



Open Research
Archive

<https://research.stmarys.ac.uk/>

TITLE

Psychology of Distance Running

AUTHOR

Winter, Stacy and Meijen, Carla

DATE DEPOSITED

4 October 2021

This version available at

<https://research.stmarys.ac.uk/id/eprint/4974/>

COPYRIGHT AND REUSE

Open Research Archive makes this work available, in accordance with publisher policies, for research purposes.

VERSIONS

The version presented here may differ from the published version. For citation purposes, please consult the published version for pagination, volume/issue and date of publication.

Chapter 5

Psychology of Distance Running

Stacy Winter and Carla Meijen

Highlights

- Distance running is unique from a psychological perspective
- Thoughts, feelings, and behaviours are interlinked and play an important role in distance running performance
- The role of psychological factors: confidence, motivation, and emotions are discussed in relation to the demands of distance running
- To facilitate these psychological factors, the evidence surrounding the use of psychological strategies in distance running is outlined

Introduction

When it comes to middle- and long-distance running events, whether it is the 800m or a marathon, psychology plays a major role. The psychological effects on performance can be explained through what we think, how we feel, and subsequently the way we behave. This is a cyclical process and a key component to consider, is the way our thoughts, feelings, and behaviours are interlinked and influenced by our environment (Bandura, 1997). For example, at the start of a race a distance runner may become aware of how many other runners there are around them, start to get worried about their positioning, and as a result abandon the conservative pacing strategy they had initially planned. Only minutes into the race, they can get upset and frustrated at themselves. Not having the right approach or mental preparation to deal with the demands of distance running can even lead to drop-out (Antonini et al., 2016). When considering the psychological impacts on endurance running, we therefore need to be aware of how our thoughts influence the decisions we make, as well as how we feel.

There are a wide array of psychological factors that can play a role in distance running. Endurance athletes may recognise the impact of their reasons for running, self-doubts in their ability, feeling nervous before a race, the difficulty in remaining focused when a session does not go as expected, worries about sticking to a race plan, or having thoughts around the urge to slow down or quit. To

help manage the psychological factors of motivation, emotions, and self-belief, endurance athletes can draw on psychological strategies such as self-talk, imagery, attentional focus, and goal setting. In this chapter we will explain the role of these psychological factors and outline the evidence around the use of psychological strategies in distance running.

Psychological factors

Endurance performance is unique from a psychological perspective (Meijen, 2019), a runner requires motivation to put in the training hours, there is a lot of time to think, and it will probably hurt at some stage. Having that much time to think can also provide fuel for self-doubt and other unwanted thoughts, or one might question their pacing strategy or reasons for doing the activity. The next section of this chapter will outline what we currently know about confidence, motivation, and emotions in distance runners.

Self-belief in distance running

Self-belief is one of the important psychological factors that plays a role in distance running. Athletes may question ‘*Where does my confidence come from?*’ ‘*Who influences my self-belief?*’ and ‘*Why is it important for my performance?*’ Self-belief is represented by the psychological concept of self-efficacy (Bandura, 1997). Self-efficacy refers to a judgement about one’s own perceived capabilities, or in simple terms, what a distance runner believes they can do. It is important to note that athletes do not possess a single self-efficacy belief; instead they are dynamic and specific. Firstly, beliefs are dynamic, in that they can and do change based upon the information that is available to a distance runner. For example, beliefs are likely to change based upon how well training sessions have gone, feedback received from coaches, performances in races, and any setbacks experienced, e.g. injuries. Secondly, although typically focused on a task (e.g. running a 5km), beliefs are specific, in that a distance runner may have a high belief in their ability to execute a race plan or sustain a tough pace, but lower levels of belief in their change of pace or finishing speed.

A distance runner’s self-efficacy beliefs develop through the influence of four sources: past accomplishments, vicarious experiences, verbal persuasion, and physiological states (Bandura, 1997). Past accomplishments are the most powerful source and can come from a distance runner’s perceptions of the volume and quality of work completed, trusting their training schedule, and success in races. Vicarious experiences are based around modelling from others, for example, observing a runner from the same training group (who the runner perceives to be of similar ability) achieve a personal best. The third source, verbal persuasion can either come from within (see section on self-

talk later within this chapter) or from feedback and support from those with expertise and credibility to the distance runner (e.g. coaches and training partners). Finally, physiological states refers to perceptions of strength, fitness, pain, and fatigue appraised by the distance runner, in order to successfully meet the task at hand (Anstiss, Meijen, & Marcora, 2018; Samson, 2014).

Efficacy beliefs are important, as they help shape the distance runner's behaviour and thought patterns. For example, athletes high in self-efficacy set themselves more challenging goals, exert greater effort to accomplish tasks, are willing to persevere when faced with difficulties, and experience more positive emotions (Feltz, Short, & Sullivan, 2008; Moritz et al., 2000). Shaping behaviour and thought patterns is where self-efficacy has been positively associated with sporting performance. However, as Sir Mo Farah highlighted: *"It doesn't just come overnight, you've got to train for it and believe in yourself; that's the most important thing"* (Abidi, 2012). It is therefore recommended to establish where a distance runner is currently getting their belief from and the subsequent influences on their performance. Novice runners, for example, will have less efficacy sources to draw upon compared to the elite distance runner, as these sources are developed and accumulated through a variety of experiences, both positive and negative (Anstiss et al., 2018). For a novice runner, they will need to create an initial sense of belief and develop gradually, compared to the experienced distance runner whose focus could be on reinforcing and strengthening their efficacy beliefs. Psychological strategies can be adopted by both elite and novice distance runners for developing their self-efficacy and will be addressed later in this chapter.

Motivation

Motivation is about wanting (Baumeister, 2016), and what causes us to act in a certain way (Ryan & Deci, 2000). It is, however, not necessarily just about how much (quantity) motivation someone has, but also about the quality of motivation. A question to find out about the quality of a runners motivation is *'What are the reasons that you take part in running?'* or *'Why do you run?'*. Typically, answers vary from extrinsic factors such as *'I want to beat others'*, *'I want to win'*, *'I want to beat a time'*, *'I want to be faster'*, to intrinsic factors such as *'I enjoy the feeling and freedom of running'* or as stated by Haile Gebrselassie: *"I love running and I will always run"* (Quotetab.com, 2020). Self-determined types of motivation (or autonomous motivation), where the runner has more control over their motivation, are associated with more positive outcomes (Deci & Ryan, 2000; Goose & Winter, 2012), including lower perceived susceptibility to injury in marathon runners (Chalabaev et al., 2017). Examples of autonomous motivation are: (i) identified regulation, where a runner can identify with the reasons for doing a task, such as a tough weight session; (ii) integrated regulation, where a runner values a task or a goal because it is meaningful to them; and, (iii) intrinsic regulation, where a runner

engages in a task for the pure enjoyment. Non self-determined (or controlled motivation), relates to external regulation, where a runner performs a task because of an external demand, such as completing it for their coach or an external reward. Finally, introjected regulation, is where the athlete engages in a task because they would feel guilty or ashamed otherwise. Neither types of these controlled motivation are particularly helpful for enjoyment and long-term engagement with the sport, although external rewards have been found to benefit performance (see McCormick, Meijen, & Marcora, 2015, for a review).

It is also important to consider a distance runner's achievement goals, which represent how they define success from either a task or ego orientation (Nicholls, 1984). A runner would be task oriented when their main focus is on the development of the self, irrespective to other runners. Whereas, a runner would be ego oriented if their main focus was demonstrating superior performances to others. A task orientation has been associated with greater enjoyment, reported satisfaction, engaging in positive achievement, striving through effort, persistence, challenging task choices, and intrinsic motivation (Keegan, 2019). Conversely, an ego goal orientation has been associated with dysfunctional behaviours (e.g. effort withdrawal, low persistence, avoidance of moderately-challenging tasks), self-serving attributions for outcomes, greater stress and anxiety, and a tendency towards morally unacceptable behaviours (Keegan, 2019). Furthermore, within training scenarios, high levels of task orientation have been associated with valuing practice and committing to it for development reasons, whereas high levels of ego orientation have been linked to endorsements of avoiding practice and preferring simply to compete (Roberts & Ommundsen, 1996). However, within the context of high-level sport, where a clear emphasis is placed on gaining the normative edge, Hodge and Petlichkoff (2000) found that athletes reported a complementary balance of both the desire to demonstrate superior abilities over others and to develop through personal mastery. It may therefore be suggested that a high ego orientation is not necessarily detrimental to the distance runner, as long as it is combined with a high task orientation.

Emotions

Emotions can also play a big role in distance running. A marathon, for example, can be a rollercoaster of emotions where a runner may experience nerves just before the start, excitement during the first couple of miles, and frustration or despair towards the later stages. Emotions are a response to what is happening in the athlete's environment, or a response arising from thoughts in an athlete's mind (Lazarus, 2000). This can include anticipation of an upcoming race, as well as thoughts during and after events. When an athlete faces a demanding situation, like a county cross-country race with qualification for the national championships, they make a judgement of whether there is

something at stake (*'Is the situation important to me?'*), if there is a potential for harm or benefit (*'Is there a potential for the situation to help me achieve my goal?'*), and what is at stake (*'Does it influence my ego ideals, moral values, well-being?'*). These judgements are combined with an evaluation of what resources an athlete perceives to have to cope with the demands of the situation, leading to the experience of emotions (Lazarus, 1999; 2000). Typically, when there is a potential for harm and the athlete does not feel that they have the resources to deal with the situation, they are likely to experience a negatively valenced emotion such as anxiety, frustration, despair, or anger. For an athlete, it is helpful to understand what influences their emotions, as these are likely to influence performance (Beedie, Lane, & Wilson, 2012).

When an athlete experiences an emotion, this can influence their behaviour and decision-making, such as pacing. For example, Paula Radcliffe mentioned: *"You see with me, when I'm nervous, I smile and laugh"* (Brainyquote, 2020). How athletes perceive and regulate their emotions is a relevant factor to consider. Some runners may perceive that a negatively labelled emotion, such as anxiety or anger, to be helpful to performance, for example feeling anxious before a race could be an athlete's optimal pre-performance state. Whereas, other athletes will perceive anxiety to be unhelpful (Beedie, Terry, & Lane, 2000; Robazza et al., 2008) resulting in behaviours such as holding back. Being aware of one's emotions and being able to regulate emotional states can influence running performance (Beedie et al., 2012; Rubaltelli, Agnoli, & Leo, 2018). The awareness of which emotional states are helpful to an athlete's performance can be developed through reflective practice. This can help an athlete to engage in emotion regulation to move towards an optimal emotional state, which is not only beneficial to performance, but also to a runner's well-being. To help regulate emotions, runners have reported using goal-setting, recalling of previous accomplishments and how they feel afterwards (Stanley et al., 2012), emotional intelligence (Nicolas et al., 2019), and having a pacer. These have all been shown to benefit positive emotions within distance running (Fullerton et al., 2017).

Summary of psychological factors

Thoughts, behaviours, and feelings play a big role in distance running performance. We have specifically considered the psychological impacts of self-belief, motivation, and emotions to highlight the unique demands of endurance events. It is important to develop an awareness of how these psychological factors impact our thoughts, the decisions we make, how we feel, and subsequent behaviours because they can directly impact coach-athlete interactions, training sessions, and performances in races, in addition to athlete enjoyment, satisfaction, and well-being. We can, to an extent, influence these psychological factors through the use of psychological strategies. In the section above we have started to outline ways to facilitate psychological factors and manage the

psychological demands of distance running. In the section below we will outline some of the strategies that can help push the psychological limits in running, these include self-talk, imagery, goal-setting, and attentional focus.

Psychological strategies

Self-talk

Runners may be familiar with having an internal dialogue, which can be statements you say to yourself out loud or inside your head. This internal dialogue can be automatic or strategic (Hardy, 2006). Automatic self-talk is an internal dialogue that is not planned or prepared, and there is not always an awareness of this dialogue. Whereas, strategic self-talk relates to planned statements that serve a purpose to achieve a goal. Using self-talk in a strategic manner has positive outcomes, it can benefit confidence (Hatzigeorgiadis et al., 2009), emotional states (Lane et al., 2016), pain management, motivation, perceived effort (Blanchfield et al., 2014; Hatzigeorgiadis et al., 2018) and attentional focus (Van Raalte et al., 2015), as well as performance (Barwood et al., 2015). When using strategic self-talk, the distance runner can choose between instructional and motivational types. Instructional self-talk includes statements that focus on technique or form (*'Run tall'*), tactics (how to pace a race; *'Start steady'*), or how to direct attention (*'Pay attention where the course gets slippery'* in cross-country). Motivational statements can be used to facilitate confidence (*'I can do this'*) and for motivational reasons such as putting in effort (*'Try hard!'*) and psyching yourself up. Ryan Hall provides a great example of the motivational self-talk he uses: "*I just tell myself over and over again: You're doing great*" (Lobby Havey, 2020). It is helpful to distinguish between these two types of self-talk so runners can be more strategic and specific in their use, and adapt the self-talk according to their needs, rather than relying on one or two general recurring self-talk statements.

Distance runners can develop self-talk plans through the 'IMPACT' approach (McCormick & Hatzigeorgiadis, 2019). This approach works through six steps: 1) Identify what you want to achieve, 2) Match your self-talk to your needs (considering the type of self-talk: instructional or motivational), 3) Practice cues with consistency, 4) Ascertain which cues work best for you, 5) Create specific self-talk plans, and 6) Train self-talk plans to perfection. In essence, this approach encourages distance runners to reflect on what they want to achieve and adjust their self-talk accordingly. Throughout this process, it is recommended that different self-talk statements for different parts of a race or training session are identified; for example, in the early stages of a race a runner might want to focus on their pace and use an instructional self-talk statement (*'Focus on my own race'*) and for the later stages, a motivational statement such as *'Dig deep'* can be helpful. Adapting your self-talk is important,

considering that internal dialogues change when the intensity of the exercise increases (Aitchison et al., 2013). When ascertaining which cues/self-talk work best, ensure to notice your self-talk and the effects it has. When practicing different statements, reflect on what is useful and practice in training first. It may take some time to master self-talk plans, which is why there may not be an immediate performance effect. For example, McCormick, Meijen, and Marcora (2018) did not find an immediate effect of motivational self-talk on ultra-marathon performance, but they found that runners were still using the self-talk strategies after six-months. The effect of self-talk may also relate to the psychological factors previously covered in this chapter, such as positive emotions, confidence, or improved quality of motivation. Finally, when developing self-talk statements, it is useful to keep them brief, memorable, ensure the statement feels right for you, and they have a motivational or instructional purpose (McCormick & Hatzigeorgiadis, 2019).

Imagery

Imagery is a popular psychological strategy used by athletes across all distance running events. It is defined as: “Using all the senses to re-create or create an experience in the mind” (Vealey & Greenleaf, 2006, p.248). The most important thing with imagery is using multiple senses, such as what an athlete sees (visual), smells (olfactory), feels (kinaesthetic), and hears (auditory). For example, a distance runner can see where other athletes are around them, smell the fresh air, hear the crowd cheering, and feel their legs striding strongly. From using as many senses as possible, the athlete can imagine an upcoming race or use imagery to reflect back on a previous successful race or training session.

There are two different perspectives athletes can choose from when using imagery. Internal (first-person perspective) is when a distance runner would see the image from inside their body, the way their eyes would normally see the situation. Whereas, external (third-person perspective) is seeing an image from outside their body, as if viewing themselves on video footage. Athletes have successfully used both imagery perspectives for a number of different reasons, which can be linked to the previously discussed psychological factors in this chapter (Martin, Moritz, & Hall, 1999). For example, focus of attention, by imagining the correct running technique or execution of a race plan. It can aid drive and commitment by imagining a specific setting that is highly motivating (e.g. standing on a podium receiving a medal). Self-belief can be enhanced through imagining past accomplishments and coping with situations the athlete perceives as challenging, helping them prepare for any race scenario. Finally, images designed to induce relaxation or increase arousal can be used by the athlete to reach their ideal pre-race performance state.

Imagery, just like physical performance, is considered to be a collection of skills that can be improved with practice and experience. The extent to which distance runners can benefit from imagery depends on their ability to create vivid images and control them in a desired way (Vealey & Greenleaf, 2006). For example, some athletes may initially have very blurry images or are only able to hold an image in their mind for a few seconds. The more runners practice their imagery, the more skillful they will become in producing clear, multisensory, and controllable images. To aid the effectiveness of using imagery, the PETTLEP model (Holmes & Collins, 2001) was developed. Each letter of the PETTLEP acronym relates to an element of the real-life situation: Physical, Environmental, Task, Timing, Learning, Emotional, and Perspective. The authors of PETTLEP conceptualise actual physical performance and imagery on a continuum (Holmes & Collins, 2001). The closer towards the physical end of the continuum, the more effective imagery is likely to be.

Eluid Kipchoge was noted as saying: “*Sometimes I dream of running fast and being beaten on the line, then I wake up and realise it was a dream*” (Phillips, 2018). Although this quote indicates it was a dream, PETTLEP guidelines can be applied to his real-life scenario of preparing to break the two-hour mark for the marathon distance. For example, Eluid Kipchoge could purposefully imagine his marathon pacing strategy (Task), wearing his racing attire (Physical), using video footage to stimulate vivid details of the Vienna course (Environment), the 4.34 min per mile pace (Timing), incorporating his Emotional responses, and viewing this internally from what his eyes would see, e.g. the car, projected laser beams, and pacers around him (first-person Perspective). The final recommendation from the PETTLEP model, is that as any Learning takes place, the athlete should update their imagery accordingly to reflect this (Wakefield & Smith, 2012; Williams et al., 2013).

Goal-setting

Goal-setting has consistently been demonstrated as one of the most effective human behaviour techniques, which both coaches and athletes can employ: “*It’s so motivating to have goals to aim for and achieve; it gets you out of the door when you might be having second thoughts*” Jo Pavey (timeoutdoors.com, 2020). Specifically, goals can fuel motivation, by encouraging persistence in the pursuit of a runner’s aims and helping to direct their attention (Tenenbaum, Spence, & Christensen, 1999). For example, if a runner has set themselves a goal of decreasing their 1 km repetition time, this may help them focus on what is required, and promote intensity and effort to achieve this outcome. Across all sports, a distinction is made to three types of goals: outcome, performance, and process (Burton et al., 2010). Outcome goals focus on achieving a desired result often at the end of a race, such as finishing in the top three. An athlete is not in total control of reaching their outcome goal, since it depends, at least in part, on the performance of opponents. Performance goals refer to an

athlete's individual performance in relation to their own standard of excellence, such as a particular time-based goal or achieving a personal best. An athlete has greater control of achieving a performance goal because other athletes do not directly affect the goal's attainment. Process goals are concerned with how an athlete performs a particular skill, displays a certain technique, or carries out a specific strategy, such as focusing on foot strike, posture, or stride length. These types of goals are directly within the athlete's control. Process goals are especially important, as performance and outcome goals fail to focus on preparing the runner for difficulties that could be encountered. Runners may feel dejected if they are far away from the time-based goal they were looking to achieve, or surprised if it's going much better than expected.

It is recommended distance runners set all three types of goals for motivational purposes, with an emphasis on performance and process goals to direct attention and positively affect behaviour (Burton et al., 2010). Given the large amount of time athletes spend running, it is important performance and process goals are set for training scenarios as well as races. Setting goals alone though does not ensure they will impact changes in behaviour and subsequent improvements in performance (Weinberg, 2010). Table 5.1 shows six goal setting principles that are tailored to a distance runner.

<TABLE 5.1 HERE>

Attentional focus

Finally, how we focus our attention is helpful to consider when distance running. There are different ways of focusing your attention, such as focusing on how the run feels, the weather conditions, pacemakers, or opponents. This is important to consider, as throughout a run a distance runner can adapt their attentional style to optimise performance. Traditionally, a distinction was made between associative (focusing thoughts on bodily sensations) and dissociative (focusing thoughts on external distractions to move attention away from the task) strategies (Morgan & Pollock, 1977), but this has been seen as overly simplistic. More recently Brick, MacIntyre, and Campbell (2014) introduced a five-category model of attentional focus where they identified three categories for associative focus (active self-regulation, internal sensory monitoring, and outward monitoring) and two categories for dissociative focus (active distraction and involuntary distraction). When a runner engages in active self-regulation, their thoughts focus on relaxing their body, their technique, rhythm, or their pacing strategy. Internal sensory monitoring includes focusing on breathing, how the body feels, and muscle tiredness. Whereas, a runner who uses outward monitoring focuses on environmental information that is relevant to them including mile markers, competitors, and split-times. A dissociative focus can be involuntary, where a runner distracts themselves by the scenery or irrelevant daydreams. Or active,

where the runner's focus is on task-irrelevant thoughts such as talking to others during a run or attending to a task such as planning the interior redecorating of a house in your mind.

Being aware of these five categories is relevant because strategically focusing your attention in a specific way can influence feelings and benefit various aspects of running (Brick, MacIntyre, & Schücker, 2019). Laura Muir made an interesting distinction between training and racing, regarding her attentional focus: “*With training you can get away with it – you know what splits you have to do, so you can just get on with it. But when it comes to racing you need to be really switched on*” (Ingle, 2018). Therefore, it is helpful to consider what the context, goal, or aim is when directing your attention, is it to optimise your pacing, to help reduce anxiety, your running rhythm, or deal with pain and discomfort? Consider making a plan beforehand, when a particular attentional strategy may be useful. For example, focusing on bodily sensations such as tense shoulders or breathing can help to inform pacing decisions when you are going too fast or too slow. However, focusing too much on bodily sensations throughout a run can increase the perceived effort of a run. A focus on technique can be helpful in situations where a task is difficult or when a runner is fatigued (Samson et al., 2017). Conversely, it is important to note that focusing too much on breathing or technique can interfere with automated running processes and running economy (Schücker et al., 2014; Winter, MacPherson, & Collins, 2014). The act of (periodic) smiling, an active self-regulation strategy, has been found to be useful to help reduce perceived effort and improve running economy (Brick, McElhinney, & Metcalfe, 2018). Voluntary and involuntary distraction can be useful to help distract from painful sensations when the run feels hard, but this can interfere with running fast and can lead to ignoring warning signals of injury. Outward monitoring can be helpful when it comes to pacing, such as being aware of the weather conditions and when one might encounter a head or tailwind, or a twisty section of a cross-country course.

To help integrate these attentional strategies, the first step is to become aware of the various demands of the run, the second step is to identify which attentional strategy would be suitable for these demands, and finally the athlete can draw upon psychological strategies such as self-talk and imagery to aid switching attentional focus during the distance run.

Summary

Within this chapter we have considered the psychological impacts on distance running and the importance of being aware of how thoughts influence decisions we make, how we feel, and subsequent behaviours. There are a wide array of psychological factors that can play a role in distance running. The role of self-belief, motivation, and emotions were specifically discussed to

highlight the unique demands of endurance events and how impactful these psychological factors can be. To facilitate these psychological factors, the evidence around the use of the psychological strategies (self-talk, imagery, goal-setting, and attentional focus) in distance running were outlined. To help push the psychological limits in running, these strategies target thoughts, feelings, and behaviours within an endurance setting, influencing the way a distance runner functions or performs. The psychological strategies we have outlined can benefit distance runners from all age groups and experience levels.

You may consider working with a qualified sport psychologist who can assess your specific psychological needs and educate you on the psychological factors and corresponding strategies you could employ. Not only will these strategies be aimed at changing thoughts, feelings, and behaviours impacting distance runner performance, but they may also have a long-term effect on an athlete's perception, which will change how they approach future situations. Finally, we would recommend distance runners practice using the psychological strategies of self-talk, imagery, goal-setting, and attentional focus before and during their runs and training sessions, before adopting a strategy within a competitive scenario. This will allow familiarisation with the psychological strategy, and any modifications required to suit the individual distance runner can be applied before implementing the strategy into a race.

References

- Abidi, M. (2012). Behind the victory prostration. <http://www.the-platform.org.uk/2012/09/06/the-meaning-behind-the-victory-prostration/> Accessed on: 08/09/2020.
- Aitchison, C., Turner, L. A., Ansley, L., Thompson, K. G., Micklewright, D., & Gibson, A. S. C. (2013). 'Inner dialogue and its relationship to perceived exertion during different running intensities', *Perceptual and Motor Skills*, 117(1), pp. 11-30.
- Anstiss, P. A., Meijen, C., & Marcora, S. M. (2018). 'The sources of self-efficacy in experienced and competitive endurance athletes', *International Journal of Sport and Exercise Psychology*, published online, doi: 10.1080/1612197X.2018.1549584.
- Antonini Philippe, R., Rochat, N., Vauthier, M., & Hauw, D. (2016). 'The story of withdrawals during an ultra-trail running race: A qualitative investigation of runners' courses of experience', *The Sport Psychologist*, 30, pp. 361-375.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, WH: Freeman and Company.

Barwood, M. J., Corbett, J., Wagstaff, C. R., McVeigh, D., & Thelwell, R. C. (2015). 'Improvement of 10-km time-trial cycling with motivational self-talk compared with neutral self-talk', *International Journal of Sports Physiology and Performance*, 10(2), pp. 166-171.

Baumeister, R. F. (2016). 'Toward a general theory of motivation: Problems, challenges, opportunities, and the big picture', *Motivation and Emotion*, 40(1), pp. 1-10.

Beedie, C. J., Lane, A. M., & Wilson, M. G. (2012). 'A possible role for emotion and emotion regulation in physiological responses to false performance feedback in 10 mile laboratory cycling', *Applied Psychophysiology and Biofeedback*, 37(4), pp. 269-277.

Beedie, C. J., Terry, P. C., & Lane, A. M. (2000). 'The profile of mood states and athletic performance: Two meta-analyses', *Journal of Applied Sport Psychology*, 12(1), pp. 49-68.

Blanchfield, A. W., Hardy, J., De Morree, H. M., Staiano, W., & Marcora, S. M. (2014). 'Talking yourself out of exhaustion: the effects of self-talk on endurance performance', *Medicine and Science in Sports and Exercise*, 46(5), pp. 998-1007.

Brainyquote (2020). Paula Radcliffe Quotes.

https://www.brainyquote.com/quotes/paula_radcliffe_432016 Accessed 08/09/2020

Brick, N., MacIntyre, T., & Campbell, M. (2014). 'Attentional focus in endurance activity: new paradigms and future directions', *International Review of Sport and Exercise Psychology*, 7(1), pp. 106-134.

Brick, N., MacIntyre, T., & Schücker, L. (2019). 'Attentional focus and cognitive strategies during endurance activity' in Meijen, C. (ed.) *Endurance performance in sport: Psychological theory and interventions*, Oxon, UK: Routledge. pp. 113-124.

Brick, N. E., McElhinney, M. J., & Metcalfe, R. S. (2018). 'The effects of facial expression and relaxation cues on movement economy, physiological, and perceptual responses during running', *Psychology of Sport and Exercise*, 34, pp. 20-28.

- Burton, D., Pickering, M. A., Weinberg, R. S., Yukelson, D., & Weigand, D. (2010). 'The competitive goal effectiveness paradox revisited: Examining the goal practices of prospective Olympic athletes', *Journal of Applied Sport Psychology*, 22, pp. 72-86.
- Burton, D., & Weiss, C. (2008). 'The fundamental goal concept: The path to process and performance success' in Horn, T. S. (ed.) *Advances in sport psychology*. Champaign, IL: Human Kinetics, pp. 339-375.
- Chalabaev, A., Radel, R., Ben Mahmoud, I., Massiera, B., Deroche, T., & d'Arripe-Longueville, F. (2017). 'Is motivation for marathon a protective factor or a risk factor of injury?', *Scandinavian Journal of Medicine & Science in Sports*, 27(12), pp. 2040-2047.
- Deci, E. L., & Ryan, R. M. (2000). 'The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior', *Psychological Inquiry*, 11, pp. 227-268.
- Donovan, J., & Williams, K. J. (2003). 'Missing the mark: Effects of time and causal attributions on goal revision in response to goal-performance discrepancies', *Journal of Applied Psychology*, 88, pp. 379-90.
- Feltz, D. L., Short, S. E., & Sullivan, P. J. (2008). *Self-efficacy in sport*. Champaign, IL: Human Kinetics.
- Fullerton, C. L., Lane, A. M., & Devonport, T. J. (2017). 'The Influence of a Pacesetter on Psychological Responses and Pacing Behavior during a 1600 m Run', *Journal of Sports Science & Medicine*, 16(4), p. 551.
- Gollwitzer, P. M., & Oettingen, G. (2019). 'Goal attainment' in Ryan, R. M. (ed.) *The Oxford handbook of human motivation*. New York, NY: Oxford University Press, pp. 247-268.
- Goose, M., & Winter, S. (2012). 'The coach's impact on long distance runners' training and competition motivation', *International Journal of Sport Science and Coaching*, 7, pp. 383-398.
- Hardy, J. (2006). 'Speaking clearly: A critical review of the self-talk literature', *Psychology of Sport and Exercise*, 7(1), pp. 81-97.

Hatzigeorgiadis, A., Zourbanos, N., Mpoumpaki, S., & Theodorakis, Y. (2009). 'Mechanisms underlying the self-talk–performance relationship: The effects of motivational self-talk on self-confidence and anxiety', *Psychology of Sport and Exercise*, 10(1), pp186-192.

Hatzigeorgiadis, A., Bartura, K., Argiropoulos, C., Comoutos, N., Galanis, E., & D. Flouris, A. (2018). 'Beat the heat: Effects of a motivational self-talk intervention on endurance performance', *Journal of Applied Sport Psychology*, 30(4), pp. 388-401.

Hodge, K., & Petlichkoff, L. (2000). 'Goal profiles in sport motivation: A cluster analysis', *Journal of Sport and Exercise Psychology*, 22, pp. 256-272.

Holmes, P., & Collins, D. (2001). 'The PETTLEP approach to motor imagery: A functional equivalence model for sport psychologists', *Journal of Applied Sport Psychology*, 13, pp. 60-83.

Ingle, S. (2018). Interview: Laura Muir: 'I would have a lot easier life if I didn't say stuff'.

<https://www.theguardian.com/sport/2018/jul/19/laura-muir-interview-scottish-runner-athletics>

Accessed on: 08/09/2020.

Keegan, R. (2019). 'Achievement goals in sport and physical activity' in Horn, T. S. & Smith A. L. (eds.) *Advances in sport and exercise psychology*. Champaign, IL: Human Kinetics, pp. 265-288.

Kingston, K. M., & Wilson, K. M. (2009). 'The application of goal setting in sport' in Mellalieu, S. D. & Hanton, S. (eds.) *Advances in applied sport psychology: A review*. London, UK: Routledge, pp. 75-123.

Lane, A. M., Totterdell, P., MacDonald, I., Devonport, T. J., Friesen, A. P., Beedie, C. J., Stanley, D., & Nevill, A. (2016). 'Brief online training enhances competitive performance: Findings of the BBC Lab UK psychological skills intervention study', *Frontiers in Psychology*, 7, p. 413.

Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York: Springer Publishing Company.

Lazarus, R. S. (2000). 'How emotions influence performance in competitive sports', *The Sport Psychologist*, 14(3), pp. 229-252.

Lobby Havey, M. (2020) Positive self talk: Inside the heads of America's top runners.
<https://www.active.com/running/articles/positive-self-talk-inside-the-heads-of-america-s-top-runners>
Accessed on: 08/09/2020.

Martin, K. A., Moritz, S. E., & Hall, C. R. (1999). 'Imagery use in sport: A literature review and applied model', *The Sport Psychologist*, 13, pp. 245-268.

McCormick, A., & Hatzigeorgiadis, A. (2019). 'Self-talk and endurance performance' in Meijen, C. (ed.) *Endurance performance in sport: Psychological theory and interventions*. Oxon, UK: Routledge. pp. 153-167.

McCormick, A., Meijen, C., & Marcora, S. (2015). 'Psychological determinants of whole-body endurance performance', *Sports Medicine*, 45(7), pp. 997-1015.

McCormick, A., Meijen, C., & Marcora, S. (2018). 'Effects of a motivational self-talk intervention for endurance athletes completing an ultramarathon', *The Sport Psychologist*, 32(1), pp. 42-50.

Meijen, C. (2019). *Endurance performance in sport: Psychological theory and interventions*. Oxon, UK: Routledge.

Morgan, W. P., & Pollock, M. L. (1977). 'Psychologic characterization of the elite distance runner', *Annals of the New York Academy of Sciences*, 301(1), pp. 382-403.

Moritz, S. E., Feltz, D. L., Fahrback, K. R., & Mack, D. E. (2000). 'The relation of self-efficacy measures to sport performance: A meta-analytic review', *Research Quarterly for Exercise and Sport*, 7, pp. 280-294.

Nicholls, J. G. (1984). 'Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance', *Psychological Review*, 91(3), pp. 328-346.

Nicolas, M., Martinent, G., Millet, G., Bagnoux, V., & Gaudino, M. (2019). 'Time courses of emotions experienced after a mountain ultra-marathon: Does emotional intelligence matter?', *Journal of Sports Sciences*, 37(16), pp. 1831-1839.

Phillips, J. (2018). Learning from the greats — Eliud Kipchoge.
<https://jhprunning.com/2018/05/18/learning-from-the-greats-eliud-kipchoge/> Accessed on:
08/09/2020.

Quotetab.com (2020). Haile Gebrselassie Quotes. <https://www.quotetab.com/quote/by-haile-gebrselassie/i-love-running-and-i-will-always-run> Accessed on: 08/09/2020.

Robazza, C., Pellizzari, M., Bertollo, M., & Hanin, Y. L. (2008). 'Functional impact of emotions on athletic performance: Comparing the IZOF model and the directional perception approach', *Journal of Sports Sciences*, 26(10), pp. 1033-1047.

Roberts, G. C. & Ommundsen, Y. (1996). 'Effect of goal orientations on achievement beliefs, cognitions, and strategies in team sport', *Scandinavian Journal of Medicine and Science in Sport*, 6, pp. 46-56.

Rubaltelli, E., Agnoli, S., & Leo, I. (2018). 'Emotional intelligence impact on half marathon finish times', *Personality and Individual Differences*, 128, pp. 107-112.

Ryan, R. M., & Deci, E. L. (2000). 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being', *American Psychologist*, 55, pp. 68-78.

Samson, A. (2014). 'Sources of self-efficacy during marathon training: A qualitative, longitudinal investigation', *The Sport Psychologist*, 28(2), pp. 164-175.

Samson, A., Simpson, D., Kamphoff, C., & Langlier, A. (2017). 'Think aloud: An examination of distance runners' thought processes', *International Journal of Sport and Exercise Psychology*, 15(2), pp. 176-189.

Schücker, L., Knopf, C., Strauss, B., & Hagemann, N. (2014). 'An internal focus of attention is not always as bad as its reputation: How specific aspects of internally focused attention do not hinder running efficiency', *Journal of Sport and Exercise Psychology*, 36(3), pp. 233-243.

Schweickle, M., Groves, S., Vella, S. & Swann, C. (2017). 'The effects of open vs. specific goals on flow and clutch states in a cognitive task', *Psychology of Sport and Exercise*, 33, pp. 45-54.

Stanley, D. M., Lane, A. M., Devonport, T. J., & Beedie, C. J. (2012). 'I run to feel better, so why am I thinking so negatively', *International Journal of Psychology and Behavioral Sciences*, 2(6), pp. 208-213.

Tenenbaum, G., Spence, R., & Christensen, S. (1999). 'The effect of goal difficulty and goal orientation on running performance in young female athletes', *Australian Journal of Psychology*, 51, pp. 6-11.

Timeoutdoors.com (2020). How to achieve your running goal. <https://www.timeoutdoors.com/expert-advice/running/training/how-to-achieve-your-running-goal> Accessed on: 08/09/2020.

Van Raalte, J. L., Morrey, R. B., Cornelius, A. E., & Brewer, B. W. (2015). 'Self-talk of marathon runners', *The Sport Psychologist*, 29(3), pp. 258-260.

Vealey, R. S., & Greenleaf, C. A. (2006). 'Seeing is believing: Understanding and using imagery in sports' in Williams, J. M. (ed.), *Applied sport psychology: Personal growth to peak performance*. Boston, MA: McGraw-Hill, pp. 306-348.

Wakefield, C., & Smith, D. (2012). 'Perfecting practice: Applying the PETTLEP model of motor imagery', *Journal of Sport Psychology in Action*, 3, pp. 1-11.

Winter, S., MacPherson, A., & Collins, D. (2014). 'To think, or not to think, that is the question', *Sport, Exercise, and Performance Psychology*, 32, pp. 102-115.

Weinberg, R. S. (2010) 'Making goals an effective primer for coaches', *Journal of Sport Psychology in Action*, 1, pp. 57-65.

Weinberg, R. S., Morrison, D., Loftin, M., Horn, T., Goodwin, E., Wright, E., & Block, C. (2019). 'Writing down goals: Does it actually improve performance?', *The Sport Psychologist*, 33, pp. 35-41.

Williams, S. E., Cooley, S. J., Newell, E., Weibull, F., & Cumming, J. (2013). 'Seeing the difference: Advice for developing effective imagery scripts for athletes', *Journal of Sport Psychology in Action*, 4, pp. 109-121.