taking productive steps towards a large goal, by setting smaller sub goals along the way. This individual found that it allowed him/her to mark their positive progress along the way to see where they were in respect to the finish line.

Part of what the students seemed to gain from this course was that they have the capacity to make choices, positive choices that will direct the course of their lives in positive ways. Student 42 wrote, "Now that I have come closer to

realizing my potential as a person, I know that any goal I set for myself is within reach, it is an amazing and liberating feeling." In addition to the relevant course material, the class discussions and interactive atmosphere allowed individuals to identify their strengths, weaknesses, sources of motivation, energy gains and/or drains, and support networks that could be useful in constructing and sustaining a positive action plan for the future. Most students already had awareness of things they could do or stop doing to live the life they would love to life. However, this course gave them an opportunity to take the time to pause and reflect on where they are now, where they would like to be, and what they can do or act on now to get to where they want to go. Tapping into the Quality of Living information data base and supporting each other on this life enhancing journey provided students with multiply opportunities to fully embrace their potential.

Relaxation Techniques:

Dr. Orlick outlines several key reasons why relaxation is so important in our lives: stress reduction, recovery from stress, more restful sleep, better focus, stronger immune system, and an enhanced quality of life. It was evident that relaxation was a major theme that the students liked, learned from and acted on over the duration of this class (in the classroom and outside the classroom). One effective technique often used was Dr. Orlick's relaxation audio CD tracks. Students would pause, close their eyes, take a time out and listen attentively to a variety of relaxation audio CD's for 5 to 20 minutes. The content consisted of relaxing music and/or relaxing sounds of nature such as a flowing river or quiet chirping of birds, muscle relaxation or relaxed breathing that permitted the listener to escape into a world of serenity. Dr. Orlick's calming voice would guide the listener into taking long, slow, deep breaths, easing them into a state of complete relaxation. The controlled breathing relaxation also included a specific skill called one breath relaxation. This exercise taught students to take a single, long, slow, deep breath in and then release all tension and stress as they

exhaled, allowing them to shift focus and relax completely. Student 9 commented that one breath relaxation worked well for him/her in stressful situations or even "when I just need a moment to regain my focus." Some students also found that inputting reminders on their mobile phones to remind them to breathe or relax reinforced what they had learned in class. Student 12 felt that having a relaxed focus was the most important strategy that he/she learned from the course because "it is the key to being successful in any domain." This individual worked on achieving a relaxed focus from the very beginning of the semester and continued to use it before entering a classroom, game or any situation that required his/her full attention. Student 32 stated "I found that by using the one breath relaxation technique I was able to fully relax before bed or center myself on the task at hand and ignore outside stressors." Finally, Student 7 took the time each day to relax and discovered that a few good minutes of relaxation "did wonders for stress reduction, increasing my quality of living, and harmony."

Chapter 11 in the Positive Living Skills book presents moments of silence as an excellent source of pure relaxation and regeneration. Student #34 explained that this was "another new joy that continues to grow on me more and more each day is embracing moments of silence."

Part 3: Sharing Positive Living Skills with Others

Willful sharing of positive living skills with others was one of the most valued experiences that students mentioned in their summaries at the end of their positive living skills logbooks. They clearly indicated that what they were learning in the Quality of Learning course was valuable not only to themselves but also to their friends and loved ones. They wanted to share what they were learning with their loved ones and almost all of them shared the positive skills they were learning and using with others. The following are a series of quotes from student testimonials to

exemplify the power of Positive Living Skills on the student's lives:

Student 1: "Learning such useful tools at a young age could be very effective in preventing many of the negative behaviors that become apparent in later years…not just for the delinquent ones, but it could also be beneficial to everyone who has had learning difficulties, attention difficulties, problems with self discovery..."

Student 13: "Learning how to deal with stress, cope with negative experiences, grow as a person - we all need these skills when we enter the real world. I have learned a lot from this class that I can actually bring with me after my university life"

Student 43: "Since I've acquired this positive perception of life, I am also able to transmit it to my relatives. I want to provide this opportunity for my family, girlfriend and friends to appreciate simple highlights in their lives"

Student 37: "Before this project I never really took the time to even care about my surroundings and I would constantly be texting while I walked or listened to music which made me oblivious to what's happening in the world around me." Turning this around was definitely a result of the positive impact of this course

Student 35: "I learned one thing from this course that everybody can do, everywhere: stop being in a hurry to do things and take time to realize what's happening. Thus share this moment with other people and highlights will appear"

Student 41: I became more self aware as a result of this class "…this experience helped me gain more knowledge of myself and helped me gain further control on the road which I am travelling"

Student 29: "I can't help but feel that if everyone on the planet paused to reflect about a single highlight every day, the world would be a happier place"

Student 4: "I enjoyed writing each and every journal entry because no matter how I was feeling prior to writing, I always felt better when the pen left the page"

Student 31: "The amount learned in this class is extraordinary, and to think that we are the only student population who has this opportunity seems unfair. Every student at every level should be learning about Positive Living Skills and improving the quality of their lives"

The Next Step:

It is our hope that this generation of students will pass along the message of positive living skills to their children, students, families, friends and successors. This process can begin most easily by choosing to lead by example. It can start with one person expressing their appreciation to another person for something as simple as listening to them, including them, smiling at them, thanking them or holding the door open for them. Every positive action leads to positive feelings and other positive actions. To impact positive real world change on a wide scale, it is essential that we begin teaching Positive Living Skills to children and youth – in our homes and schools. By teaching children and youth Positive Living skills at early age they will learn the essential skills, tools and positive perspectives that are required to live more positive, fully connected, compassionate and less stressed lives. This in turn will help build a better world for all children, all students, all adults and the future of humanity. This is our ultimate goal and we can begin this process at any time, at any age, in any context.

Terry Orlick Resources for Positive Action that can lead to Real World Positive Change:

Positive Living Skills: Joy and Focus for Everyone (2011)
General Store Publishing House: Renfrew, Ontario, Canada www.gsph.com

Embracing Your Potential (1998) and In Pursuit
of Excellence (2008)
Human Kinetics Publishers: Champaign, IL
www.humankinetics.com

Audio CD's Positive Living Skills Audio CD's
Series 1-4.
www.gsph.com or *i-Tunes*

http://www.zoneofexcellence.com

Facebook page:
http://www.facebook.com/PositiveLivingSkills.P
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Enhancing the Lives of University Students

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Abstract

This purpose of this investigation was to identify and assess the effectiveness of strategies taught to fourth year under-graduate students in a Quality of Living class designed to increase the quality of student's lives. Thirty-four students enrolled in a Human Kinetics course en-titled: Quality Living: Theory, Research and Application at the University of Ottawa (created and taught by Dr Terry Orlick) completed a questionnaire at the end of the semester. Five questions were used to investigate the students under-standing of quality living and the strategies they used to influence the quality of their lives. After the twelve-week course, student responses indicated that those enrolled in the course had a greater sense of control over their quality of life and had acquired meaningful strategies to positively influence the quality of their lives and the lives of others.

Introduction

"I'm stressed"! Most undergraduate students have thought this at one point in their post-secondary academic careers. According to the 2011 National College Health Assessment II survey, the American College Health Association (2012) cited stress as the number one factor negatively affecting students' academic performance. The Association also re-ported that seventy-one percent of men and ninety-one percent of women had felt "overwhelmed with all they had to do" in the past twelve months (ACHA, 2012). Pritchard,

Wilson and Yamnitz (2007) found that students transitioning to college replicated the declines in physical and psychological health experienced by first year law and medical students. A Survey conducted by Adalf, Demers and Gliksman (2005) revealed that approximately thirty percent of undergraduate students reported elevated psychological distress and were deemed to be in a state of poor mental health.

In light of these findings, it is a clear that academic institutions would benefit from exploring options that would prevent or alleviate

these stress related issues. Pritchard and colleagues (2007) suggested that future research be aimed at establishing a repertoire of interventions that college administrators could implement to reduce the negative outcomes experienced by students. In Canada, the Ontario College Health Association (OCHA) identified, college and university students as a high-risk population. In their 2009 report, the OCHA recognized universities and colleges as crucial stakeholders in the development of a comprehensive mental health strategy.

"A comprehensive mental health strategy for assessment and early intervention with the student population would have a significant impact on student health and wellness, as well as their ability to be academically and professionally successful."
(OCHA, 2009, p.3)

The OCHA also differentiated proactive and reactive solutions; viewing solutions through a proactive lens as providing students with positive life enhancement tools before problems escalate. In order to best serve future university cohorts, research is required to identify effective interventions used by students to strengthen their ability to effectively cope with the demands of university. Insight into positive strategies students are engaged in will be influential in the design and delivery of a comprehensive strategy to better equip students to successfully meet the challenges of university.

Quality Living Research in an Academic Context

Vaez, Kristenson and Laflamme (2004) suggest that limited attention has been paid to students' perceived quality of life. Instead, most research has focused on students' negative coping responses such as alcohol consumption or smoking. In response to these findings, Vaez and colleagues investigated the perceived quality of life of nineteen hundred and ninety-seven students and nine hundred and forty-seven individuals of similar age who were working full time in Sweden. Results from the study indicated that both male and female students in this study had significantly lower per-ceived quality of life compared to their working peers. As a result, Vaez and colleagues suggested that greater attention be focused on identifying the key determinants of student quality of life. The researchers suggested that this would enable future interventions to have greater success by ensuring that student populations have the necessary tools to manage life at university.

Singh and Choubisa (2009) used a university course as a delivery method for various interventions aimed at increasing students' wellbeing. They analyzed qualitative and quantitative data collected from seventy-seven students who enrolled themselves in a positive psychology course in New Delhi, India. Students took part in one three-hour lecture per week and one tutorial per week over the course of a semester. For a de-tailed description of the course content, please see Singh and Choubisa (2009). The qualitative analysis revealed students endorsed five types of interventions: time management, stress management, three good things, self-talk and best possible self. Quantitative data showed a significant increase in students resiliency score over the course of the study. This research suggested that students endorsing self-management interventions were better prepared to face adversity.

Research Investigation

The purpose of Orlick's Positive Living Skills Program and the focus of this investigation was to identify and document the students' journeys and experiences that they engaged in while at-tempting to increase the quality of their lives over the duration of his twelve-week course. At the University of Ottawa, Dr. Terry Orlick teaches a fourth-year undergraduate course entitled: *APA 4117A - Quality of Living: Theory, Research and Practice.* The objectives of this course included:

1) teaching students to expand their conceptual and practical understanding of positive living or quality living,

2) challenging students to enhance the quality of life by applying personally relevant positive living skills that were learning throughout the course, and

3) teaching students how to continually live, learn, assess and improve the quality of their daily lives (Orlick, 2012, pg. 1).

The course structure consisted of lectures, small groups engaged in collaborative learning, a series of self-reflective questions and a personal positive living enhancement project chosen by the students. The class also required students to read two books written by Orlick en-titled: Positive Living Skills: *Joy and Focus for Everyone (2008) and Embracing Your Potential: Steps to Self-Discovery, Balance and Success in Sports, Work and Life (1998)*. Each book offered a variety of activities that allowed students to self-reflect in meaningful ways about personal positive change and how to implement a positive intervention or put theory into practice. Students attended one three-hour lecture every week (for 12 weeks) where emphasis was placed on collaborative learning in small groups. The primary action-oriented method for meaningful independent learning was a quality living project that was ongoing over the twelve-week semester. For a more de-tailed description of course structure and content, see Appendix A.

Over the course of the semester, students kept a personal journal in which they wrote down anything that they read, did, acted upon or learned that was relevant to enhancing the quality of their own lives. Periodically, Orlick assigned questions that directed students to engage in self-reflection and meaningful ongoing learning. Students were encouraged to write relevant points or lessons from readings, daily experiences, class lectures or class discussions three to four times per week. More specifically, students wrote down life enhancement strategies

that they acted upon in an attempt to increase the quality of their life. Students had complete control over the format of their journal and were given considerable freedom to express them-selves in a meaningful way. Some students included positive pictures, photos, quotes or drawings in their personal journals.

After twelve weeks of collaborative learning, lectures and weekly journaling, thirty-four students enrolled in the fourth year undergraduate course completed a "quality living reflection" from which the following five key questions were taken and analyzed: What does quality living or living your life with quality mean to you? What do you think contributes to quality living or brings joyfulness to your life and the lives of others? What do you think interferes with quality living? What strategies did you act on over the past twelve weeks to increase the quality of your life? What is the take-home message of this course? Note- All the analysis of these Journals was done after the course was completed and all grades were submitted.

Results
Defining Quality of Living

Each student developed his or her own unique definition of quality living. From the thirty-four responses, several reoccurring themes and keywords were identified. Remaining positive, appreciation of simple joys, balance, connectedness, and enjoyment were the most frequently mentioned qualities associated with quality living. Some representative quotes are presented below.

> *Living with more energy gains than energy drains and knowing how to create energy gains. Quality living involves a fully connected focus and a positive focus in all aspects of our lives. We have to embrace the simple joys and stay open to new opportunities to live a life with quality.*

Feeling happy or feeling satisfied was important to high quality of living.

> *Living with purpose and living with balance. Feeling happy with what you have and where you're headed. Having a high level of happiness in your life.*

> *Quality of living is when you feel fulfillment and satisfaction in your life, first with accepting who you are and next in pursuing a worthy goal/purpose. Being satisfied brings joyfulness and happy living.*

Another reoccurring theme involved interactions between a student and another important person.

> *It means connecting in positive ways with our loved ones and having a positive impact on those around us.*

Overall, the twelve-week course allowed students to develop a personally relevant definition of quality living and expand their conceptual understanding of what quality of life meant to each of them.

Contributing Factors to Quality Living

Building on the students' perceptions of Quality Living as a foundation, students were asked to create or identify a set of criteria that contributed to quality living. Responses included a combination of personally relevant factors for each student.

> *Embracing simple joys, simple things or moments every day, re-ally does bring me the greatest joy. Participating in activities I love that energize and re-energize me enhances the quality of my daily living. Being in the presence of people that mean a lot to me also gives me a lot of joy and my pets too.*

The assigned readings in this course offered self-growth oriented questions that could be applied to various domains in each person's life. This served to direct the focus of students to better themselves in simple, positive, meaningful and self-directed ways. They were choosing to enhance their own lives in meaningful, self-appointed and self-directed ways. This was viewed as a contributing factor to quality living.

> *What helped my most was having an area in my life in which I am totally engaged in bettering my-self or attempting to meet my potential*

In response to the assigned course questions, several students created lists of activities that increased their quality of life.

> *Relaxation, exercise, spending time with family and friends, listening to music, learning, traveling and enjoying simple joys*

The students felt that the act of journaling was an important component to the course structure, personal life enhancement and ongoing evaluation. Many students mentioned that self-reflection was a significant contributing factor to in-creasing the quality of their lives over the twelve-week semester.

> *Reflecting on my highlights has brought me a lot of joy since the start of this course. It helped me to look for more highlights and share them with others. The sharing helped me to have positive connections with people around me, making everyone happier.*

> *Knowing what brings you joy. Peace within yourself and being able to find peace around you. Alone time can contribute as well; time to reflect on your accomplishments and your future goals. Good people around you who can support each other is also a contributing factor to on-going positive living.*

Through self-reflection and weekly journaling, students were able to express the key

determinants that influenced their quality of life. The responses provided in this article were representative of common characteristics that students identified in their journals.

Factors that Interfere with Quality Living

In his book, Positive Living Skills: *Joy and Focus for Everyone (2011)*, Orlick discussed how positive living can be enhanced by increasing your positive energy gains and decreasing the negative energy drains in your life. Energy drains create obstacles to positive living or the joyfulness in your life by shifting your focus away from experiences that bring you joy and happiness. This concept was highly endorsed by students when they were asked to describe situations or factors that interfere with their quality of living.

> *My energy drains come from certain people, stressful situations that I have no control over, for-getting to slow down and take control of my perspective and not remembering or not reminding myself that I decide how I feel.*

> *Focusing on my mistakes or losing my focus in my mistakes can turn my focus to the negative. The stress of focusing on negatives is a major energy drain for me and I lose my positive reflection time. The highlights slip past me unnoticed.*

> *Being around negative, energy draining people is not joyful at all and really drags me down. It can ruin my mood for an entire day ... or at least part of it. Being anxious or preoccupied with my health or thoughts about failure really takes away from enjoying life in the moment.*

> *Stressing over the little things and being around people who drain my energy interferes with my quality of living.*

Loss of balance was another commonly cited factor that detracted or interfered with quality living.

> *Not having balance between work and my life outside of school also interferes with my quality of living.*

> *When I'm under a lot of stress, I tend to lose the balance in my life and stop participating in activities that provide me with simple joys.*

Several students used lists to describe the various factors that inhibited their quality of living. Stress, concerns about money, uncertainty, school, fear of failure, worries about academic evaluation and worries about the future were frequently identified.

Strategies/Interventions Endorsed by Students

Students were exposed to a variety of positive interventions from reading materials, class activities, presentations/lectures and from listening and sharing in their collaborative learning groups.

Students' reflections revealed that looking for "highlights" was a commonly used positive living skill that was presented and discussed in many classes. Orlick defines "highlights" as "simple, positive experiences, connections, actions or interactions that bring joy, quality and meaning to your daily life.

"Highlight connections free all human beings to live in more positive and joyful ways every day" (Orlick, 2011, p.61). Orlick also provided students/individuals with Highlight clickers – which is basically a tally counter or clicker that was designed to be used as a tracking method to enhance students' awareness of Highlights or numbers of positive connections experienced in a certain context or in a day. Personal experiences with Highlight Clickers and how to find more Highlights was frequently discussed in collaborative learning groups.

The most beneficial thing that hit home for me was the concept of being open to appreciating the simple joys of life that surround us every day. They often went un-known or unappreciated before I learned what I learned from this class. The word highlight became a key word for me because every time something good happened I would tell myself "highlight".

Stop... Breathe... Look around... Observe... Get lost in the beauty of the moment... This is what has helped me find more highlights in my life. Slowing down the pace of things and appreciating life.

Highlights –once you learn about being aware of highlights… after a while, it comes naturally so that you get excited for highlights throughout the day.

Another important lesson that students learned in this class was how to effectively use cue words to establish a fully connected focus and to refocus when distractions diminished a fully connected focus. Chapters eight through ten in Positive Living Skills: Joy and Focus for Everyone exposed students to a variety of focusing and refocusing techniques that can be implemented to promote a positive and fully connected focus in virtually any context. Orlick (2011) identified eight domains where individuals can improve their ability to sustain a positive and fully connected focus. The value of being or becoming fully focused resonated with the students in this class. Virtually all students discussed and shared examples of various focusing strategies that they used and improved throughout the semester.

Focusing, refocusing: If I find my-self drifting in situations I will say, "refocus" in my head and it really helps. Being fully connected or "in the moment"; this ones

hard at times but when I can live in the moment, I am at my best.

Relaxation and breathing techniques were also taught in this class and discussed in the final chapters of Positive Living Skills: Joy and Focus for Every-one. Relaxation Interventions ranged from practicing one-breath relaxation to listening to a number of Orlick's audio CD's that progressively relax muscles, breathing, as well as imagining relaxing in tranquil nature settings. In addition to learning these different relaxation techniques, many students in this class noted that sports, physical activity, athletics and recreational activities and time in nature were useful for reducing stress.

Relaxation, deep breathing, quiet reflection, relaxing muscles like "jelly", exercising, embracing simple joys (nature, a smile, a hug, an acknowledgment) were all mentioned as effective ways to reduce stress nurture joy and relaxation.

Orlick (2011) defines "docisions" as a decision with an immediate action component. Encouraging students to act upon their positive intentions was strongly evident in the course readings and lectures. Orlick often reminds students, athletes, people and performers in all domains that "Thinking is not enough – Only Action Counts in the real world of positive change".

Docide: The power of the mind. Most of the time, all it takes is a small switch of perspective to see things in a positive light. Communicating your appreciation: sharing your positive thoughts with others makes them feel great AND makes you feel great

Students also increased the amount of verbal appreciation they gave to others as a result of this course. This was reported to have a beneficial influence on both students and those around them.

Making appointments with my self to do things that I want to do. This really helped me balance between my zones (green and gold). I also appreciate my life more and make sure to tell people how much I appreciate them.

The act of journaling Highlights and Personal Progress was deemed a very useful strategy for increasing quality of life. Specifically, increasing awareness of the factors that influence quality of life and keeping a record of what worked and what did not work was very beneficial.

The journal has been most beneficial. In addition to the reflections it forces me to do upon myself, it has been a self-discovery highlight. I have learned more about what matters to me and what is lacking in my life these last 12 weeks than I have ever learned in the past).

The opportunity to experiment with new skills and self-reflect on these skills was reported to be a beneficial experience by the large majority of the class.

Take Home Messages

An overarching theme that was evident in a high percentage of responses was the idea of autonomy and control. At the end of the course, students identified that they were the controllable factor that had the greatest power to influence their own quality of life.

If you want a better life, it is a choice. The skills to make the choices are easy to follow and will help you; you just need to remain open to the opportunity.

Make the choices in life that will bring you the most joy and happiness and strive to live your life with positivity and focus.

There was also evidence that students became more positively action-oriented after taking this course and engaging themselves in the enhanced quality of living project.

The take home message is, don't just think about starting to live positive, ACT on it. Create an action plan and try to improve everyday.

Finally, students were able to recognize that their actions can impact those around them. A positive perspective was identified as a "gateway" to not only make yourself happy but to positively impact those around you.

Make a change in yourself and everyone around you can benefit.

Living life positively and in balance is one of the most important things in our lives. With the right perspective (being positive, open minded, non-judgmental, receptive and accepting of yourself and others) any situation can results in a more desirable outcome. It all depends on you and how you perceive it and how you perceive your control.

Slow down and appreciate what you have, what's around you and who you are. Appreciate life; do

not take anything, even the simplest thing, for granted.

Discussion

The students' written reflections indicate that a twelve-week personal life enhancement intervention integrated into the delivery of an undergraduate course on Quality of Living can be effective for increasing personal resources to enhance subjective quality of life. The students' responses provide evidence that these young adults completed this course with a much better conceptual understanding of what influences their quality of life and meaningful strategies that can be used in making their lives more positive. The voice of these students adds to the growing evidence suggesting that universities and colleges have an opportunity to deliver proactive mental health interventions by further exploring the effectiveness of meaningful student-centered

interventions, which can be evaluated using both qualitative and quantitative approaches.

Future positive living skills interventions and research should be implemented in high schools, junior high schools and elementary school to begin nurturing positive ways of being as early as possible. It would also be of value to conduct follow up studies with students at all levels to assess to the long-term effects of learning positive skills for enhanced quality of living. This will help us in our global journey aimed at providing meaningful Positive Living Skills education to all people, of all ages, in all cultures. This simple positive action oriented step can increase the readiness, resiliency, positivity, stress control capabilities and overall quality of life of children, students and people of all ages – throughout the course of their lives.

Appendix A

Week	Description of Class Activities
1	Define quality of living and explain its significance. Pre-course reflections are completed in class. Course expectations are described and evaluation criteria are explained. Assignment: Read chapters 1-4 in positive living skills book (PLS) for next week.
2	What constitutes a positive, connected focus? Discuss chapters 1-4 of positive living skills in collaborative learning groups. Small group discussion about lessons learned for positive and fully focused connections. Assignment: Read chapters 5-8 in positive living skills for next week.
3	Discuss chapters 5-8 of positive living skills in collaborative learning groups. Small group discussion on how to initiate positive and focused action. Assignments: Read chapters 9-10 in PLS.
4	Discussion on how to strengthen pillars of focus. Assignments: Read chapters 11-12 of PLS.
5	Discuss positive living skills chapters 11-12. Discuss Distraction control. Assignments: Read Embracing Your Potential (EYP) chapters 1-2. Complete self-reflection questions on pg. 14 and 15 of EYP.
6	Discuss chapters 1-2 (EYP). Read Chapters 3-5 in EYP
7	Winter Reading Week - No Class
8	Discuss how to maximize your potential by strengthening relationships and being/feeling/focusing your best in different contexts. Read an article of choice on the Journal of Excellence related to Positive Living.
9	Students hand in reflection on article from *Journal of Excellence*. Students discuss articles in small groups. Collaborative learning groups continue to discuss quality living actions and lessons learned.
10	Group sharing of positive living actions, challenges, benefits and lessons learned.
11	Collaborative learning groups – continue to share progress and positive lessons learned
12	Hand in quality living project; share bottom line lessons learned with classmates, summarize what was most important for you, and discuss final reflections in small groups in class.

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Making a Habit of Happiness:
A Three Week Lived Experience of Positive Thinking

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Abstract

This article examines the notion that through a commitment to positive thinking, happiness, much like daily physical fitness, can become a healthy habit. Using a phenomenological lens, the author conducted a three week lived experience to explore the plausibility of using various techniques, such as short meditation, cue words and positive affirmations, to decrease negative thinking, increase feelings of well-being and enhance relationships. The article also references the revised Health and Physical Education curriculum in Ontario (2010) and suggests that in order for Health Literacy to become a reality in the schools, teachers must model mental *health* and shift the focus of pedagogical practice to mental fitness (as suggested by WHO 2005). Using excerpts from a daily journal recorded "in the moment" to ensure authenticity and spontaneity, the author invites the reader to examine the question: What would it be like to be aware and in control of [one's] thoughts to the point that as soon as [one] recognizes a thought as negative, unproductive or judgemental [he/she] stops and uses a positive word, phrase or affirmation to redirect it? Ultimately, this article serves to open dialogue around the emerging concept of sustaining positive mental health (versus negativity or illness), offers strategies for improving the lives of teachers and students, and demonstrates that replacing negative thoughts with positive ones has the potential to nourish the individual and influence his/her relationships.

Making a Habit of Happiness:
A Three Week Lived Experience of Positive Thinking

The revised Health and Physical Education Curriculum document (2010) serves as a reminder of the importance of health for our children and our schools in the province of Ontario, Canada. The document embraces a message of prevention with a focus on balance. In particular, the Healthy Living Strand spotlights emotional well-being and positive mental health by balancing the physical, intellectual, social, emotional and spiritual aspects of a child's life and states: "A person with good mental health is able to think, feel, act, and interact in a way that permits him or her to enjoy life while being able to cope with challenges that arise" (Ministry of Education, 2010, p.33). Health literacy has been established as a goal of the new health curriculum which will serve students by enriching their sense of connectedness with the world and with themselves through reflective awareness (Anderson & Booth, 2006, p.30). The revised curriculum indicates that educators must serve as role models for our impressionable children: the integral teacher-student experience. The

influence of an educator who embodies positive thinking would, in my opinion, have a more powerful and effective impact than one reading a script or handing out worksheets to students about the topic. Considering the dim prediction that the 2nd largest contributor to the disease burden by the year 2020 will be depression (WHO, 2001c) it is totally justified that more attention is being given to the role of positive mental health and prevention of disease. According to the World Health Organization (WHO) "mental health implies fitness rather than freedom from disease" (WHO, 2001c, p.14). If educators are to truly embrace this approach to holistic health, than they must lead the way and set a positive example. It is not enough, in my opinion, for educators to be passive in this endeavour. Rather, they have an obligation to embody the philosophy and find ways of promoting positive mental well-being for themselves so that it can transcend to the lived experience of the student.

Paradigm Shift

Over the past decade, increasingly more attention has been given to research that promotes positive mental health, particularly for children and adolescents. Recent research in the area of mindfulness (Burke, 2009; Huppert & Johnson, 2010; Schonert-Reichl & Lawlor, 2010) suggests that there is a need to shift the spotlight from treatment to prevention. Proponents for using mindfulness meditation techniques such as MBSR (mindfulness-based stress reduction) and MBCT (mindfulness-based cognitive therapy) with children and adolescents recognize that much of the work done so far has been focused on treating problems (Burke, 2009; Huppert & Johnson, 2010) and not on preventing and maintaining health.

Mindfulness is a way of paying attention and bringing a conscious awareness to the present moment (as cited in Huppert & Johnson, 2010, p.265) and mindfulness practices can produce a calming and centring effect because at the core is the concept of being open, receptive and non-judgmental (Schonert-Reichl & Lawlor, 2010).

Definitions of mindfulness are proliferative, yet the common theme intersecting all explanations is that mindfulness is a way of focusing one's attention in the present and not ruminating in the past or galloping ahead to the future (Schonert-Reichl & Lawlor, 2010). Often the phrase 'clearing one's mind' is used in reference to mindfulness, yet what mindfulness really proposes is simply just being where you are without labelling it as good or bad: judgments based heavily on one's perception of a situation. Since published evidence about the effectiveness of mindfulness based approaches is predominately with adults, this area of research for use with children and adolescents is still considered to be a novel field (Burke, 2010, p. 136). However, it is important to mention in order to provide context about the availability of approaches that are concerned with the promotion of well-being and individual happiness.

The field of positive psychology centres around the goal of increasing individual happiness and enhancing positive qualities through the use of psychological interventions (Schonert-Reichl & Lawlor, 2010; Seligman, Ernest, Gillham, Reivich & Linkins, 2009; Seligman, Rashid & Parks, 2006; Seligman, Steen, Park & Peterson, 2005). Although a related concept to mindfulness, positive psychology focuses on the goal of building and sustaining happiness (Seligman & Steen, 2005), rather than on accepting the present moment experience without judgment (Burke, 2009). Proponents of positive psychology contend that positive emotions help buffer against depression (Seligman et al., 2006) and positive emotions signal and produce a state called "flourishing" (Fredrickson, 2001, p. 218). According to Fredrickson (2001) "…positive emotions are worth cultivating, not just as end states in themselves but also as a means to achieving psychological growth and improved well-being over time" (p. 218). This is the direction of my three-week lived experience. Although I would argue that some of my methods invoked a mindfulness approach, overall my goal was to

identify negative thoughts and promote positive thinking in my daily life.

Where it all started

In my own practice, I began to see a pattern between my ability to connect with myself in a positive way, and my students being able to harness that positive energy within the classroom. Perhaps it was my perception of the situation because negative instances were not magnified when I was feeling centred and optimistic. I also started recognizing that when my mind was not focused and clear, when my mood was not calm and positive, or when I was "pushing" through a lesson without being mindful of the teachable moments, my students behaved much differently. Changes were subtle, but noticeable if I was attuned to the situation. The lessons at times resembled a graceful dance with participants joining in and stepping out with a natural ebb and flow. However, this could change depending on my energy and the "vibe" created within the space and turn into a kind of tug-of-war, void of the harmonious exchange I had come to enjoy.

The Question

Those reflections of my own teaching practice propelled me to wonder: What would it be like to be aware of my thoughts so that as soon as I recognize a thought as negative, unproductive or judgmental, I would stop and use a positive word, phrase or affirmation to redirect it? I was curious to find out if I could make positive thinking a habit. Much like someone commits to daily exercise or a healthy eating plan, I was committing myself to daily positive thinking. My metaphoric junk food would be negative thoughts and my goal was to cut out those needless negative calories by replacing them with healthy, positive options that would, hopefully, impact my daily happiness and my relationships.

The Plan

I decided to undertake a three week experiment to personally examine the effects that positive thinking would have on my daily life and on my interactions with those I encountered along my optimistic journey. I outlined a daily plan that would have me meditate for 5 minutes each morning while focusing on a positive affirmation for the day (see Appendix A for a sample of my affirmation inspired by Louise Hay). My goal here was to simply find 5 quiet and peaceful moments to help centre myself before the hectic realities of life as a full-time Master's student, wife and mother to a four-year-old monopolized my day. It is important to point out that the act of being fully present in the meditation experience required mindfulness, which I will define as focusing my attention to the current moment and allowing thoughts to enter and exit my mind without judgement or contemplation. The focus of my study was to use techniques more aligned with positive psychology or intervention when I recognized a negative thought. Yet, I had to be true to myself and calming my mind felt like a comfortable starting position from which to begin each day. Quieting my thoughts was one challenge: the other was documenting my thoughts.

In terms of data collection I would have my trusty Blackberry ready to record, using an application called Voice Notes, my reflections as they happened throughout the day. I wanted my reflections to be honest, unrehearsed and "in the moment". I wanted to document: (1) when I became aware of a negative or judgemental thought; (2) what strategy I used to re-direct my thoughts to reflect a more positive approach; (3) any feelings, physical aches and any unconscious reactions that were associated with the negative thoughts; (4) interactions with people throughout this process. Since I am a full-time student this year, I would not be able to see how this daily experience might impact the climate of my classroom, but my motivation for undertaking this experience was to witness the impact this would have on my own well-being and to recognize the opportunity that positive thinking has for those we encounter on a daily basis in our lives. As I embarked on this three week journey, I was clearly focused on two key goals: (1) to

examine the lived experience of infusing daily life with positive thinking techniques to better understand the potential benefits and transformation that could occur; (2) to examine the implications that this might have for further inquiry, particularly within schools and the health education curriculum.

Getting Started

On the first day I approached my challenge with optimism and excitement. I went to the gym, but my sore back prevented me from getting comfortable enough to really relax and engage in the full 5-minute meditation. Having re-located to a smaller rental property for the year while finishing my degree, I often looked for creative places to steal quiet moments to myself. The women's gym where I worked out regularly happened to be one of them. On this day I wrote:

> *Even though I couldn't participate in the full 5 - minute mediation, I still felt sort of calmed and centred because of the deep breathing. I found connecting with my breath very beneficial.*

Breathing – the kind that gloriously and purposefully fills your lungs - was the one thing I found easy to incorporate into my daily life and beneficial. Have you ever just stopped to take in a full, nourishing breath? Often, we are racing around, unaware of just how much influence our breath has on our physical bodies. In his book *Positive Living Skills: Joy and focus for everyone*, Terry Orlick describes activities that focus on keeping children thinking positively and one effective strategy for helping children relax quickly is called One-Breath Relaxation. It is described as follows:

> *...I want you to slowly breathe in, taking in one long, slow deep breath. As you breathe in feel the air slowly filling your body. Then slowly breathe out – letting all the air and tension flow out of your body. (Orlick, 2011, p. 185)*

This is a technique I used more than any other during my three week journey. Sometimes it was the only way to really stop my negative thoughts from steamrolling through my mind. Negative thoughts, I realized, are insidious: they creep along without us being aware of their power to push the positive thoughts to the periphery of our mind. One day I was feeling some of what I term "mommy guilt". My metaphorical plate was heaped with obligations and I could not clear them with the expedience I had come to expect of myself. On this night, I was running late from my evening class, had forgotten to make Jell-o for my daughter's lunch as promised and would not make it home in time to sneak a goodnight kiss before she drifted off to sleep. I wrote:

> *I find that breathing deeply especially is very important to reconnect and I have to talk to myself. I have to stop the [negative] chatter in my head and again repeat the positive affirmations to myself. It took a little more tonight, but I'm feeling good now but it did take a bus ride which is about thirty minutes, so again it was just about breathing and looking at the positive and being grateful and that was really helpful.*

My positive affirmations consisted of short phrases of inspiration such as "I am a WOW, a 9 or 10" or "I have power over my thoughts" or a cue word such as "happy." A cue word serves as a personal reminder and is directly related to a person's individual goal (Patterson & Orlick, 2011, p. 77). I wrote my affirmations on the white board hanging in front of my desk as a reminder of my goal: to excel as a student and earn my Master of Education degree. I wanted to view my coursework as an opportunity for growth and not as a catalyst to rattle my confidence. I learned that my ability to refocus on the positive did not miraculously banish all negative thoughts, but the more I focused on the positive affirmations and cue words when a negative thought did creep into my consciousness, the easier it was stop the "emotional rumination" (Kyriacou, 2001, p. 7)

that can prolong feelings of tension or stress. Allowing the 'worst case scenerio' to percolate in our mind serves only to disconnect us from the positive connection of an experience (Patterson & Orlick, 2011, p. 70).

Half-way Point

The more I practiced positive thinking, the more I became aware of the commitment required to maintain this positive lifestyle habit. It was something that I worked at each day and the more I did it, the more habit forming it became. Indeed, by the second week I was keenly cognisant of the impact this daily exercise was having on my life:

> *When I do slip and think of a negative thought it actually jars me a little bit. The more you stay in a positive frame of mind the more you really recognize the negative. I totally see how easy it is to fill our minds with negative thoughts [because] they come in so easily and I find with having done these activities over the last week and a half it's easier for me to switch my mind into a positive frame very quickly [because] I have something at the ready to switch on.*

I also realized that my dedication to this activity was more than spouting off uplifting phrases and feel-good words. By mid-point I was beginning to understand that turning one's thoughts around was not simply about positive platitudes, nor was it an insurmountable climb to the top of a proverbial mountain top. It was about a genuine awareness and an authentic desire for betterment for myself and those around me. You have control over your thoughts because you are the only one thinking in your mind (Hay, 1984. p.66; Orlick, 1998 p.9) Individuals can make a conscious decision to focus on what is positive or, alternately, get weighted down by stress and negativity.

How it All Connects

The great Chinese philosopher Chu His (1130-1200) has written: "When one knows something

but has not yet acted on it, his knowledge is still shallow. After he has experienced it, his knowledge will be increasingly clear…" (1963, p.609).

The interconnectedness of the mind and body is integral to Eastern approaches to health and it is believed "that human emotion has a direct health impact on the human body" (Lu, 2006, p. 79). Likewise, my three week lived experience taught me about interconnectedness on several levels. One of my recorded comments recognizes "…that positive energy is not just restorative but also transferable or contagious." We are social beings and that means our lives are *influenced* by our environment and the people in it; however, we are also instrumental in *influencing* our environment and the people in it. Orlick (1998) suggests that although human contact can be a source of stress, it can also bring great joy to one's life through simple sharing (e.g., a warm smile) or through a meaningful experience (e.g., a kind word).

Several times throughout my journey I experienced what might be considered by some to be inconsequential interactions with others, but by simply being in a positive state and extending positive energy I felt like I attracted moments that otherwise might have slipped past me had I been unconscious of my mood.

> *Okay so this is crazy. I'm standing in Wal-Mart…and I decide I'm just going to stand and smile and be aware of who's around me and what happens when I just stand here…I am smiling and exuding positive energy…a woman comes up to me and taps my arm and she points to the water cooler I just purchased and says "you're going to love it"…it's crazy but [I'm just] standing here smiling and that's what I attracted.*

In another instance I was in the kitchen making dinner:

What I've noticed while cutting onions is how happy my daughter is. It's as if she can feel my energy and my husband's energy. We're both at home, happy, chatting about the day's events, and there's just a positive energy and she feels it. She's full of life - gig-gling...almost a little bit silly...because everybody is so happy...Your mental state [positive or negative] has an important influence.

The benefits of the social environment on learning (Schunk & Zimmerman, 2007) go beyond the classroom. Researchers understand the importance of modelling to enhance skill acquisition and self-efficacy in children (Schunk & Zimmerman, 2007) but I would propose that setting a positive example in our community, at the grocery store or in one's kitchen incrementally enhances the quality of our daily experiences with those around us. Can it be as simple as pushing aside our negative thoughts and concentrating on the positive ones to influence our daily lives in small but meaningful ways?

If I Can Do It, So Can You

The purpose of my three week endeavour was to embrace awareness to ultimately feel more connected to my own thoughts and to the people whom I encounter on a daily basis. The lesson was a salient one: if you are consistent and committed to positive thinking it can develop into a routine. Infusing our every day with positivity in the hopes of diminishing negative influences has implications for improving one's outlook on life and it holds the promise of affecting the lives of those around us in positive ways. Imagine modelling positive thinking on a daily basis so that students could see how the process actually works? Think about changing

the words you say to yourself and adjusting the thoughts you think the moment they enter your mind. My three week lived experience has taught me that each one of us can *choose* to make happiness a habit (see Figure 1).

On the second to last day of my experiment, I had been up all night with a sick child and just wanted to get my groceries and go home to take a nap. I had hoped that my final recorded journal entry would be revelatory and succinctly uplifting. Instead, I realized that life is unpredictable; we are all going to feel grumpy sometimes and even those with the best intentions have bad days. The point is not to stay there.

I've had a couple of sleepless nights because my baby was up with a fever and it's challenging, to stay in a positive state when there's other factors like life and being tired...And that's what I'm learning about the most: it's about commitment. It's about wanting the positive more than the negative. It's about being committed to it and it's about longevity. It's about consistency, doing it everyday. I don't think we can teach positive mental health to students once a week...and then leave them alone and have them forget about it. I think this has to be integrated everyday...it has to be a regular day. It has to be normal. Positive affirmations and being positive and working on yourself so that you can maintain that healthy, positive mindset needs to be something you do everyday like brushing your teeth or incorporating some physical activity. There needs to be that element so that we can teach our children and affect those around us...I'm going to continue to use my cue word [happy] as I do my grocery shopping!

Figure 1. *Three suggestions for making happiness a habit.*

What You Can Do

- ✓ Start with a commitment to being positive. The more attention you give something, the more it flourishes. Put your energy into being positive more often.

- ✓ Choose a cue word or positive phrase. Write it on a slip of paper and tuck it into your pocket as a reminder throughout the day. Better yet, text it to a friend in the morning and have them text it back at lunch so the positive energy keeps going!

- ✓ Just breathe! A deep, nourishing breath in the middle of a hectic day can get you refocused and back on that positive path.

Appendix A

The following is a sample of a positive affirmation that I would use during my 5 minute meditation in the morning or throughout the day as needed. It was inspired by an affirmation in Louise Hay's book *You Can Heal Your Life*. I kept it on a piece of paper in my pocket as a reminder.

I release the need to question my abilities. I am smart, strong and confident. I live in harmony and balance with everyone around me. I see only the good in people – myself included. Only I have power over my thoughts. All is well in my world

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Physical and Mental Fortitude - Interview with an Adventure Racer

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James **Galipeau**, Ph.D James Galipeau, Ph.D., is a member of the Salomon Canada/Running Free Adventure Racing team. He has competed in a wide variety of adventure races, from 8 hour "sprints", to expedition length races, including numerous Adventure Racing World Series (ARWS) events and two Adventure Racing World Championships (ARWC). James has a Master's degree in Sport Psychology and a Ph.D. in Education from the University of Ottawa, where he studied informal social learning processes among university athletic teams, and how to facilitate informal social learning among graduate students.

"When I think about what an adventure race is, this had all the elements. The only word I kept using was epic. It's such an epic race. There's no other way to say it - from just the majestic beauty all around combined with the challenges and the elements…"

– James Galipeau, 2010

Adventure Racing (AR) is a relatively new and unique sport which includes multi-day and multi-discipline endurance competitions. The historical roots of Adventure Racing date back to the early 1980s. The desire to combine the elements of adventure, nature, and competitive racing resulted in the first-ever multi-sport competitions of this kind, such as the Alpine Ironman and the Coast to Coast races (Mann & Schaad, 2001). Popular television shows, such as Eco Challenge, have also promoted the increasing popularity of AR resulting in smaller scale races occurring in local cities to large scale organizations, such as the Adventure Racing World Series (ARWS) hosting races all over the world and the annual AR World Championship race (see http://www.arworldseries.com/ for more details). Competitors in AR may be asked to participate in various disciplines during the race, including: mountain biking, running, paddling, trekking, rappelling, and orienteering. Races may last anywhere from eight hours to expedition length races extending up to 10 or more days. Depending on the length and style of the race, competitors may have the option to race solo, in pairs, or in teams of three. However the standard team composition for most major races includes four people, with at least one person of each sex. Most teams are composed of three men and one woman due to the fact that there are fewer

women competing in AR than men, particularly in expedition races.

Adventure Racing is unique because of the ever-present uncontrollable and unpredictable conditions that may result from the weather, terrain, gear malfunctions, injury and/or illness, navigation errors, team dynamics, and sleep deprivation. The importance of teamwork and cohesion within the ever-changing environment also differentiates AR from other multi-sport endurance competitions. To meet the challenges presented in AR races, competitors need to exude a high level of physical and mental fortitude. However, despite the numerous physical and mental challenges that racers endure, there is a lack of research examining the psychological components of Adventure Racing, particularly the use of mental skills. To date, AR literature is prevalent within the disciplines of physiology, biomechanics, sociology, and physical education, yet there is limited literature in the sport and performance psychology domains. Researchers have examined disruptions in mood, the occurrence of injury and illness, and the overall physiological strain within AR (Anglem, Luca, Rose, & Cotter, 2008; Lucas et al., 2008; Newsham-West, Marley, Schneiders, & Gray, 2010), while aspects of efficiency and optimal performance via towing (a technique where racers pull or "tow" a teammate to keep moving) have also been examined (Grabowski & Kram, 2008). In addition, researchers have investigated the relationship between team dynamics, collective efficacy, and performance outcomes (Edmonds, Tenebaum, Kamata, & Johnson, 2009). Furthermore, sociologists have explored the social habitus or the conditions, characteristics, and principles within the social space of AR (Kay & Laberge, 2002). Finally, the potential to bring elements of AR into educational contexts has been explored through physical educational programs (i.e., Adventure Racing CORE Program) to expand students' skills and knowledge of multi-sport disciplines (Dejajer; 2006) Thus, better understanding the psychological aspect in Adventure Racing would benefit competitors, researchers, and sport psychologists who are interested in increasing optimal performances in complex sporting environments.

The following interview is part of a larger ongoing study examining the psychological aspects of Adventure Racing with elite-level racers. The purpose of sharing these interview excerpts with elite-level adventure racer, James Galipeau, is to bring attention to the various demands placed on elite-level racers (such as the physical, mental, and emotional discomforts), while also highlighting the physical and mental strength needed to endure these races and to achieve high-level performances. James' stories provide rich and in-depth accounts of the perseverance, resilience, and passion needed to excel in this sport. His real-life examples of teamwork, communication, and the use of focus and positive thinking demonstrate the need for better understanding the psychological aspects of Adventure Racing. Despite the numerous challenges presented in AR, James also describes the exhilaration and beauty of competing in such events, while also reflecting on the lessons he's learned and how his experiences have impacted his life outside of racing.

Interview: March 16, 2010

Teammates' names have been omitted for anonymity.

Brittany: How did you get involved in Adventure Racing?

James: I discovered Adventure Racing when I was a teenager, late teens probably. I was watching TV one day and I saw this thing on TV called Eco Challenge and thought "this is the coolest thing I have ever seen". I had never paddled before. I never mountain biked before, never hiked or trekked or been in the mountains or anything like that. But I just thought that was the coolest thing I had ever seen. And then I talked to a few friends about it and they agreed, "Yeah! That's so cool! We should do it!" Then someone went on the website and came back and

said it costs about $10,000 per person to go do this race…

Brittany: [*Laughs*]

James: At the time we didn't know there was anything else - just this one race that happened every year. So, we said, "Well that was fun while it lasted - to have a little dream to do that." I kind of let the idea go because it seemed to be only for people who have a lot of money, professional athletes and things like that so I never actually thought about it for quite a while. Then, when I moved to Ottawa in 2000, I actually started connecting with people who were doing Adventure Races. I didn't know that's what it was called at the time, but people were Adventure Racing. It turns out there were races on a much smaller scale – and a much smaller entry fee as well. So I connected with a mutual friend of mine and my girlfriend at the time and we did our first race. He had done one race before. We did a race in the winter. That was my first race and I remember being about four hours into the race and I literally said out loud "I am completely hooked!" It was just like…as natural of a feeling that I can ever imagine doing with any activity…

Brittany: Was there something specific going on at that moment when you felt that?

James: Nothing in particular. I mean, we were on the bike and in the snow but I had a perma-smile from the word "Go!" I don't know if you've ever done anything like that before where even the first time you do it you're just like "This is it. This is what I'm born to do... finally, something that suits me". I've always done a whole bunch of sports and some of them were fun - a lot of them were fun. But this felt like I was built perfectly for it. It had all the things that I love to do and all the things that I am good at - not necessarily the disciplines that I'm good at, but the whole idea of endurance and being able to stay focused for a long time and not giving up...team communication, those kinds of things.

It had a lot of the ingredients that I could see myself doing well.

Brittany: It was like an "Aha!" moment for you. So what were you feeling? Were you having a good time? Did you just feel confident in what you were doing?

James: I was having a great time. It was really fun but not in the traditional sense of fun. I loved the challenge. I loved that it was you and your teammates…not so much against other teams but you're out there battling the elements. There's something very…kind of primitive or primal about Adventure Racing. I think that's really attractive to me because you strip away so much of your life and all you get to do is carry a little bit of water and a little bit of food and a little bit of clothing - and then you have to make your way through nature. Everything is always in doubt. There's never a time where you can completely be comfortable and say "we're safe" in the sense that everything is going perfectly well. Because as soon as you do that, then usually something happens. So, it's kind of that element of…it's just you and nature. It reminds me a lot of, well, what I would imagine our ancestors would have had to do as their daily life - to get to places and to do whatever they needed to do to live. And I think we, in general in our lives, we're pretty soft. So this for me is a chance to get out there and have a completely different challenge than the one you would get at a regular job or even in most sports that are usually in environments that are quite controlled. A lot of sports have referees and they tell you what you can and can't do and when you're out there racing its nature that tells you what you can and can't do…

Brittany: Sure.

James: And in almost every race that I've been in, there are situations that I would never, ever do at any other time in my life…

Brittany: Besides in a race…

James: Besides when I'm in that race mode. Like when we're crossing swamps in the middle of the night or we're on a mountain in the middle of a snowstorm... these are things that you would just never do otherwise - and that's what I think is cool about it. But it's the challenge that it brings. It's the fact that everything is always in doubt. Legitimately, you don't know if you're going to finish versus "how well am I going to do? Am I going to be second or third?" At the longer races especially, I really don't know if we'll get to the finish line. I have confidence that my team has the capabilities to get there, but there are a lot of things that are out of our own hands. You know, the weather - especially the terrain and weather... so you have to learn to really respect and negotiate them. So that's what draws me to the sport.

Brittany: Since your first race, can you tell me about your most memorable Adventure Race that you've had to date?

James: The first really, really memorable race for me was a race that I did solo. It kind of changed my whole feeling about racing in some ways. It was another winter race actually and I was on snow shoes in this big valley in the middle of nowhere and I was not a good navigator. So I was never sure if I was in the right spot. This was probably my first or second solo race ever. Anyways, I was in this valley and there was a crust of snow on top and every couple steps I would pretty much sink through up to my knees or up to my waist. It was this long, massive valley and there was just no way around it. It was where I was pretty sure I had to go. So I'd walk and I'd fall through the crust - I'd walk and I'd fall through. I was getting so frustrated and it was just so long and I could see forever in front of me and I remember thinking "I don't know how the hell I'm going to get out of here." There was a moment at that time where I was extremely frustrated and then I actually thought to myself, "Wait a minute, isn't this why I race? Isn't this why…Here's the challenge, and this is kind of why I do this." It's that point in time where you ask yourself "Will I make it or

not? Or will I just quit and turn back?" Not that it's easy to quit in a race like that, because you're in the middle of nowhere so you've still got to get yourself out! But it just changed the way I think about racing because now when I get to those points that are really, really tough, I remind myself that it's why I race. That's why I'm here. So, I learned to welcome that challenge as opposed to…

Brittany: Fight it?

James: [*Continued*]…getting out there and thinking "This is crap. I hate this! I wish I was home and warm and…"

Brittany: Comfortable?

James: [*Laughs*] Yeah. So that was a very memorable race for me because it was one of the first solo races that I had ever done. The challenges were quite large for me. The other memorable race for me was my first really, really long race, which was a five and a half day race. It was in northern British Columbia, my first time really getting up into mountains and in the ocean. The longest races that I had done up to that point where 48 hours. None of us had ever done anything that long. So it was a huge build up for months and months and months, just figuring out how to step into this monster! [*Laughs*] We actually…well, I won't go through the whole thing but it was beautiful and the terrain we had to cross was incredible. In a paddling section, we got caught in one of the…that region is known for its massive tide changes – some of the biggest in the world. We got caught in the biggest one of the race. So we were paddling, probably about 50 meters from shore…maybe 100 meters from shore at the most. We were paddling and it was taking forever. It was a slow process. We were talking about some of the things we were seeing on the shore as a way to keep busy and we noticed something that we had seen, probably about an hour before, and it was still there.

Brittany: Still in the same spot?

James: Still very close to the same spot. So we really started paying attention and we realized, we were not moving…

Brittany: Wow.

James: [*Continued*]…We're just being pulled backwards. So we said, "Okay, we'll paddle harder." So we started paddling harder and we were barely moving because the tide was changing and it was pulling us out. We were talking between ourselves and saying "this is not good. We are putting ourselves in danger by being out here." We were starting to get cold. We had been paddling for a number of hours at this point, probably five or six hours. So we decided "let's go to shore. We have to get warm now, so let's go to shore. We'll make a fire. We'll let the tide change and once it calms down we'll get back out there." So we all agreed to do that and we pulled up on to shore, which was probably another 50 meters from where the real shore line is because the tide was going out. It was one of the most amazing things I've ever seen! There were star fish and all kinds of stuff all on the "beach" I guess you'd say. We felt terrible because everywhere you walked there were tidal pools full of sea creatures, so we tried to step around everything. We were carrying these two big boats and all the rest of our gear. Usually there are four people so you can split the weight a little easier but we were only three because our fourth team mate had to withdraw from the race earlier on. Our female teammate weighed maybe 100 pounds. She's tiny. So she took everything she could take and we took what we could, and we dragged it all onto the shore and everyone was freezing by this point. Where we were was a temperate rain forest, so not a lot of dry stuff. So we searched around to try and find dry stuff to burn. We went through all of our First Aid Kit and pulled out any paper or anything cardboard and got it all into a pile. Everyone was just mentally…everyone was thinking the same thing: "We'll be fine once we get this fire going. We've just got to get this fire going and everything will be alright. We'll warm up. We'll have some food and we'll get going

again in an hour or so." Everyone's mental and emotional energy was invested in this fire. Anyways, we got all the paper together and we got all the dry wood we could find. My teammate pulled out the lighter and tried to light it…and the lighter didn't work.

Brittany: Wow!

James: Being an inexperienced team we hadn't thought to bring a second lighter or matches.

Brittany: How did you feel emotionally at that moment?

James: I can remember it still pretty well! It was a combination of… "we're screwed!" and "this is bad." There are not many times when I've said that in my life, but I was thinking "this is bad! We are in the middle of nowhere and we are freezing cold. We have no source of heat and even if we called right now for a rescue it would be probably be four or five hours, I would guess." That's a rough estimate, but it certainly would not be anytime soon. When you sign up in a big race like that, it's the risk you take. I don't think I was fearing for my life, but I was thinking that we are in a bad, bad situation.

Brittany: Did you discuss that as a team? Did those words actually come out from you or your teammates?

James: Yes. We stood around, saying "this is not good." It's a tricky situation because you don't want to say anything that's going to instill more fear in anybody but at the same time you have to admit that "This is not a good situation. We have to start making some very important and smart decisions right now." We realized and recognized that we were in a tough situation and that we had to get ourselves out.

Brittany: Sure.

James: So we talked about our options and said "What can we do?" A fire was out of the question. There was no way we could make a

fire. The lighter was dead. We tried it and tried it and tried it. It never worked. Calling for a rescue really wasn't an option because…well first of all, it's kind of your last option in a race. Like I said, it would have taken hours for anybody to even get close to us, so we needed some other options at that point. So what we ended up doing - which I think in retrospect was the smartest thing we could have done - is that we had these emergency bivy sacks that are basically like a big garbage bag with reflective material on them. They are very lightweight. They are pretty much disposable but they are reusable. They're not expensive, but they are one of the most important pieces of gear I will carry in every race now from that experience. Anyways, so what we decided to do was we put them on like a dress. We cut arm holes and a hole for the head and put them on, knowing that we wouldn't get any further ahead. We actually went back out on the water and paddled so that we would generate heat…even though we knew we were not moving forward. So we ended up going out and warming up and then finally the tide was calm enough that we were able to start moving forward again. But by this time we had lost a lot of time so we were starting to get into darkness. Another problem... We thought we could hit this one trail that was not marked on our main map but marked on a different map we had seen before the race. It turned out to not be there. Then it got dark and we were on foot on the shore line. So we decided to stay on foot and we ended up hiking through the night along the beach where we could have paddled but we didn't feel like it was safe to go and paddle through the night. So what we ended up having to do was to deflate and roll up these inflatable 70 pound boats. They have seats and stuff in them, so we had to pull the seats and everything else out. So we were basically carrying about 80 pounds of gear each, along with our packs, along with wearing our wetsuits - because we were all in wetsuits and there was nowhere to put them. If you take them off it was just more stuff to carry. So we ended up rolling up these boats and strapping them to our backpacks and walking for…I think we must have walked for five hours.

I think it was one of the hardest things I will ever have to do in my life because we were on sand. Literally, I would walk about 20 meters and I would fall down exhausted. We would just try to find a rock or something to set our body on for a minute. It was just so heavy and pulling us backwards on our backs, and I would just fall down onto any rock I could find. Every time, I was just lying there thinking "I can't believe I have to get back up."

Brittany: So what was going on in your head? How were you able to keep going?

James: By recognizing that I really didn't have a choice.

Brittany: Can you explain more what you mean by "no choice?"

James: I think that is the beauty of adventure racing - is that you don't have other options. If you ever got into serious trouble there are usually options. You could leave the boat there and just hike yourself out to safety, right? But the general mentality is that there are so few options. Your only option is calling for help. I mean, most of the time, even when teams call for help, if you are healthy enough to get you and your teammates out of there, even if you broke an arm or something like that, you're walking out! They are not coming to get you. They are only coming to get you if you have a major injury and can't get out.

Brittany: What about the dynamic with your teammates? Do you see the same type of team dynamics in Adventure Racing, such as encouragement, as you do in other sports?

James: I would say that it's very different based on my other experiences because…you get to some seriously low points.

Brittany: Okay.

James: It's not only verbal encouragement. You usually have to do something to help your

teammates, whether that's taking weight out of their pack or it's stopping for a break. The teamwork component becomes huge and knowing what that person needs and doesn't need becomes massive- especially when you get into the longer races. If you don't know your teammates well then you become a danger to each other in a lot of ways. At worst, you have the potential for a very bad experience. So, knowing your teammates is huge. It's so important.

Brittany: Were there any other memorable races that you would like to talk about?

James: The race I just came back from in Patagonia was memorable for every reason but mainly it was one of the most remote races in the world and one of the longer races in the world. We went down there with the team we wanted to bring. All four people felt very confident about each of our team mates. One of our regular teammates couldn't make it and it would have been just as great to have him but we went with a very solid team. We went in saying we don't know what the course is going to bring but we know that we've got the best chance that we could have as a team with these four people. Both in terms of our physical abilities and in terms of mental and emotional abilities. We all meshed really well together.

Brittany: Okay.

James: So I was very happy to go with them. We ended up needing that! [*Laughs*] That became a very big part because there were sections of the race that were extremely difficult. I think, my god, if we would have had a person with us who would have complained about things, it would have been really, really hard. It would have been twice as hard to do that race and we already had enough to deal with just with the elements. The Patagonia race was so memorable just because of the sheer vast terrain. One of the points that stands out most is that we had to do a test for our kayak skills. My teammate and I had to do this test. You basically

had to flip the boat over in the water, come out of the boat (a "wet exit"), flip the boat back over so it's right side up, both people climb back in, pump all the water out, and put your spray skirt back on in under five minutes. If you couldn't do it you weren't racing! Which seemed harsh, but when we saw what we ended up facing out there, it was a good thing. The Chilean navy personnel were out there supervising us with their stop watches and their binoculars. So it was big time!

Brittany: It was a big deal!

James: Yeah. Usually we would do the test as a full team but because the waters had gotten too rough the day before they couldn't get us out there to do the testing. So they said, "We'll only test two people." So my teammate and I were all of a sudden representing the team… Could you imagine us having to go back to our teammates and say "Guys we can't race."

Brittany: Wow. So there was pressure?

James: Oh! I was scared sh*tless. On the water… our weakest of all three traditional AR events is paddling just because we don't do it as often and we're less experienced. It's pretty big water we were facing. So anyways, we passed the test and then we paddled back to shore. So we were really excited. Then the guy who was running the kayak testing said to us, "You passed, but we need to talk." My first instinct was going to be to say "No! We passed! I know we did some stuff that wasn't that good, but we passed!" I actually thought he was going to say, "I'm not sure you should be out there" or something like that. But then he said, in a very serious voice, "This is the situation. Most of the teams are here in dry suits. You guys are here in wetsuits. You don't have the best equipment, which makes it even more dangerous for you. This is not a typical race. This is not like the races you've done before, where if you fall in the water, someone who is 100 meters away is going to come and help you. The water is so big that even your teammates cannot come and help you sometimes. If you're in the water, chances are,

they are probably in the water too because the conditions are that bad." And he said, "You need to understand this. If you're not careful on the water, you die." He paused, and I nodded, "Okay." And then he stressed, "No! I'm serious. If you do not take the right precautions, you die! There is no way around it. That's how dangerous this is and I'm not going to lie to you." He scared the crap out of me.

Brittany: So how did you feel when he said that to you?

James: Oh I was terrified! I was thinking "are we getting in over our heads here?" But then the kayak test guy said, "I'm telling you this because you need to make smart decisions. Don't think about racing. Think about being safe. That's the most important thing." There is lots of racing to be had and there will be lots of other races too, but safety is way more important when you're on the water, especially if you don't have the best equipment. I'm super glad he said this. He did his job extremely well. He should be putting fear into people because we forget about that sometimes. Especially coming from smaller races where you are pretty safe in the grand scheme of things. So his job was to make sure we understood that this was not like that. We were truly in the middle of nowhere. So, that was one of those times where I was thinking "am I in way over my head here?" I generally feel pretty safe on foot. I feel pretty safe on bike. But water is still…I didn't grow up around water so I'm still fairly novice when it comes to water, especially oceans, big swells and things like that. That's still pretty new to me. So, yeah. It was terrifying in some ways but in retrospect and considering what we got ourselves into in the water, I'm glad he did that. So I have a lot of great memories from that race. It had everything. It will be tough to top that.

Brittany: What do you mean "It had everything"?

James: If I were to think about what an adventure race is all about, I would say this race

had all of those challenging elements. We hiked for 87 hours straight at one point in the race with no chance to refuel. There were no stores or houses around... nothing. You were in true wilderness. We climbed mountains. We were in snowstorms. We were in rain. We were in 100 kilometer an hour plus winds. We were in huge swells and huge winds in the water. We were immersed in the water sometimes. We had to do water crossings…rappelling into a canyon. When I think about what an adventure race is, this had all the elements. The only word I kept using was epic. It's such an epic race. There's no other way to say it - from just the majestic beauty all around combined with the challenges and the elements - the weather and the terrain.

Brittany: Sounds like it was awesome!

James: Oh yeah. It was incredible.

Brittany: Do you use mental skills during your races?

James: I would say I don't consciously think, "Okay I need to use mental skills", but when I look at what we do out there I would say yeah, absolutely.

Brittany: Can you give me examples?

James: Sure. The ability to focus is huge, especially at certain times in the race - night time being one of the most important. I will give you an example. We were at this race in Patagonia. It was cold, rainy, we hadn't slept yet in the race. It was the second night. We had been climbing this mountain forever on our bikes. Now we had to go downhill. I think it was about three o'clock in the morning. Everyone was exhausted. That's the first time in my life that I've ever took a caffeine pill and it didn't work. My teammate, first time in her life ever taking caffeine pills too and they didn't really work for her either. So now, we had got to get ourselves down this mountain and it was just gravel roads with sharp turns in the rain and we were just exhausted. It was like…you had to use every ounce of focus you could find

because as soon as your mind started to drift, you were asleep, your eyes closed - and you'd crash.

Brittany: Wow. So what were you focusing on?

James: Staying awake! [*Laughs*] If I could try to be more specific, it was trying to find the right things to focus on to keep me awake - things that were going to be useful to me, not detrimental. If I started focusing on how good it would feel to sleep, or to eat, or to be warm then I was not helping myself. So instead, I was focusing on my teammate's blinking red light in front of me. I was focusing on making sure my teammates were staying awake. Because if I focused on them staying awake that meant that I had to stay awake, right? So if I focused on helping them down the hill then that helped me keep focused on staying awake as well. So that's a big part of what happened for me. If I started to feel myself drift off, I'd ask my teammates if they were alright or "How you doing? Are you falling asleep?" Because chances are they were probably falling asleep too. So then I would strike up a conversation with them and try to keep moving. The quiet was the hard part because that's what happened... Everyone got tired and zoned into their own world and how crappy they were feeling. Nobody talked, so that makes it even more quiet so we were just kind of there with our own experiences and it was certainly not helping us to stay awake. So, if we could get a person talking about anything it was much better than not talking.

Brittany: It's better than the silence?

James: Yeah. So it's always nice to have a talkative person on the team! [*Laughs*] Someone who can kind of break the silence. It doesn't matter what you talk about really. So finding the right things to focus on…I guess the other part is, during the day or during a long trek or anything like that, it's easy to get down on yourself because you're just feeling like crap. So if you start focusing on how you feel, and how crappy you feel, it makes it so much harder. It's finding things to focus on such as something you

can see in the distance. For me, again, it's focusing on making sure my teammates are doing alright. I tend to hang at the back of the pack and if anybody slows down (other than me, of course!); my responsibility is to help them stay with the group. If they fall back because they need something out of their pack then I'll walk with them and hold their pack so they can shuffle through it as we're walking together. If they need food, I can grab something out of their pack and give it to them or I can grab something out of my pack and give it to them. Different things like that. So that's one of the responsibilities that I have on the team.

Brittany: What other mental skills are important during racing?

James: A positive attitude is massive. If you can't stay positive about what you're doing, then honestly, it just becomes suffering! [*Laughing*] And that's not fun! It's a long race if you start to actually suffer. I see suffering more as a state of mind, not a physical state. You can hurt and you can be in a lot of discomfort, but suffering is kind of the mental side of that, versus the physical side. So, if you get to a point where you start suffering in a race then it's going to be a lot harder for both you and your team. You have your mind working against you, not just your body. So it's trying to stay aware of those things - both of yourself and your teammates. I like the fact that you always need to be thinking about your teammates. For me that takes me out of my own little world. When I'm in my own world, it's pretty easy to get wrapped up in how bad I'm feeling or if we're lost or whatever. When you have teammates, it becomes your responsibility to watch out for them - not only yourself. It pulls you out of your own element to make sure that they are alright too. I use that a lot in races as a way to keep my focus outside of myself.

Brittany: Focusing on your teammates?

James: Yes. Absolutely. Part of the reason is that 95% of the time I am not the navigator. There's a navigator and then there's a back-up

navigator who helps the navigator - who helps him or her with the maps and reading instructions, things like that. So that leaves two other people. For me, since I'm not usually one of those two people, the best thing I can do is to make sure that the other person and myself can free up those two navigators to only focus on the maps. Every time I pull out food, I offer some to the navigator because I know that he gets focused and he stops thinking about eating and drinking, especially if we get lost. When he gets frustrated, all he wants to do is get back on the map. He's not focused at all on how he's feeling hunger-wise or fatigue-wise... It's all about trying to figure out how people work - to be able to get them to do what they need to do in a way that's most comfortable to them.

Brittany: In terms of communication, can you give me an example of a time where you feel like your team was communicating very well and then an example of when your team did not communicate very well?

James: One example from Patagonia when we communicated very, very well was when we got on the bike section. There was a diagonal cross wind that we were going to be in for hours and the wind blowing over 100 kilometers per hour. So literally, it was extremely hard just to stay on the bike. That's the craziest wind I have ever been in for sure. We needed to figure out a strategy, because we were not getting anywhere very quickly! [*Laughs*] So, what we ended up doing is we staggered ourselves diagonally so that the lead person was blocking the wind on an angle for the second person who was blocking the wind for the third person and so on and so on. But we needed a strategy that would work for everybody. Just before the bike section, I had been towing my teammate on a beach section when we were on foot and I was pretty tired. So I had to say, "Guys, I can't lead. I can't be the guy who is breaking the wind. I don't have the energy right now." That was tough for me because I am usually one of the guys helping out with this. But it was too early in the race and I was already feeling burnt. And then my one

teammate, because she's so light, she was getting blown all over the place. So we had to find a way to protect her from the wind while still moving as a team. There was a lot of communication there making sure to get it right. At first it was a lot of verbal communication and after that it was a lot of nonverbal communication - just recognizing where people were at and subtle things. At one point in the race, we were finally feeling like, "Okay, this is pretty cool!" as we were coming up on the Spanish team and they were ahead of us on the bikes. We were doing our stagger and we went blowing by them. It's pretty common when you go by a team that they will try and get in your draft, to draft off of you. We went by so efficiently that they couldn't even catch up. It took us less than a couple minutes to drop them because we were doing exactly what we needed to do and it worked out perfectly and they just couldn't get themselves organized enough to stay with us. So that was kind of a good feeling…

Brittany: Awesome!

James: [*Continued*]…we did that very well. Not only to pass them but the whole time we worked really, really well on that bike section and we needed to because every time we got disorganized people end up heading for the ditch because the wind was that strong!

Brittany: This drafting formation, was that something you guys discussed before you got on the bikes?

James: We didn't stop and talk about it but we figured it out as we were going.

Brittany: So it sounds like you have to learn and make strategies as you're going?

James: Oh it's all learn as you go! [*Laughs*] You can have a plan but it doesn't work out that often. So much changes. We never anticipated that kind of wind. You could think you know what it's going to be like, but I've never been in a position before where literally if my tire

touched the softer gravel on the side of the road, I would end up getting blown towards the ditch.

Brittany: So it was a new experience for you?

James: Oh absolutely! It was new for everyone. The first part we were saying, "I can't believe this!" but then we were also saying, "We've got to find a way to do it though." You can't just say, "I'm not going to do this." You can't just walk your bike for a hundred or more kilometers, as much as you'd like to sometimes [*Laughs*], so it was "... we've got to do this. There is no way around it. This is what everyone else is facing too, but we don't really have an option here so let's figure out the best way to do it, which may still be a bad way. There's not going to be an easy way to do it." That's what I think is one of the big things in AR, always reminding yourself there is no easy way. Stop trying to look for the easy way. Look for the best way, but the best way is probably not going to be easy! So get out of the mentality of wishing or hoping for an easy way. Get out of the mentality of wishing or hoping for comfort, for sleep, for anything that you know from back home because you're not going to get it - and wanting and wishing for it is just wasting energy. So just look at what you have in front of you and what is the best way to get through this - to do what I need to do – and then go and do it.

Brittany: So that was an example of one of the best times of communication with your team and a strategy that worked very well… Do you have an example of when things were not going well in terms of communication?

James: The first time our team ran into a dynamics issues we were in a three day race and we were in the paddling section coming to the finish line. This type of race you had optional checkpoints. So you could get as many checkpoints as you wanted but there were cut-offs – time cut-offs. In this type of race, if you are late even by a second, you are disqualified. So you absolutely cannot be late. We were doing really well in the race. I think at the time we were probably in second or third place. Our navigator said, "We're going to go by this one check point. It won't take long to get. We should be able to see it right from shore and we should be able to run out of the boat and up the hill to get it…I think we have time. It will be close but I think we have the time." Another teammate replied, "I don't think we should go. It's too risky. If we screw up anything, that's it. We're done. We lose second place. We DNF." However, the navigator insisted "No, this will be easy. I can see on the map that we just have to climb about 50 meters up the hill. There will be this little gully. It won't be a problem. Everything will be fine." The other teammate argued "I don't think we should risk it. It's not worth the risk and to take our chances. We don't know if other teams have got it or not so you don't know where you stand really because it's a point system." Then it got quiet for a while in the boats, and all of a sudden we were getting closer and closer to the optional checkpoint. It was me and the navigator in one boat and our other 2 teammates in the other boat. Both boats just naturally drifted apart for a while as we got closer to the checkpoint and it got very quiet. Then we started to get close to where this checkpoint was and the navigator shouted "Hey, we're getting close to this check point. Are we stopping or not?" And nobody really said anything and nobody answered him. So there was a lot of quiet tension... The boats separated again for a little bit and the navigator asked me, "What do I do? What do you think?" We talked and I'm sure our teammates in the other boat were talking too. He asked me, "What do you think we should do? Should we go? Should we not go?" Because that's one of the challenges, is that everyone on the team is really nice and friendly. We're all nice people and that becomes a challenge sometimes. This was a point where we needed leadership and it was never established before the race who would be the final decision maker during the race. This was part of the dynamic. The dissenting teammate was the team captain for the race, the one who does all the organizing; who does all the registering before the race and the other

teammate was the navigator. So we had two different types of leadership, and when it came to a point where someone had to take charge, nobody knew who was in charge and nobody wanted to step on the other person's toes.

Brittany: Sure.

James: Then finally, we were literally 50 meters away from the optional checkpoint…we had to paddle right by where it was. Finally the navigator blurted out, "Well I don't know what to do?" So, I just said quietly to him, "You might not like what I'm going to say but you're the guy with the map. It's a difficult situation, but somebody has got to make an executive decision - and we're not looking at the map, you are. You're going to have to make a decision and we're going to have to go with your decision. That's why we're a team. It sucks that someone has to make the decision but you are the one who is going to have to make it because you're holding the map. You are in the best position to know if we can make it or not." I then said, "We know this team well enough that regardless of what gets decided you know we're behind you. But it's going to be your decision. It has to be. I cannot see it going any other way." So we came to a compromise, which I thought was great. The navigator said, "We're going to go for it." We checked our time and everything like that. He said, "We're going to go for it and we're going to start hiking up and if we haven't found the checkpoint in seven minutes, we turn around. I don't care how close we are if we haven't found it in seven minutes we turn around." We figured we couldn't spend more than 15 minutes there. Anyway, so we got the checkpoint and we were back in the boats in 14 minutes. It wasn't super easy, but it was easy enough. We found it in the time that we had set aside, but not by much. It was tight, but we made it! Just that whole tension building up to it and not being clear on who should be the one who decides, you know, because we do everything as a team and there are very few times where somebody has to make an executive decision. Usually the navigator talks with the co-navigator and they come up with

what's the best solution based on their discussion together. Sometimes we even stop as a team and say, "Here are our options. We can go over this mountain, which has these implications, or we can try to go around the mountain which has these implications. What do you guys want to do?" or "Do you want to go 100 meters through this swamp or do you want to go for half a kilometer to go around it? What do you think?" There's not a lot of consultation specifically like that but on bigger decisions we work out a strategy based on how people are feeling and we consult as a team. Otherwise it's the navigator and co-navigator who consult on what the best route is. That's probably one of the trickiest situations for communication. Thankfully, we managed to resolve it in time.

Brittany: Since that experience, do you now establish executive decision makers or a leader before the race?

James: Not outright, but I think it's become a given that it's the guy with the maps.

Brittany: So you said there is a navigator, a co-navigator, and then two other people typically on the team. What would you say your role is on the team? Do you have a name for your role?

James: Yeah. I'm the donkey! Or the pack mule!

Brittany: The pack mule, okay. So what do you do?

James: My job on the team is to try and provide as much relief as possible for the navigator and the co-navigator. So, if that means taking a little bit of extra weight from anybody on the team in order for them not to have to take extra weight, that's part of it. In general, if someone needs to dump some weight, I'll probably take at least part of it. I'm also the person who hangs back and whoever is the slowest person (as long as it's not me) then my job is to keep them moving as fast as possible. I enjoy being at the back. I don't know if it's because I can see everything in front of me but I like being there. We've found it

works well for our team. My one teammate (who is also not a navigator) and I pretty much have it down to a science. We work really well together now. In particular, myself and that teammate have found ways to work together on foot to the point now where we have an implicit understanding that if she is tired for any part she doesn't have to ask me for a tow, she just walks up behind me, grabs my pack, and I pull her. This works particularly well earlier on in races, as she generally starts out slower than the rest of the team and I have plenty of energy. But as the race wears on, she gets stronger and then is in a position to help me in the later stages of the race.

Brittany: Interesting…

James: I think that is an important part of that dynamic where she doesn't have to ask me anymore. There's a lot of energy that it takes just to be willing to ask someone to tow you. You have to say, out loud, "I'm not feeling good. Could you please help me?" That's hard to do for anybody. So now she doesn't need to do that. She just walks up, grabs the pack, and it's all good.

Brittany: It's almost like a team within a team, somewhat?

James: Yeah. It's trying to isolate the navigators from any of the other challenges so they can just focus on the maps. Sometimes the navigator goes on his/her own and the co-navigator hangs back with us two. Other times they are both up there working together. So that's usually how the dynamic works. It's been working well for our team.

Brittany: You mentioned that your team has a very even keel. Can you tell me more about that? What does that mean? Also, besides that are there any other team strengths that you believe your team has?

James: The even keel thing is one of the most important things in racing from my perspective. That's why I love racing with this team. We have

gotten ourselves into some really, really tough situations - I will give you an example: the navigator once said, "Guys, we've been walking on the wrong trail for the last four hours." We were on a trail where we had seen a signpost that named part of the trail but the other part of the name was kind of rusted over. It turns out that there was another trail with a similar name. So we had walked all night on this trail, which had generally gone in the right direction, but then it started to turn the wrong way. Once it started to turn the navigator was quick to say, "This is not right." So what do we do? We can either walk back four hours and start back where we were or we can try and start hunting around and reorienting ourselves on the map, which could take ten minutes or it could take ten hours. You just don't know what to do - that's the gamble, right? So in a situation like that, it would be so easy for a person to say, "This sucks!" or to berate the navigator and say something like "Couldn't you have figured that out sooner?" Even in situations like that, everybody on our team just said something to the effect of, "Well that's unfortunate" and then we all focused on doing what we needed to do to get back on track. Nobody lost their mind. Nobody got overly frustrated or upset, which would have been so easy to do there. But, everybody just really kept their cool and it made for great racing. It's the kind of team where if someone says, "I'm kind of hurting", what they really mean is "I'm about to die! I'm hurting so much!" The team is good at doing the things they need to do to not hurt and working together and communicating, but when someone says something like that in passing, we know it's gotten to the point that they need to vent a little bit. It's expressed in such a minor way though, not like "Oh! I'm going to die". It's more like "Oh, I'm really sore." That means, "I'm *really* hurting!" [*Laughs*] It's almost an implicit understanding…

Brittany: Is it almost like a coping mechanism for you guys?

James: Yeah because we've learned that expressing it too much is not useful. If you need

to express it because you need help, that's different. Very different. The team is good at doing that but to just express it because you need to say it…I think the general tendency is that people are just so overwhelmed in a race by their feelings that it just comes out as very emotional. It's very, very expressive and very emotional. I like my team because they just say it and it's done with. Someone might say, "Do you need a hand? Do you need something?" "Not it just hurts." "Okay!" " Good. I just needed to express it." It's not a blow-up. It's not a tantrum, and that's fantastic to find four people that do that and don't really lose their cool. Many people in adventure races would say it's pretty rare to find a full team who don't lose their cool.

Brittany: So, can you talk about any other big strengths that your team holds?

James: I think we're a good persevering team. Whenever the situation gets crappy, someone always steps up and leads the way - kind of a quiet leadership. We don't really rely on one person to do that. They're just good, tough competitive racers. They want to race hard. They want to race fast. They want to race competitively. Everyone's got that kind of desire and that makes for great racing. In three years of racing with these guys, I have never wondered if someone is not giving their all. You just never need to question it, which is fantastic.

Brittany: That's great.

James: Yeah. I really like the team for that. I have an example of a team lesson related to this. We were racing in Michigan and we were looking for one checkpoint for 12 hours in the pouring rain, in the thunderstorms overnight, and we hadn't slept yet. That was a tough race because we basically would go to where we thought the checkpoint was and sometimes it would not be there. It happens often enough in smaller races that a checkpoint is misplaced, so that gets into your mind when you don't find the checkpoint where you think it should be. Anyway, we were in second place at the time.

We looked and looked and looked for this one checkpoint. We basically kept going out and back, out and back, out and back, for 12 hours and every time, we'd come back to the same spot. "It's got to be here, it's got to be here", you know? Then in the morning other teams start showing up and that was very hard to take because we had this big lead on these teams and all of a sudden a bunch of teams were showing up. We were getting frustrated. Nobody knows what really happened regarding the placement of the checkpoint but my team ended up dropping out.

Brittany: What do you mean dropped out - of the race?

James: Yeah. We quit and hiked back to the previous check point. We weren't in a very remote area, so there were pick-up trucks from the race organization that were driving back and forth on a gravel road. We ended up quitting and getting a ride back in one of these pick-up trucks. It was kind of comical in a couple of ways. First, we were sitting in the pick-up leaving - on the way back to the headquarters - and it was dead quiet. All of a sudden one teammate said, "Did we just quit?" At that point we all felt horrible. The whole team was like, "this is terrible!" It was our emotions that got the best of us and we made a quick decision to not continue.

Brittany: Did your navigator make the decision to not continue? How did you make the decision to quit?

James: He was good because he just offered up the maps to anyone and just said, "You can try, because I've tried 32 times now!" [*Laughs*] He wasn't being stubborn at all, but he just said "I'm out of options. I can't imagine where else this would be. It doesn't make sense to me." I think he just kind of got to his wits' end and was feeling like, "There's nothing else we can do here. We've tried…how many more times do we have to try?" It wasn't like we tried five or six times. This was 12 hours, literally. Then…that's what happens - is that poison. Once one person

talks about quitting, then it enters your head. It hadn't entered our heads in a realistic fashion up to that point…that we could be somewhere warm. We could go get some sleep. We could get some warm food. We could stop racing and get off our feet. All of a sudden that became a possibility where before it wasn't. It's one thing to think, "Oh I wish I was at home", but all of a sudden somebody who's in your inner circle, who's in the same boat as you says, "this is a possibility." That's death right there - that's that poison. All of a sudden everyone's thinking, "Oh that would be so good." You're not racing anymore. You are thinking about comforts - and that's what happened. We all got caught in it. We made a rash decision and said, "we are tired of this." What needed to happen, which is what we've done now in other races, is we needed to sleep. We needed to hunker down, get some sleep, get some rest and get some food and try and warm up. Then make a decision. The problem we had is that we made our decision before we even thought about it. We didn't think about it until we were sitting in that pick-up truck. We felt horrible! The only thing that went through my head was, and I actually said this to them, "Well we know now that we never want to feel like this again. We'll remember this for a long time, the next time we think of quitting." We had never even talked about quitting in a race before - never even thought about it. It was such a fast decision in terms of saying, "Let's get out of here" kind of thing that by the time we actually thought about what had happened, it had already happened. We had already quit. So I think that created a lot of resolve in the team to never do that again.

Brittany: What a learning experience!

James: Oh absolutely! You have to learn by doing what you don't want and that's certainly what we did there.

Brittany: Do you consider your team's perseverance and the fact that you don't quit to be a team strength?

James: Absolutely. Adventure Racing is designed for that…the easiest thing to do is stop. Everything in your body is telling you to stop and that's what you'd like to do. But if you're able, you can ignore that and just keep going. We've been in races where we've been lost for over 12 hours and we know we can still come back and be up at the podium because somebody else could get lost, and then another team, and it's anybody's game. It's always anybody's game, right to the very end. So, you want to remind yourself of that. I know that's one thing that our team does pride itself on, is that we do well in extreme conditions. We dislike those conditions less than other teams. We remind ourselves that this is our kind of weather. We don't like it but we know that other people dislike it a lot more, and that's what we tell ourselves. That's our unwritten team mentality - that we're tougher. We can put up with a lot more stuff and we're willing to - and that's what makes us good racers. I don't know if that's true but I know that's what we tell ourselves in order to keep racing. And especially after having that experience of quitting, I know nobody wants to have that feeling again.

Brittany: You've mentioned that during your races you see your teammates at their worst at times or when you yourself have been at your worst. What did you do during those times to get through it? How did you keep going? How did you deal with it?

James: The BC race was one of the lowest points I have ever been at because I was just physically exhausted and every time I would get off my feet I could not imagine standing back up. Literally. I didn't think I could... I couldn't imagine standing back up and yet I had to do it in a minute. So literally, the whole time I was thinking, "I can't do it! I can't keep doing this." That probably was one of the lowest points because I was so tired and sore, and the sun was coming out so I was getting really hot. But it's just the really small things that make a big difference and this was one of those instances. I just remember a few points in that section where

I'd be feeling that way and I was almost ready to scream - I didn't know what else to do. So I was just sitting there quietly but stewing inside. Then my one teammate would look over and he would just say something like, "This is really hard." That's all he had to say - just to know he was thinking and feeling the same thing that I was... I wasn't alone. All of us were in this together and this made a huge difference for me. For some reason, there seems to be a difference between feeling that on your own and knowing that other people are feeling that. I felt like it's just us against the environment. Everyone is busting their butts and everyone is doing what they can, and…everyone is hurting equally. Everybody is feeling that way, not just each of us individually feeling that way. So a few times in that section, where I would just be in my own world and then one of my teammates would say something that related to us feeling the same thing. Sometimes it wasn't a lot. It was just a sigh or cussing to him or her saying, "Oh wow this is hard. I can't believe how hard this is" because my teammates are not people who generally say a lot of those things out loud. So just to have that validation, that they were feeling it too and we were all feeling it…then I was like, "Okay, well, we're all in this together!"

Brittany: Final question, are there any aspects from your racing experiences, or lessons that you've learned from adventure racing, that you transfer into your everyday life outside of racing? Has AR impacted your attitude and perceptions of life outside of racing? If so, please explain.

James: I would say "Yes – absolutely!" My experiences as an adventure racer have taught me to doubt my own doubts about my abilities. What I mean is that, in almost every race at some point I've doubted whether I can finish or at least whether I can continue at a competitive pace. But somehow I always manage to go past what I thought was possible in the moment. So I've learned that doubts or fear or worry are pretty normal, but it's incredible how much further you can go beyond what you believe are your limits. I'm learning more and more that most of my limits are not true limits – they are self-imposed because of fear or self-doubt. So, what I've learned from AR that I try every day to apply in my life, sometimes successfully and sometimes not, is the concept of "feel the fear – and do it anyway." I've learned that it's ok to be scared or to be worried that you can't do something or worried that you will fail at something, as long as you try to do it. In adventure racing, I give myself permission to think and feel whatever I want. I can complain in my head, be frustrated, want to give up, whatever – as long as I keep moving forward… putting one foot in front of the other. The lesson from adventure racing is that sometimes constantly thinking about or wishing for certain comforts, makes it much harder to focus on doing the things you really need to do to move forward.

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Coaches Competencies - Nordic Skiing

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Abstract
One purpose of the present study was to investigate athletes perceptions of their coaches coach
competencies in world cup A in Nordic combined. Another purpose was to investigate how their
perceptions relate to their results. Coach competencies were measured by a Coach Competence Scale
(CCS) that captures important coach capabilities in five dimensions in terms of different competencies
which coaches must possess in their roles as coaches. Seventy two percent of the athletes participated in
the investigation that was conducted during two world cup competitions. The results show that the
athletes are satisfied with their coaches coach competencies and the results indicate a relationship between
the athletes results and their perceptions of their coaches coach competencies.

Elite athletes' perceptions of their coaches' Coach Competencies in Nordic combined

Research within sports reveals that the coach is an important factor in developing successful athletes (Blom, Watson II, & Spadaro, 2010; Jowett & Cockerill, 2003). The coach-athlete relationship is therefore at the heart of the coaching process and it is the interactions between coaches and their athletes that generate the athletes' learning and results (Jones, Armour & Potrac, 2004; Jowett & Cockerill, 2002). The coaching process has therefore occupied researchers in the field of sports for several years (Abraham, Collins & Martindale, 2006; Chelladurai, 2007; Côté & Gilbert, 2009; Horn, 2002; Myers, Chase, Beauchamp & Jackson, 2010; Myers, Feltz, Maier, Wolfe & Reckase, 2006; Myers, Wolfe, Maier, Feltz & Reckase, 2006). Interestingly, during the last few decades, coaching has also developed as its own profession outside the sport arena (Gallwey, 2000; Whitmore, 2002). The coaching profession claims that coaching is a new and effective route in the process of achieving growth and development of others (Grant, 2006; Hall, Otazo,

& Hollenbeck, 1999). The importance of relationship issues is highlighted, and it is the conversation between the coach and the coachee that is the central element in the coaching process (Moen, 2010).

Since coaches in sport are found to be crucial in the development of athletes, there should be a relationship between coach competencies and athletes' performances and results. An interesting issue in sport psychology is therefore to investigate how coaches' coach competencies relate to athletes' performances. The question to be addressed in this study is:

> *How do athletes in sport perceive their coaches coach competencies and how do their perception relate to their results in world cup Nordic combined?*

Theoretical background
Helping relationships are common in the way that they are aimed at helping the person who seeks help to achieve growth and development (Kvalsund, 2006; Lavoi, 2002; Moen, 2010). A successful helping relationship between a coach

and an athlete in sport should stimulate to grow and develop the athlete's talents (Jowett & Poczwardowski, 2007). Interestingly, the coach–athlete relationship is found to be particularly crucial in terms of creating a positive outcome or not for the athlete (Jowett & Cockerill, 2002; Lyle, 1999). Numerous studies have investigated how leadership behaviors of coaches can affect athletes satisfaction, performances, self-esteem, confidence and anxiety (Chelladurai, 1990; Jowett & Cockerill, 2002; Jowett & Ntoumanis, 2004; Olympiou, Jowett & Duda, 2008). Other studies that have investigated this relationship claim that effective relationships include basic ingredients such as empathic understanding, honesty, support, liking, acceptance, responsiveness, friendliness, cooperation, caring, respect and positive regard (Jowett & Cockerill, 2003; Jowett & Meek, 2000). On the other hand, research claims that ineffective relationships are undermined by lack of interest and emotion, remoteness, even antagonism, deceit, exploitation and physical or sexual abuse (Balague,1999; Brackenridge, 2001; Jowett, 2003).

Thus, needed competencies for elite coaches have earned attention in the field of sport coaching (Abraham, Collins & Martindale, 2006; Chelladurai & Doherty, 1998; Chelladurai & Riemer, 1998; Demers, Woodburn & Savard, 2006; Durand-Bush, Thompson & Salmela, 2006; Jones et al., 2004; Kirschner, VanVilsteren, Hummel & Wigman, 1997; Westera, 2001). Coach competencies are an important area in sport and needed competencies seem to be crucial in order to build effective relationships (Duffy, 2008; Jones, Armour & Potrac, 2002; Jowett & Cockerill, 2003; Salmela, 1996).

Coaching as a profession
Gallwey (1974) and Whitmore (2002) are recognized as two important contributors to the development of the coaching profession outside the sport arena (Stelter, 2005). The former tennis

player and coach (Gallwey, 1974) and the former race car driver (Whitmore, 2002) brought their experiences and knowledge from sport into the workplace to develop professionals in business. The profession of coaching has developed outside of the sport arena during the last few decades (Gallwey, 2000; Grant, 2006; Hall, Otazo, & Hollenbeck, 1999; Whitmore, 2002). Whitmore (2002) even claims that the quality and effectiveness of coaching in sport is now far behind the coaching that happens in business (p. 7-8).

Coaching is about establishing a helping relationship between the coach and the person with whom the coach is engaged, the coachee (Gallwey, 2000; Grant, 2006; Whitmore, 2002). The power of the individual as capable of finding solutions to his or her own problems with the help of a facilitating coach is highlighted in coaching (Moen & Kvalsund, 2008). This approach is a client-centred one influenced by humanistic psychology, which emphasizes the importance of listening to the subjective beliefs of the client (Kahn, 1996). This optimistic and trusting view of human nature is central to the field of coaching today. In this study, the following definition is used:

> *Coaching is a method that aims to achieve self actualization by facilitating learning and developmental processes to promote the resource base of another person. The method is characterized by its active involvement of the coachee through powerful questioning and active listening (Moen & Kvalsund, 2008).*

Thus, in this study coaching is defined as an approach and a tool that can be used to fulfil people's potential and improve their talent through goal oriented conversations.

Coach competencies
Researchers have noticed that practicing coaches and coachee's are lacking a well-established,

reliable and valid instrument for measuring coachee's perceptions of coach competencies (Moen & Federici, 2012). A coaching competence scale (CCS), consisting of five dimensions, was developed to help fill this void in the field (Moen & Federici, 2012). The dimensions in CCS are emphasized by several contributors in the coaching profession: The International Coaching Federation (ICF), The Coaches Training Institute (CTI), professional coaches (Auerbach, 2005), research (Grant, 2006, 2009; Moen, 2010; Moen & Kvalsund, 2008), and literature (Gallwey, 2000; Grant, 2006; Whitmore, 2002). The CCS consists of five different dimensions of coach competencies;

1) Creating the relationship,
2) Communication attending skills,
3) Communication influencing skills,
4) Facilitating for learning and results, and
5) Making the responsibility clear.

Creating the relationship. The true nature of the coaching relationship is based on mutuality. Mutuality is a relation that is built upon respectful understanding and responsive listening and interacting (Kellett, Humphrey & Sleeth, 2006; Kvalsund, 2005; Lavoi, 2002; Moen, 2010; Zeus & Skiffington, 2002;).To create such a relationship, the coach must be able to meet the coachee with thrust and respect.

Communication attending skills. The ability to ask the right questions followed by the use of active listening are key techniques in coaching (Moen & Kvalsund, 2008). The coach's attending skills are supposed to give the coachee an impression that he or she has the coach's full attention and is seen, heard and understood. Listening skills, both active and passive, are important as they enable the coachee to continue to discuss and explore the case in focus (Ivey & Ivey, 2006). Therefore, a core competency for coaches is the ability to use attending skills.

Communication influencing skills. Once the coachee's stories have been truly heard and understood, the coachee will be much more open and ready for change (Ivey & Ivey, 2006; Moen, 2010). The coach's influencing skills are supposed to influence the coachee's motivation and behaviour in order to help the coachee to achieve changes. Asking powerful questions that are open-ended (beginning with an interrogative who, what, how, where and when) are important because such questions encourage descriptive and detailed answers (Ivey & Ivey, 2006). Therefore, another competency for coaches is the use of important influencing skills.

Facilitate learning and results. The coaching process is supposed to encourage the coachee to be active, involved and to participate in his or her learning process as facilitated by the coach (Moen & Kvalsund, 2008). The aim is to explore the case in focus from many different perspectives, so that the coachee becomes aware of his or her relationship to this case and the potential for growth and learning in the situation. Another important competency for coaches is the ability to facilitate learning and results.

Make the responsibility clear. Awareness is a prerequisite for being able to take responsibility (Moen, 2010). Responsibility cannot be taken for something of which one is unaware. It's essential for coaches to clarify that the coachee is responsible in his or her learning process. In addition, extended use of attending skills, especially in the beginning of the conversation so that trust is established stimulates the coachee to open up, speak and explore the case in focus. Then, influencing skills are used to achieve a deeper understanding of the case, and both the coach and the coachee will achieve better knowledge of the case and its forming. This helps them both to become more prepared to take responsibility and make optimal decisions regarding the case. Another core competency for a coach is therefore defined as the ability to

make the responsibility clear between the coach and the coachee.

Interestingly, studies that investigate the interpersonal dynamics between the coach and the athlete in sport have received little attention and until recently researchers have demanded that more attention must be paid to coach-athlete relationship issues (Jones, et al., 2004; Jowett, 2003; Lavoi, 2002; Taylor & Wilson, 2005; Olympou, et al., 2008). Also, to our knowledge, it seems that research within Nordic combined is almost non-existent in sport psychology journals. Thus, there is a growing need for knowledge on human relations in sport and in Nordic combined in special (Poczwardowski, Barott & Jowett, 2006).

The following research question was therefore developed:

> *What are athletes perceptions of their coaches coach competencies in world cup A in Nordic combined, and is there a relationship between athletes' perceptions of their coaches' coach competencies and their results?*

Method
The participants in this study were asked to voluntarily participate in a questionnaire measuring coach competencies and athlete results. A questionnaire was chosen because both athletes and coaches are very busy planning, preparing, training, competing and evaluating their progress in sport, especially during the competition season. An investigation during the competition season, not after or before, was chosen in order to document perceptions about coach competencies when performances and results are emphasized.

Research participants
Coaches and athletes in the world cup A in Nordic combined were chosen as participants. The data was collected during the last period of

the world cup season 2011/2012, from February to early March. Forty one athletes and sixteen coaches participated in the investigation. The questionnaires were delivered and completed during the world cup competitions in Liberec (25-26. February) and Lahti (1-2.March). The athletes and coaches who participated in the investigation were from Norway (8/3), Finland (4/0), Austria (8/3), Switzerland (1/0), USA (5/2), Japan (2/2), Slovenia (2/1), Italy (4/1), France (4/2), and the Czech Republic (3/2). The athletes' average age were 25 years (the youngest 20 and the oldest 35), and the coaches' average age were 39 years (the youngest 30 and the oldest 54). Their experience as coaches at elite level varied from 12 months to 25 years. In the world cup competitions in Liberec and Lahti there were respectively 57 and 53 athletes that participated from 13 different nations. Thus, 72 % of the athletes participated in the investigation from 77 % of the nations that were participating in these world cup competitions.

The Coach Competence Scale
The CCS consists of five dimensions with different numbers of items on each subscale. The dimensions are:

1) Creating the relationship,
2) Communication-attending skills,
3) Communication- influencing skills,
4) Facilitating for learning and results, and
5) Making the responsibility clear.

It is important to note that the instrument primarily was designed to measure the coachee's perception of a coach's competency based on his or her experiences from a coaching relationship. Responses were given on a 7-point scale ranging from "Not at all" (1) to "Absolutely" (7). Creating the relationship consisted of two items. An example of an item is: "My coach expresses a fundamental thrust and respect in me". The second dimension focused on communication-attending skills. This dimensions consisted of three items. An example of an item is: "My

coach seems to understand me well when we speak together". Communication- influencing skills consisted of two items. An example of an item is: "My coach asks mainly open and direct questions". Facilitating for learning and results consisted of three items. An example of an item is: "My coach brings out my solutions for challenges that I meet". The last dimension was making the responsibility clear. This dimensions consisted of two items. An example of an item is: "My coach puts a clear responsibility on me in my learning process".

Data analysis

The data were investigated by means of descriptive statistics using the IBM SPSS 20.0 software. This approach was chosen because of the small number of respondents, which made the data unsuitable for parametric analyses. The athletes in the investigation are ranked in groups based on their world cup ranking results. To compare the groups, Cohen's d is used to measure effect sizes between the different groups (Cohen, 1992). Cohen's d is not depended of the number of participants (n) in the same way as analyses based on testing the level of significance are.

Results

Table 1 shows correlations between the different dimensions in the CCS and world cup ranking, as well as number of items, statistical means, standard deviations, and Cronbach's alphas. Note that the estimation of Cronbach's alpha also included data from the sixteen coaches that participated in the study. The reliability coefficient is affected by sample size and they were therefore included in the analysis to increase the reliability. The reliability coefficients from the validation study are also included in parenthesis (Moen & Federici, 2012).

The correlations varied from strong (0.5- 1.0) to moderate (0.3- 0.5) and weak (0.1- 0.3).Thus, the CCS can both be regarded as domain specific and multidimensional. The Cronbach's alphas in

this study for variable 1, 2 and 3 are all questionable, whereas the alphas of variable 4 and 5 are acceptable.

Table 2 shows the mean scores for the CCS and each dimension of the CCS grouped by world cup ranking, the number of athletes in each group (Rank 1-5), and the mean age of the athletes in the different ranked groups. The mean for all the athletes are also showed. Table 2 also shows the effect sizes (Cohen's d) between the athletes in Rank 1(world cup rank 1-10), and the athletes in rank 2, 3, 4 and 5, based on the mean values and standard devotion of the CCS.

A 7-point scale was used to measure coach competencies in this study. The mean values for the dimensions in the CCS are all above 6, except for making the responsibility clear (5.50). In general, the athletes perceive their coaches coach competencies to be high. There is a tendency that the athletes in Rank 1perceive their coaches coach competencies higher than the athletes in rank 2, 3 and 4.The athletes in Rank 5 seems to break this trend. Table 2 also shows that the mean age among the athletes in Rank 5 is younger than the athletes in the other groups. Cohen's d shows that the effect sizes between rank 1 and the other groups are respectively medium (0.52), large (0.93), large (1.01), and small (0.18).

Figure 1 shows the trend lines based on mean values for each of the dimension of the CCS grouped by world cup ranking.

The trend is that the athletes who are ranked higher on the world cup ranking list perceive their coach competencies to be better than the athletes that are ranked lower on the world cup ranking list. The athletes that are ranked 41 and lower (Rank 5) on the world cup ranking list do not follow this trend. They perceive their coaches coach competencies higher than the trend.

Table 1
Descriptive statistics for the CCS

Description	1	2	3	4	5	6
1 Creating the relationship	-					
2 Communication attending skills	0.583	-				
3 Communication influencing skills	0.51	0.42	-			
4 Facilitating for learning and results	0.677	0.521	0.688	-		
5 Making responsibility clear	0.279	0.148	0.31	0.25	-	
5 World Cup ranking	0.215	0.203	0.016	0.128	0.202	
Number of items	2	3	2	3	2	–
Mean	5.92	6.11	5.71	5.77	5.63	–
Standard deviation	0.92	0.68	0.84	0.97	1.3	–
[a]Cronbach's alpha	.63 (.86)	.66 (.89)	.59 (.82)	.77 (.86)	.74 (.83)	–

Note. n=41. [a]*n=57*

Table 2
Descriptive statistics for the CCS sorted by world cup ranking

Description	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	*Sum*
Creating the relationship Mean	6.43	5.94	5.66	5.58	5.84	5.92
Communication attending skills Mean	6.45	6.12	5.8	6	6.02	6.11
Communication influencing skills Mean	6.06	5.5	5.5	4.92	6.07	5.71
Facilitating for learning and results Mean	6.2	5.87	5.2	5.22	5.89	5.76
Making responsibility clear Mean	5.5	5.62	4.91	5.08	6.3	5.63
CCS Mean	30.67	29.06	27.25	26.8	30.15	29.13
Cohen's d		0.52	0.93	1.01	0.18	
Mean age	25.63	28.5	24.83	26.5	21.77	
N	8	8	6	6	13	

Note. n=41. Ranking in world cup combined: Rank 1 (1-10), Rank 2 (11-20), Rank 3 (21-30), Rank 4 (31-40), Rank 5 (41→)

Discussion and conclusions

Researchers have demanded that more attention must be paid to coach-athlete relationship issues, and studies that investigate the interpersonal dynamics between the coach and the athlete. The first purpose of this study was to investigate how athletes in the world cup A in Nordic combined perceive their coaches coach competencies. The second purpose of this study was to investigate if there is a relationship between the athletes' perceptions of their coaches coach competencies and their results.

In general, the results show that the athletes perceive that their coaches coach competencies are very good. The mean values are ranging from 5.63 to 6.11 for all the athletes (Table 2). This is an interesting finding that is in contrast with the claimed scepticism about the quality of coaching processes within sport (Whitmore, 2002).These results indicate that the effect of coaching within world cup A in Nordic combined is positive. The results also indicate that there is a relationship between the coaches coach competencies and their athletes' results. Thus, there is a tendency that the athletes that are ranked top 10 in the world cup ranking list perceive that their coaches coach competencies are better than the athletes ranked lower on the list (Table 2 and Figure 1). Cohen's d shows that the differences between the best ranked athletes and the others are from medium to large, except from the athletes that are ranked last on the world cup ranking list. They perceive their coaches coach competencies quite similar with the best ranked athletes (Table 2 and Figure 1).

In general, the relationships between the coaches and their athletes seem to be based on thrust and respect (Creating the relationship). These are the best athletes in the world in Nordic combined, and the results indicate that the coaches have managed to build their relationships with their athletes on mutuality. Mutuality is built on respectful understanding and responsive listening and

interacting. Interestingly, the athletes with the best results (Rank 1) perceive their relationships with their coaches to be better than the other athletes (Rank 2, 3, 4 and 5). This indicates that it is the interactions between coaches and their athletes that generate the athletes' results. However, as seen in Figure 1, the trend is that the athletes ranked lowest on the world cup ranking list (Figure 1, Rank 5) perceive their relationships to be better than those who are ranked in group 3 and 4. This can be explained with their young age (mean=21.7) compared to the athletes ranked in the other groups (Table 2). Thus, they probably have been given the opportunity to compete at the highest level just lately, are enthusiastic about the future and have just started to build successful relationships with their coaches on the national teams. Interestingly, the athletes in this group score their coaches quite similar as the athletes that are ranked top ten in the world cup ranking list on three of the other dimensions; communication influencing skills, facilitating for learning and results and making the responsibility clear (Figure 1). The dimensions communication attending skills and creating the relationship are on the other hand scored lower than the athletes in Rank 1. This finding support the explanation above; the coaches are helping them by being good facilitators, influencing them and are clear about that the athletes are responsible for their own learning and development. On the other hand, the results might indicate that the relationships not jet are built on mutuality. Mutuality assume that the coaches truly have a deep understanding about their athletes through the use of attending behaviour such as open questioning and listening. For the youngest athletes (Rank 5) this could be what's missing in the relationship, and with time the relationship with their coaches will hopefully develop towards mutuality. There are the youngest athletes (Rank 5) that perceive that their coaches put the greatest responsibility on them in their learning process. This result support the explanation that the coach-athlete relationships in this group are not based on mutuality jet.

Figure 1 Illustration of perceived coach competences (CCS) sorted by rank in world cup combined
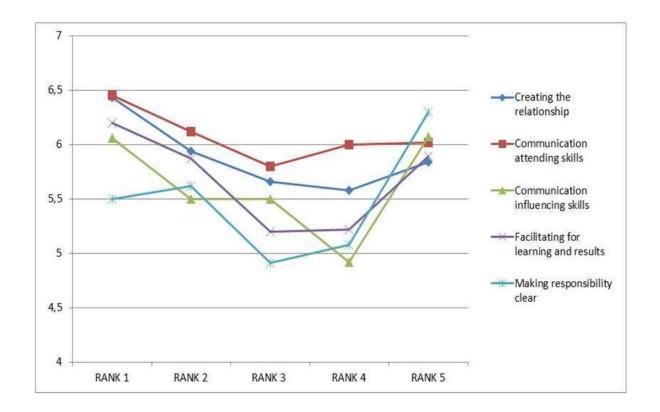

Figure 1. Illustration of perceived coach competences (CCS) by the five dimensions on the vertical axes, sorted by the ranked groups in world cup in Nordic combined on the horizontal axis. Rank 1 (1-10), Rank 2 (11-20), Rank 3 (21-30), Rank 4 (31-40), Rank 5 (41→)

The atypical scores for the athletes in Rank 5 are truly interesting; the trend for the athletes in rank 2, 3 and 4 is more linear (Figure 1). Thus, the lower the rank is on the world cup ranking list, the lower is the perceived coaches' competencies score. Could this be explained with a theory that the coaches are more enthusiastic with their best athletes and their youngest athletes (future top athletes)? This must be investigated in future research in order to fully understand the results.

In order to create successful relationships, the coach and the athlete need to spend considerable time together (Moen & Verburg, 2011; Moen & Garland, 2012). Coaches need to engage in questioning, active listening, arrange for activities that are relevant for their learning, and they have to meet the athlete with a truly interest for helping him or her to improve their capacity within sport. This is not something that is easily achieved. These results are therefore interesting

and worth noting. The athletes in world cup A in Nordic combined are clearly satisfied with their coaches coach competencies .

Conclusion

The results of this study show that the athletes in world cup A in Nordic combined in general perceive that their coaches' coach competencies are good. The results also indicate that there is a tendency that the best athletes are more satisfied with their coaches' coach competencies than the athletes who are ranked lower on the world cup ranking list. However, this study has several limitations and further studies need to be conducted before clear conclusions are made. One limitation is the sample size which made advanced statistics not of current interest. Also, the CCS should be considered as a preliminary scale measuring coaching competence. We consider that the five dimensions constituting the CCS may apply to all coaches or coachee's but other possible dimensions of coach competencies should also be explored in future research.

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The Effects of Hypnosis on an Elite Senior European Tour Golfer

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Abstract

This study examined the effects of a hypnosis intervention on the performance and flow state experiences of an elite senior European Tour golf professional. The experimental effect was assessed during 11 Senior European Tour golf events. Performance and flow data were analyzed using a single-subject design combined with a procedure to monitor player's internal experience (Wollman, 1986). The results indicated that the players mean stroke average and mean flow scores increased from baseline to intervention. There were no overlapping data points between baseline and intervention conditions for both performance and flow state scores. The qualitative data revealed hypnosis may positively control emotions, thoughts, feelings and perceptions.

In the field of applied sports psychology, hypnosis based interventions are one of the most overlooked techniques available to sports psychologists. This is surprising because there are a number of controlled studies that indicate hypnosis interventions have a notable performance enhancing effect on different athletic populations. For example, research conducted by Baker and Jones (2005, 2006, 2008) has highlighted that hypnosis can be used to enhance the performance of footballers, cricketers and martial artists. Additionally, other researchers have discovered hypnosis improved the performance of badminton players (Pates & Palmi, 2002), cyclists (Lyndsay, Thomas & Maynard, 2005), golfers (Pates & Maynard, 2000; Pates Oliver & Maynard, 2001) and basketball players (Pates, Cummings & Maynard, 2002; Pates, Maynard, & Westbury, 2001).

Pates and his colleagues obtained their positive results using a hypnosis intervention consisting of a hypnotic induction phase designed to create a state of deep relaxation, a hypnotic regression phase designed to help athletes relive an earlier life experience of their optimal performance, and a trigger control phase designed to bring athletes' ideal performance state under the control of a stimulus (Pates, et al., 2002; Pates & Maynard, 2000; Pates, et al., 2001; Pates & Palmi, 2002). Interestingly, all of the researchers employing this intervention strategy observed that many of their participants experienced elevations in both performance and a psychological state described by Csikszentmihalyi (1975) as flow.

The positive effects of hypnosis on flow have a variety of implications for elite athletes because flow states have been strongly associated with the athlete's best performances (see Cohn, 1991; Catley & Duda, 1997). Indeed, a countless number of elite athletes report flow is the crucial factor that separates winners from losers (Costas, 1999; Unestahl, 1983). These findings imply the elite athlete population may have the most to

gain from adopting hypnotic interventions into their mental training regimes.

With the notable exception of Lyndsay et al. (2005) who investigated the effects of hypnosis on flow states and the performance of elite cyclists, studies supporting this proposition are rare. The current study aimed to change this trend by investigating the effects of a hypnotic intervention upon flow states and the performance of an elite Senior European Tour Golfer in the ecological valid environment of real European Senior Tour events. Using Pates and Maynard's (2000) intervention strategy, it was expected that during hypnosis the golfer's experience of flow could be conditioned to a natural trigger (the grip on the golf club). It was then expected that after conditioning, the player would experience a more intense state of flow and lower golf scores.

An AB single-subject design was deemed the most appropriate method to study the effects of the intervention because it allowed the analysis of an intervention that cannot be withdrawn or "turned off" (Hrycaiko & Martin, 1996). Based on the recommendations of Wollman (1986) and other researchers who have utilized single-subject designs (e.g., Lerner, Ostrow, Yura, & Etzel, 1996; Smith, 1988; Swain & Jones, 1995), the present study also applied a procedure that monitored the internal experience of the player.

Method
The Participant
The participant was a male Senior European Tour Player aged 52 with 2 years of Seniors European Tour playing experience. He had won no tour events and had no experience of mental training administered by a qualified practitioner.

Experimental Design
A single-subject AB design was implemented to examine the effects of a hypnosis-based intervention on flow states and golf performance. This type of design allows the participant to

serve as his own source of control for the experiment (Barlow & Hersen, 1984; Hrycaiko & Martin, 1996). This format was most appropriate because it facilitates the analysis of the effects of an intervention that could not be withdrawn from the participant due to the ethical reason of withholding a potentially positive intervention from an elite participant (see Robson, 1994). The design required the observation of baseline performance and an intervention phase for the player. The intervention was introduced when a stable baseline or a trend in the opposite direction of the change anticipated became apparent for the participants. Based on the recommendations of Barlow and Hersen (1973, 1984) and Kazdin (1992), data was collected on 11 occasions over 16 weeks of tournament golf.

Dependent Variables
Performance analysis. Stroke average was selected as the performance indicator because it represents a global measure of the participant's overall performance. Stroke average is the average score taken from two or three rounds of stroke-play golf. A round of stroke-play golf consists of 18 holes wherein the participant records the number of strokes taken to complete each hole. At the end of the round, the scores from each hole are summed to give a total stroke-play score.

The reliability of the stroke play scores was assessed by comparing the judgments of the participant against an independent observer, who was the participant's playing partner. The reliability assessment took place after each round and resulted in a correlation of 1.00 for the scores of the participant and the independent observer. It is worth noting that a failure to score stroke play correctly would result in a disqualification of the participant from the tournament. Scores were obtained from the official championship scorekeeper.

Flow analysis. In addition to the performance data, information on the intensity of flow experienced by the participant during tournaments was assessed using the Flow State Scale (FSS-2; Jackson & Eklund, 2002). This 36-item instrument provides a quantitative measure of the nine dimensions of flow outlined by Csikszentmihalyi (1990). Reliability estimates ranged from .80 to .90. A global measure of flow was preferred in this investigation owing to Jackson's (1999) contention that single-factor approaches tend to reveal incomplete information about the total flow experience.

Treatment: The Hypnosis Intervention

The training of the participant in hypnosis took place immediately after the completion of the first baseline and was divided into three stages. In the first stage of the intervention the participant was encouraged to sit in a comfortable position and then was asked to focus on his breathing. Specifically, he was instructed to breathe deeply and to release air slowly while counting backwards from the number 10. He was then given a 15-min session involving progressive muscular relaxation (PMR). The technique originally pioneered by Jacobson (1938), involved the golfer tensing and relaxing parts of his body, while deeply inhaling. Suggestions asking the participant to contrast the differences between the tense and the relaxed muscles were given along with instructions to direct his attention to images of situations that were associated with relaxation. For example, the external image of a warm comfortable beach, or the internal sensation of floating in water.

In the second stage, an Ericksonian hypnosis technique known as a staircase induction (Hammond, 1990) was then applied. The staircase induction consisted of a journey, one step at a time, down a flight of 20 stairs. As the participant took the journey he was told to see each stair in front of him and feel the stair under his feet. At the bottom of the stairs he was told

he would see a door, and beyond the door he would see a room with a comfortable chair. The participant was then asked to sit down in the chair and focus on a small cinema screen on which appeared a relaxing scene. Throughout this stage suggestions were given to reinforce both the experience of the PMR, the deep breathing, and imagery techniques.

In the third stage suggestions were given to help the participant regress, and remember a multi-sensory experience of their best competitive performance. Specifically he was asked to include visual, auditory, tactile, olfactory, gustatory, and memory of his best performance from an internal perspective. His best performance was then conditioned to be released by a natural trigger. The trigger used was the grip of the golf clubs. The participant was then told to see himself rising from the chair and proceed out of the door and up the staircase. The participant was also told as they ascended the staircase that they would feel refreshed and alert. Once the participant re-acclimatized to the environment they were asked to access their ideal performance state by utilizing his trigger. Training was considered complete when the participant felt that an experience of his best performance was under trigger control.

Intervention Procedures

The hypnosis intervention was administered to the participant in a small, quiet and comfortable room on the college campus and lasted approximately 40 min. The training was composed of three stages: Stage1-hypnotic induction, Stage 2-hypnotic regression, and Stage-3 trigger control.

After the training, the participant was asked to commit himself to practice the techniques, by playing a 40 min audiotape recording of the live session, every day, over a seven-day interval between the first baseline and intervention phase of the study. In total, the player was given one live session, and seven audiotape sessions before

the intervention phase. To ensure participant had listened to the audio tape recording, the player was contacted daily. The quality of the players experience was assessed by examining his thoughts, feelings, and cognitions immediately after each session. Finally, it should be noted that during the intervention stage the player was not under hypnosis, instead he was merely using the trigger that was conditioned to the emotions, feelings, and cognitions he experienced during their ideal performance.

Practical Assessment Questionnaire

During the 11 tournaments the internal experience of the participant was monitored using an assessment questionnaire that included the following questions:

> *How did you feel during the performance?; What were you thinking during the performance?; Were there any outside thoughts distracting you?; What was the effect of the intervention?; Did you experience any problems?; What were your general beliefs about your performance?; and How much effort did you put into today's performance?*

The list of questions was adapted from Kazdin (1992), Kendall, Hrycaiko, Martin and Kendall (1990) and Pates et al. (2001). This information permitted on-going assessment of the quality of the participants' feelings, thoughts, and cognitions across the baseline and treatment phases. The data were analyzed by comparing the comments obtained in the baseline sessions to the comments obtained during the intervention phase of the experiment.

Social Validation Questionnaire

Following the completion of the intervention phase, the participant was asked a series of questions to assess the social validity of the Hypnosis intervention. The questions were designed to provide information concerning the importance and the effectiveness of the

intervention. This was based on the work of Pates et al. (2001), and Thomas, Maynard, and Hanton (2007). The participants were asked the following questions: *Did you perceive the intervention to be important?; Are you satisfied with the results?*; *Do you consider the changes in performance to be significant?*; and *How satisfied were you with the intervention?*

Data Analysis

The performance scores and global FFS-2 scores were plotted onto two graphs. Based on the guidelines put forward by Hrycaiko and Martin (1996) an experimental effect was analyzed through a visual inspection of the plotted data. According to these researchers the intervention had an effect when: (a) baseline performance is stable or in a direction opposite to that predicted for the effects of treatment; (b) the greater the number of times that an effect is replicated within the subjects data (c) the fewer the number of overlapping data points between baseline and treatment phase; (d) the sooner the effect occurs following the introduction of treatment; and, (e) the larger the size of the effect in comparison to baseline.

Results

Upon receiving the intervention the participant experienced an immediate performance and flow effect with no overlapping data points between the baseline and the intervention phase. Specifically the participant improved his performance from a mean of 72.8 during the baseline to a mean of 68.6 during the intervention phase. His flow data also improved from a mean flow score of 119.3 during the baseline to a mean of 151.6 during the intervention phase. The results suggest that the hypnosis intervention consistently improved golf performance and the intensity of the participant's experience of flow during real competitions.

Practical Assessment Data

After finishing each tournament, the participant responded to the practical assessment

questionnaire. This helped the researcher examine the internal experience of the player during tournament golf.

The participant indicated that after the intervention he felt "more calm"; he had fewer negative conscious thoughts and reported the intervention "stopped him thinking about the consequences of his shots" and "his overall score". He also informed the researcher he was able to stay in the present: "I was more focused on what I had to do next and it made me think one shot at a time …my concentration was also really good today nothing seemed to bother me… I was completely focused on what I had to do".

The participant also noticed he had become "more rationale about playing the game" and was "able to play with no fear". At the same time he revealed during the intervention phase he "thought more about making birdies" and "played more aggressive". He also declared he felt more comfortable: "I feel, for the first time, I belong on this tour".

Interestingly, difficult and stressful moments during the tournament triggered images of his "favourite hole" on his "favourite golf course". "Bad shots" also made him think about peak experiences from the past: "when I get into trouble, or hit bad shots, I don't know what you did, but it triggers great moments I have experienced in the past, like winning or my favourite hole on my home course".

The participant also indicated that intervention made him have more fun and experience feelings of confidence: "I feel I can beat anyone in the tournament. I feel really great out there…. It was one of the first times I had fun".

Perhaps the strangest finding was the participants report about the change in his perceptions and feelings of control: "I [stand over the ball, about to] putt and I get the feeling the ball is going in

before I hit it… when I get these thoughts the ball always goes in…it is like I know what is going to happen next". He also explained on some occasions he felt detached or dissociated from his swing: "I sometimes feel I am not really swinging the club out there… it is almost like I am watching myself".

Finally, it should be noted the social validation questionnaire revealed that the participant was extremely satisfied with the results of the intervention and recognized that the intervention had improved his performance and prize money. Indeed, just three weeks after the introduction of the intervention the participant won his first European Seniors event.

Discussion
The present study demonstrated that a hypnosis intervention may have a positive effect on the performance and flow experiences of an elite Senior European Tour Golfer. The results are consistent with previous research that showed Pates and Maynards (2000) intervention strategy improved the performance and intensity of flow states in elite athletic populations (see Lindsay et al., 2005). The findings are clearly relevant to sport psychology practitioners because they suggest hypnotic training may increase personal control over flow and the performances of elite athletes. This discovery supports the work of Unestahl (1983, 1986) who explicitly indicated that in elite athletes' level of performance, positive emotions like flow states could be initiated through hypnosis techniques. Additionally, the results support the work of Cohn (1991) and Pates and his colleagues who indicated that improved performances can be achieved with techniques designed to facilitate the flow experience (Pates et al., 2002; Pates & Maynard, 2000; Pates et al., 2001).

The qualitative data also revealed some interesting findings. First, the data show that hypnosis may increase positive emotions such as confidence and fun. Second, it also appeared

hypnosis elevates the feeling of mental relaxation resulting in feelings of calm. Third, the intervention appeared to improve the players' ability to focus his attention on task relevant information and help the player cope with distractions. Fourth, the intervention appeared to augment positive thinking by suppressing cognitions such as judging, monitoring, and censoring, and fifth, the technique seemed to alter the golfer's perceptions and feelings of control.

Taken together, these findings are consistent with the outcomes of a number of clinical experiments (e.g., Damaser, Shor, & Orne, 1963; Wadden & Anderton, 1982; Kirsch, 1994; Crawford, Clarke & Kitner-Triolo, 1996) wherein hypnosis positively controlled emotions, thoughts, feelings and perceptions.

The results appear to support a hypothesis that hypnosis is a dynamic cerebral process that activates a number of cognitive mechanisms important for athletic performance. Unfortunately, the mechanism by which hypnotic interventions increases performance and the experience of flow is not known. However, it is possible that hypnosis facilitates a shift from an analytical to a holistic style of thinking, which gives access to processes that are important for athletic performance (Crawford & Gruzelier, 1992). Some support for this conjecture comes from electrocortical research that utilises an electroencephalogram (EEG) as a major method of studying the brain by detecting changes in electrical charges in its different parts. More specifically, EEG measures brain wave patterns of activity, namely, delta, beta, theta, and alpha waves. Interestingly, Graffin, Ray and Lundy (1995) found that when hypnotizable subjects were given the suggestion to eliminate pain, theta activity shifted hemispheric dominance from the left to the right anterior temporal region. The Crawford, Clarke and Kitner-Triolo, (1996) investigation of high and low hypnotizable subjects also showed that

highly hypnotizable persons had significantly greater hemispheric alpha, theta, and beta activity in the right parietal region, than those who scored low.

Furthermore, the literature indicates that hypnosis generates more theta power resulting in greater feelings of pleasure (Stenberg, 1992) and improved attention (Crawford, *et al*., 1996). Such evidence suggests that hypnosis may assist purposeful hemispheric shifts to a desired state ideal for performance. That is, hypnotic training may increase personal control over flow states, which may in turn enhance performance. Although EEG is the most popular brain imaging technique used in hypnosis research, new techniques such as Functional Magnetic Resonance Imagery (fMRI) will surely add to our understanding of how hypnosis effects the mechanisms involved in athletic performance and phenomenological experiences such as flow.

A clear strength to this study is it's ecologically validity; rarely has an elite golfer using a hypnosis intervention been studied during professional golf tournaments. Another important aspect of the present study was that the single-subject design enabled the experimenter to be more confident that the change in flow and the performance scores were produced by the intervention and not some other uncontrollable variable. Indeed, the demonstration of a performance and flow effect when the intervention was introduced, gave a very clear demonstration that the intervention had some degree of external validity (Kazdin, 1992).

The possibility remains, of course, that the positive results are an artifact of both participant and experimenter bias. Indeed, neither were blind to the outcome thus, experimenter expectations or the demand characteristics of the experiment may have influenced the results (Kazdin, 1992). There may also have been either a Hawthorne or Rosenthal effect (Rosenthal & Rosnow, 2008). Scrutiny of performer in a

single-subject experimental design might heighten these effects. However, Drew (1976) observed, these effects tend to decline as the participants become acclimatized to being studied, so the extended length of the single-subject study could aid in controlling this effect.

The results of the study indicate that a hypnosis intervention may be an effective way of preparing professional golfers for significant competitions. Based on these findings the researcher has a number of suggestions for the sport psychology community. First, attitudes and opinions about hypnosis need to be changed within the applied sports psychology community. Second, graduate programs in sports psychology should be required to provide core foundational coursework in hypnosis. Third, scientific and professional societies should provide training for individuals in the use of hypnosis in sport.

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Baseball Pitchers Pre-Performance

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Abstract

Previous research suggest that a pre-performance routine can improve athletic performance by helping athletes focus their attention, eliminate distractions, reduce anxiety, and enhance confidence (Lidor and Singer, 2000; Weinberg and Gould, 2003). Little has been studied qualitatively concerning pre-performance routines; thus, the purpose of this study was to examine professional, minor league Baseball Pitchers' pre-pitch routines including their thoughts on the routines and their reasoning behind them. This study used a semi-structured, exploratory interview design. Subthemes emerged from the data collected: 1) observation, 2) letting go of the past, 3) breathing, 4) readjustment, 5) cognitive automaticity, 6) dictated by previous pitch, 7) external focus/cues, 8) routine sequence, 9) routine importance, 10) physiological regulation, 11) routine development, and 12) routine variance. These results can be used to endorse several strategies in skilled baseball pitchers in order to optimize their pre-pitch routine in an attempt to reach peak performance.

Introduction

A pre-performance routine can be defined as a systematic sequence of motor, emotional, and cognitive behaviors that are performed immediately before the execution of self-paced tasks (Cohn, 1990; Lidor & Mayan, 2005; Tenenbaum & Eklund, 2007). A self-paced task is performed in a relatively structured and predictable environment, where the participant can control the timing in which they perform the task (Tenenbaum & Eklund, 2007). It has been found that nearly all skilled athletes that play a sport containing a self-paced task have a pre-performance routine (Jackson, 2001; Lidor & Singer, 2003; Tenenbaum & Eklund, 2007), which helps them reach a preparatory state before performing a task (Kingston & Hardy, 2001; Lidor & Singer, 2003).

Past research suggests that a pre-performance routine can improve performance by helping athletes focus their attention, eliminate distractions, reduce anxiety, and enhance confidence (Gentner, Gonzalez, & Czech, 2008; Lidor & Mayan, 2005; Czech & Burke, 2003).

Past research has examined the temporal and behavioral consistency of pre performance routines (Czech & Burke, 2003; Jackson, 2001; Jackson, 2003). Research regarding the psychological aspects of pre-performance routines has been scarcely investigated (Yancey, Czech, Joyner, & Zwald, 2007; Ploszay, Gentner, Skinner, & Wrisberg, 2006). While most studies have looked simply at the outcome of a performance after using a routine, Cotterill, Sanders and Collins (2010) qualitatively investigated the athlete's perceptions of their routine and performance. Nine super-ordinate themes emerged: allocation of attention, psychological skills, shot selection, routine mindset, routine composition, compulsive behaviors, routine evaluation & application, top players, and moderating factors.

Allocation of attention centered refers to the ability to switch focus on and off, as well as helping the athletes stay in the present. Athletes noted that their pre-performance routine prevented distraction. The other psychological skills athletes mentioned were preventing distraction, enhancing confidence, as well as using self-talk, relaxation, and imagery. Along with all of these mental factors, the athletes' routines were also impacted by other moderating factors that could potentially "influence the successful execution of the routine." (Cotterill, Sanders, & Collins, 2010, p. 60) These factors included stress, tension, pressure, playing in big events, internal and external expectations, and fatigue. Being able to cope with these factors could benefit the athletes greatly and aid in success and optimal performance.

Many quantitative studies have investigated pre-performance routines, but very few have used qualitative interviewing to assess the athlete's perceptions concerning their routine. The purpose of this study is to fully examine professional, minor league baseball pitchers' pre-pitch routines including their thoughts on the routines and their reasoning behind them. Interviews will be conducted to understand the pitchers' perceptions of their pre-performance routines. The structure of the study is a semi-structured, exploratory design. The semi-structured interview will allow the questions to be flexible in order to understand the participants further and explore any new data comprehensively.

Method

Participants

The participants used for the study were seven (N = 7) professional, minor league baseball pitchers. All of the pitchers were considered active for the 2010-2011 minor league baseball season and had been pitching for a minimum of five years prior to the study. They were all over 18 years of age (See table 1). The participants were sought out for the study via phone, text, or email.

Procedure

After IRB approval, participants were recruited via purposeful sampling. Informed consent was read via telephone and verbal consent was requested and recorded. Semi-structured interviews were conducted and recorded over the phone. Participants were notified that the interviews were being recorded with a tape recorder. Personal information including their name, address, their birth-date, what professional baseball team they played for, and whether they were a left-handed or right-handed pitcher was requested. Since the interviews were done over the phone, after thoroughly reading the consent form, each participant was asked if they would accede to the terms by committing to a verbal signature. Upon giving verbal consent, the interview began. Once the participant's interview was tape-recorded, it was assigned a number and transcribed using the assigned number in order to assure confidentiality. Any contact information concerning the participants were printed off and placed in a locked drawer for safe keeping.

Interview Protocol

The interviews consisted of five open-ended questions. Probing questions were asked using the participant's wordage to gain a deeper understanding of their experiences. Probing allows for further explanation or clarification of the responses (Patton, 2002).

Data Analysis

The structure for the qualitative analysis used in this study was adopted from a methodological approach developed by Czech et al. (2001) and Patton (2002). This procedure contains the following four steps: 1) Approaching the interview, 2) Focusing the data, 3) Reduction, and 4) Releasing the meanings. Once the themes were formed, the data was then presented in a clear, descriptive manner. This was done in order to gain an in depth, rich description of the participants' experiences and perceptions (Patton, 2002). Reliability within a qualitative study is determined by the ability of others to produce consistent results across time (Czech et al., 2001). To insure this step, the following questions were used throughout the data collection process (Goodrich, 1988): Do the descriptions capture the experience? Does the structure match the co-participant's experience? Does the structure emerge from the data? Do others see the description? (as cited in Czech, 2001). Validity can be increased within a study by using triangulation. Triangulation within this study included a bracketing interview, member checks, the primary researcher, a journal, an advisory committee, a pilot study, and the use of NVivo (Silver, 2009; Patton, 2002; Czech, 2001).

Results

Four themes emerged from the transcripts: I) Previous Pitch, II) Adjustment, III) Next Pitch, and IV) Routine Facets. Previous Pitch had two subthemes: 1) observation and 2) letting go of the past. Adjustment had three subthemes: 1) breathing, 2) readjustment, and 3) cognitive automaticity. Next Pitch had two subthemes: 1) dictated by previous pitch, and 2) external focus/cues. Routine Facets also contained four subthemes: 1) routine sequence, 2) routine importance, 3) physiological regulation, and 4) routine development.

Previous Pitch

After throwing a pitch, nearly all of the pitchers would analytically focus on every detail of their last pitch. This type of analysis lasted for a brief period before the athlete attempted to allow their minds to move on to the next pitch or pitching sequence.

Subtheme #1: Observation. Some of the observations include how the pitchers performed during the previous pitch, their pitch location, the successfulness of the pitch, and how the batter performed during the last pitch.

> *"… just think and look at the hitter and kind of pick out some of the things that he might have done on the previous pitch. Whether he was, you know, leaning out over the plate, or whether he was cheating in, or if he was out on his front foot; where his hands are to see if I can get any advantage right off the bat, in that sense. After that, I kind of think about the pitch that I just threw and then focus on the pitch that I feel would be a pitch in that situation that could get the guy out. Obviously, I'm looking to get contact. Clearly for me, it's about if I can kind of find something that with his swing, or with his mechanics that will*

help me make a better pitch. That's kind of the stuff that I was thinking during it, so... Get the ball back, think about that, what I just saw from him, and what pitch would be the best to attack his weakness and also keep my strengths where they should be." (Participant 4)

Subtheme #2: Letting Go of the Past. Participants attempted to shift their focus by attempting to concentrate on the next pitch (performance) rather than thinking about or living in the past.

> *"...rather than thinking about what has happened in the past, or what happened the pitch before, or what happened two pitches before. I try to forget all that and get rid of all my emotions and just stay on the next pitch, on the next whatever it's going to be." (Participant 7)*

Adjustment

The pitchers discussed adjusting their thought process toward themselves to analyze and make internal adjustments. Much of the adjustment process was breathing in order to regulate focus, staying with the present pitch, slowing the game down, regrouping, recovering after a bad pitch, and finally, allowing their mind to move on to the next pitch rather than think too much.

Subtheme #1: Breathing (Internal Focus and Slowing Down / Physiological Regulation). The participants revealed many reasons for using breathing within their pre-pitch routines including to slow things down, enhance or readjust focus, controlling physiological and psychological imbalances, preparation for the next pitch, letting go of the last pitch, confidence, and staying in the present.

> *"I walk back up the mound, and I usually take in a deep breath or trying to let my mind go from that last pitch. So as I'm walking up the mound, I take a deep*

breath. I sort of re-center myself, my focus and everything." (Participant 3)

Much of what breathing and slowing things down was doing for the pitchers was regulating physiological effects of the body. The participants attempted to enhance performance by keeping the physiological aspects of the body, such as heart rate, muscle tension, and respiratory functioning, under control.

Subtheme #2: Readjustment. This subtheme was enhanced by breathing and dealt with readjustment of focus. Participants readjusted in negative situations after bad pitches as well as when things simply did not feel right.

> *"If I don't throw a quality pitch, I am more along the lines of, "What did I do? What didn't feel right? What didn't feel smooth?" I try to keep the mechanics completely out of it, but sometimes there's a little tweak or something you need to fix before the next pitch." (Participant 2)*

Subtheme #3: Cognitive Automaticity. In many cases, the participants were quoted as saying that they felt it was better if they cleared their mind and stopped thinking before the next pitch. Some of the athletes also talked about simplifying things as a means to reduce their thinking.

> *"And games where things are going bad, [I] try to minimize thought process. For me, it's impossible for me not to think about everything that's going on, so I try as much as possible to eliminate the main things; try to keep it as simple as possible. Separate my hands and throw a strike." (Participant 2)*

Next Pitch

Getting mentally ready for the next pitch was something every participant in the study mentioned. The concept of being concerned with the next pitch or pitch sequence was also mixed in with other themes such as breathing, physiological aspects, focus, regrouping, and staying in the present. The participants also mentioned the next pitch being a direct result of the previous pitch, concerning themselves with external cues, and being very committed to the next pitch.

> *"In fact, just breathing, [and thinking,] 'what am I doing the next pitch? What is the purpose of this next pitch? Am I trying to- to punch the guy out? Am I trying to locate the fastball away?'" (Participant 2)*

Subtheme #1: Dictated by Last Pitch. There were many references made to the pre-pitch routine or the next pitch being dictated by the previous pitch, the previous pitch sequence, or how the batter reacted. The athletes referred to looking at their past pitch and how the batter reacted in order to assess the next pitch.

> *"... pick out some of the things that he might have done on the previous pitch. Whether he was, you know, leaning out over the plate, or whether he was cheating in, or if he was out on his front foot; where his hands are to see if I can get any advantage right off the bat, in that sense. After that, I kind of think about the pitch that I just threw and then focus on the pitch that I feel would be a pitch in that situation that could get the guy out." (Participant 4)*

Subtheme #2: External Focus/Cues. The pitchers discussed how the information obtained from observations would be used in order to assess the next pitch. In order to do this, the pitchers would

turn their focus outward and concentrate on cues externally. The cues could be the pitch, the batter, the catcher, or the catcher's glove.

> *"Get the ball back, think about that, what I just saw from him, and what pitch would be the best to attack his weakness and also keep my strengths where they should be. After that, toe the rubber, obviously look down at the catcher, start getting that sign, and decide if we are on the same page and that's what we want to do. Then give him a good shake, come set, and focus on the center of his glove. Not necessarily trying to aim, but just kind of pick out a spot in the center of his glove so that at least you have that target that you're throwing at." (Participant 4)*

Routine Facets

In addition to psychological factors, factors such as the order of events of the routine, the importance of the routine, how they developed their routine, and how much their routine varied during competitive play played into their pre pitch routine.

Subtheme #1: Routine Sequence. The cognitive sequence began with the participant focusing on the previous pitch and/or forgetting the last pitch. After that, there was some variance in the next step of the sequence. Some of the participants discussed going into self-analysis and adjustment, and continuing on to focusing on the next pitch.

> *"The biggest thing for me is forgetting the pitch. I'm done with that pitch. [The] ball comes back to me, [inaudible words] situation, what the hitter just did, and umm, [and] basically just go with my gut instinct. [I] toe the rubber and take a second; take a deep breath. [The] first pitch that comes to mind and I feel confident with it, I go with it. If the*

> *catcher's not on the same page, then I, shake [him] off until he gets to that point." (Participant 1)*

Other times, the participants discussed going into a combination of internal analysis and working toward the next pitch (in which the two themes, Adjustment and Next Pitch, would overlap); sometimes, this would vary depending on the situation (e.g. good performance vs. bad performance).

> *"I mean, if there's something that I know I did wrong in the pitch before, I'll think about it. I'll remind myself how to correct it. I'll think about it for maybe four or five seconds tops, and then I'll forget it and I'll focus on the next pitch. And in my mind, I already know what the next pitch is going to be for me, as far as what reaction I got out of my hitter, or what reaction I got out of my pitch. I think about the next pitch, and then I'm thinking about that until I throw it." (Participant 7)*

Subtheme #2: Routine Importance. All of the participants felt their pre performance routine was incredibly important. Most of the pitchers felt that they would have trouble being successful at the professional level without a pre-pitch routine.

> *"I feel like it keeps me consistent throughout the whole game, and that's really the key to having success. It's being able to repeat your delivery and repeat pitches, and throw strikes. And I feel like having a solid, good pitch routine really helps out with that." (Participant 5)*

Subtheme #3: Routine Development. Many of the athletes expressed various ways in which they developed their routine. Some found inspiration

in coaches, siblings, other athletes, etc. while others just let their routine develop naturally. Most of the athletes said their routine developed over time and changed throughout their career.

> *"It's something that - it took many years for me to develop this routine. It doesn't really happen overnight. You learn as you go. And so this year, I really, between last year and this year, I'm more of a complete pitcher because I take the game one pitch at a time." (Participant 3)*

Discussion

Throughout this study it seems that pre-pitch routines may have psychological and physiological influences that may help in reaching optimal performance levels. Every participant mentioned the previous pitch, adjustment, and then focusing on the next pitch. The entire pre-pitch routine is aimed at successfully completing the next pitch.

Previous Pitch

With regard to the previous pitch, both observation of the pitch and letting go of the previous pitch were of optimal importance to the pre-pitch routines of the participants. In observing their environment, the pitchers adopt a means of concentrating on what is important during the previous pitch. Concentration is a "person's ability to exert deliberate mental effort on what is most important in any given situation." (Moran, 2004, p. 103) Within this brief amount of time, from the time the pitcher releases the pitch until the play ends, the pitcher is using selective attention in order to concentrate on relevant sensory and mental events and withdraw from others things around them (James, 1890; Solso, 1995). In this study, the pitchers discussed observing the previous pitch to aid them in deciding what their next

pitch was going to be to make personal adjustments for future performances.

In negative situations, letting go of the past can be a coping strategy. In a study on coping, female volleyball players felt that not letting go of mistakes they made hindered focus (Holt, Berg, & Tamminem, 2007). In this study, the participants made it a point to let that pitch go so they could fully commit to the next pitch.

Adjustment

Focus. Focus can be referred to as a key psychological component to success or one of the most important aspects of athletic performance (Anshel, 2012; Dosil, 2006; Gill, 2000). Internal focus cues are directed inward toward strategies, problem solving, organizing information, mental rehearsal, thoughts and feelings (Nideffer, 1990; Weinberg & Gould, 1995). Participants focused via breathing, controlling physiological variables, planning next pitch, correcting mechanics, refocusing, actively adjusting their routine, commitment, etc.

Another term for monitoring bodily functions and feelings to enhance focus is associative attentional strategy. This attentional strategy has been studied with long distance runners (Morgan & Pollock, 1977; Smith, et al., 1995) and aerobic tasks (Gill & Strom, 1985; Weinberg, Smith, Jackson, & Gould, 1984). The research states that for aerobic exercises, associative attentional strategies are ineffective. This type of internal, narrow attentional focus is exactly what participants of this study noted doing between each pitch.

Almost all of the participants mention slowing things down; which could relate directly to breathing, arousal and adrenaline. Breathing can have multiple functions such as keeping focus in the present, checking-in with oneself to determine level of self-control, gaining emotional control, releasing negative thoughts,

energizing oneself, facilitating trust, helping establish rhythm (Dosil, 2006) and regulating arousal levels to enhance the likelihood of a peak performance (Bunker, Rotella, & Reilly, 1985). Slowing things down, leveling out, centering, or reaching an optimal level of arousal follows the inverted-U theory of arousal.

The inverted-U theory "assumes a curvilinear relationship between arousal and performance" (Anshel, 2012, p. 131). The arousal/performance relationship is an inverted-U shape because when arousal is too high athletic performance can decrease. While the associative attentional strategy may not have been effective for endurance athletes, which requires a higher level of arousal, it may be effective in assessing physiological states for tasks that require lower levels of arousal. In combination with another routine variable (e.g. breathing), associative attentional strategy may be more effective at adjusting physiological states in order to prepare an athlete psychologically and physically for their next performance.

Readjustment. The participants used words like "re-center" (Participant 3), "regrouping" (Participant 1), "gathering myself" (Participant 6), "tweak" (Participant 2), and "adjust" (Participant 3 & Participant 4). All of these involve using the routine to make necessary physical, emotional, physiological, and psychological adjustments.

Cox (1994) referred to these types of adjustments by using two terms: centering and refocusing. Centering involves directing thoughts inward in order to make conscious adjustments concerning arousal and attention. Negative thought and distraction has an opportunity to affect the athlete if there is any sort of delay between external focus and skill execution. "You center your attention internally as you make minor adjustments in your level of arousal. Many athletes accomplish this by taking

a deep breath and exhaling slowly" (Cox, p. 84). Many of the baseball pitchers interviewed noted that this breath helped them slow things down.

Cox (1994) described refocusing as being closely related to centering and focusing. He notes that refocusing should be concentrated on attention, appropriate cues, and the task. Where athletes falter is by refocusing on errors and distractions that hurt their performance.

Cognitive Automaticity. Automaticity refers to skill mastery in that the skill requires no conscious control or attention to be completed. The skill becomes 'automatic' to the athlete (Cahmore, 2004). Automaticity was brought about by the pitchers by them attempting not to think. Some of the athletes discuss reducing cognition, and even attempting to reach a point of thinking about absolutely nothing. In terms of simplification, Tenenbaum and Eklund (2007) looked into a study conducted by Hatfield et al. (1984) that examined cognitive processes during skilled visiomotor behavior. It was suggested that "a shift in temporal asymmetry… suggests that the expert marksmen explicitly controls attention during the early part of the aiming period that quickly drops out with increased reliance on visual-spatial processing. The finding further suggests a refinement of nonessential cortical processes or the simplification of the strategic approach to shot execution" (Tenenbaum & Eklund, 2007). This is exactly what the participants of this study were doing.

Next Pitch
The previous themes were in effort to reach the proper preparatory state for the next pitch. Throughout this study, there wasn't a single athlete who wasn't investing nearly every bit of the routine towards the next pitch.

Dictated by Last Pitch. Something that was brought up by the participants is pitch selection. One aspect discussed was taking an assessment

of the last pitch, both internal and external, and using that information to help dictate the next pitch. As stated earlier with adjustment, Cox (1994) talked about making internal adjustments during a routine through a process called centering. Cox discusses attentional and arousal adjustment then focuses on an external cue or target, like the catcher's glove. Cox never mentions thinking about the previous performance during this process. The participants in this study attempt to forget previous pitches, but first assess the previous pitch and use that information to dictate the next pitch. It seems as though the pitcher tries to make the batter more of a predictable variable through analysis and assessment of multiple aspects of the batter in order see tendencies or weaknesses within the batter's approach, stance, and performance.

External Focus/Cues. External focus is directed outwardly on objects (Weinberg & Gould, 1995). Many of the participants mentioned narrowly focusing on items like the previous pitch, the batter, the center of the glove (target), and the situation (out, runner, balls & strikes). By focusing on these external cues, the pitchers get external feedback that can be used to assess the next pitch.

One participant talked about focusing on what he could control rather than "what happens behind me" (Participant 7). Dosil (2006) promotes this type of thinking in saying that it wastes energy and bases an athlete's confidence on things going on around them that they cannot control, "…players should focus on their thinking, attitude, effort, practice quality and preparation" (p. 168). With pre-pitch routines, this type of thinking falls in line with concentrating more on pitch location, pitch selection, pitching tempo, breathing, correcting mechanics, etc. and focusing less on items like teammates' errors, umpires' calls, the game's outcome, etc.

The idea of eliminating distractions comes down to focusing on relevant cues rather than irrelevant cues. Relevant cues are ones that help in producing optimal performance. Task-irrelevant cues hinder performance by distracting the athlete from reaching their optimal level of focus (Taylor & Wilson, 2005).

Staying in the present allows the pitcher to focus on relevant cues and disregard distractions. Taylor and Wilson (2005) refer to this type of thinking as mindfulness, saying that, "mindfulness teaches athletes to focus on the present rather than dwelling on the past mistakes or future results" (p. 58). Mindfulness allows for a calm physiological state accompanied by relaxed muscles, slower breathing, and lower heart rate, enabling the athlete to be more confident.

Routine Facets

Routine Sequence. Although not identical, it became apparent that all of the pitchers' routines followed a sequential order. Previous research has focused on the effect of routine consistency on performance outcomes within each participant, not consistency of routine between participants. For example, Lonsdale and Tam (2008) quantitatively examined temporal and behavioral consistency among NBA players. While temporal routine variance did not make a difference, sequential behavioral variation led to worse performance. Although important, the results did not address or analyze the sequential order of the routines.

Routine Importance. Pre-performance routines are considered very beneficial in sport psychology, especially in enhancing performance of self-paced tasks Tenenbaum & Eklund, 2007; Lidor & Mayan, 2005; Amberry, 1996; Jordan, 1994). Something that has yet to be researched is the importance a routine is to the athletes. Participants felt that a pre-pitch routine was very important to their performance. Every participant

claimed their routine to be very important to their success; it seems apparent the participants believe part of their success at the professional level is in relation to the pre-pitch routine they've developed.

Routine Development. The participants of this study cited several influences when it came to pre-pitch routine development. These influences include coaches, siblings, and other athletes. Consistent with previous research, most of the athletes noted that their current routine developed over time (Cotterill, Sanders, & Collins, 2008). The participants incorporated information provided by influences and, depending on positive and negative perceptions and/or performances, adjusted their routine throughout their pitching career.

Conclusion

It seems that pre-pitch routines may have psychological and physiological influences that may help in reaching optimal performance levels. The pre-pitch routine is a sequential process aimed at successfully completing the next pitch. The current study provides initial qualitative support for the effectiveness and importance of pre-pitch routines in performance.

As one of the first studies to qualitatively examine pre-pitch routines, future research could examine the effectiveness of Associative Attentional Strategy when applied to anaerobic activities. In depth, quantitative analysis could examine the frequency that pitchers across a variety of competition levels use the current themes and in what situations. It could also be beneficial to study how pre-pitch routines vary after both good and bad pitching. The effect of the pitcher's arousal level as it pertains to their pre-pitch routine could also be investigated.

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