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## POSITIVE THINKING

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Traditionally, sport psychologists have placed great value on athletes thinking positively about upcoming and imminent performances. Compared with practicing sport psychologists who have demonstrated a keen interest in positive thinking, theorists and researchers have not. As a result, a systematic and thorough knowledge base regarding what positive thinking is and why it is so sought does not currently exist. However, it would be reasonable to state that positive thinking is a broad term

encapsulating self-affirmations (e.g., I feel strong, I stay focused under pressure), images of successful goal attainment (e.g., winning an important competition), as well as thoughts reflecting optimism and an unshakable self-belief. Although positive thinking can include recollection of previous sporting successes, the essence of positive thinking is a focus on the present goals at hand (e.g., to successfully "sink" the immanent golf putt) and the likely attainment of these. Both personal (e.g., personality traits such as anxiety) and social (e.g., coach feedback about progress concerning the learning of a skill) factors can influence positive thinking. The current research and theories pertaining to positive thinking are discussed here.

As well as sport psychologists, coaches around the world clearly value positive thinking. For instance, we know that North American and Australian tennis coaches strongly encourage their players to think positively and say positive things to themselves in order to bolster their confidence levels. However, despite its perceived importance, it is only relatively recently that researchers have identified four types of sports-oriented positive thinking: psyching up, anxiety control, confidence enhancing, and instructional. Although instructions are not necessarily inherently positive, it is likely that the mere presence of directive thought assists with a positive mind-set by indicating to the athlete that she or he has some control over the situation. Researchers who have examined how athletes might utilize positive thinking have developed a self-talk questionnaire, the use of which has revealed beneficial relationships between athletes' positive thinking and their mood states (e.g., anxiety, vigor, tension, and boredom).

Perhaps unsurprisingly, positive thinking has been shown to be most strongly and positively related to state self-confidence. Indeed, studies involving athletes being trained in the use of positive thinking have revealed that athletes experience reduced precompetition anxiety and elevated levels of confidence, as well as more facilitative interpretations of the symptoms associated with anxiety. That is, athletes are more likely to view characteristics associated with anxiety (e.g., "butterflies in the stomach," concern with the task at hand) as being helpful rather than a hindrance for their subsequent performance.

Although the association between positive thinking and performance has not been extensively investigated, based on the limited available

literature, researchers have identified a consistent positive effect of positive statements addressed to oneself on sporting performance. One of the proposed reasons for this effect involves self-confidence; more specifically, positive thinking leads to enhanced confidence, which, in turn, assists skill execution and performance. Drawing on the sources of self-efficacy proposed by Albert Bandura offers some guidance about how to develop a positive frame of mind and increase sporting confidence. For instance, athletes can be trained to think more positively through the use of specific positive self-administered verbally persuasive cues (e.g., I can). Research has indicated that use of these cues by moderately skilled tennis players prior to task execution improves both their confidence and ability to execute ground strokes.

Although specific positive thoughts seem to be particularly beneficial for enhancing confidence (and performance), there are a number of more general positive thinking techniques worthy of mention, not least because they are frequently employed by sport psychologists when working with athletes. As well as monitoring one's mind-set (e.g., keeping a diary or log of mental aspects connected with training and competing), a number of methods for modifying thoughts have been proposed. These include thought stopping using physical or verbal triggers (e.g., saying stop), replacing negative statements with positive ones, or more thought restructuring-based approaches such as reframing, which emphasize positive aspects or perspectives within a seemingly unfavorable situations (e.g., an injured soccer player unable to practice enables her to realize how much she enjoys playing the sport and being part of the team).

Practitioners have been advised to assist athletes by challenging and countering irrational or distorted thinking and by helping develop affirmation statements or more extensive positive scripts. In essence, these methods aim to help athletes develop an optimistic and empowered explanatory style of events they experience; that is, athletes learn to avoid catastrophizing about errors or failure, view themselves as having more control over events, and are able to extract positive information from potentially negative experiences (e.g., a loss). It is notable that positive thinking seems to be particularly useful when athletes need to cope with adversity (e.g., injury, being under pressure). In this setting, positive thinking may help the performer make a more favorable appraisal

of the situation and/or his or her ability to cope with it. Thus, positive thinking may have both a direct and an indirect effect (via stress buffering) on performance. Caution needs to be used due to the relatively underresearched nature of many positive thinking techniques advocated in the sport psychology (SP) literature; although theoretically viable, the techniques and reasoning behind them have yet to be tested with athletes.

A final important consideration is that, to date, a “more is better” approach to positive thinking has been taken within the sport psychology literature; indeed, some research evidence supports this perspective. However, alternative perspectives exist that predict that problems arise with excessive positive thinking, reflecting unrealistic expectations and self-perceptions. Consequently, it is possible that one can have “too much of a good thing” and that there is a need to optimize the balance between positive and negative thoughts.

*James Hardy and Emily J. Oliver*

*See also* Cognitive Restructuring; Psychological Skills Training; Self-Efficacy; Self-Talk; Thought Stopping

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reflect positive (e.g., I can do this) or negative (e.g., don't screw it up) verbalizations. However, there is also an interpretative element associated with self-talk, which is idiosyncratic and potentially more important than the content of self-statements per se. For instance, while two exercisers might say the same phrase to themselves when fatigued (e.g., this is tough going), one may view the statement as an indication to give up, whereas the other might interpret it as a sign that the intensity she is working at is the appropriate level and to keep going. Self-talk is sometimes referred to in the research literature as private speech, verbal rehearsal, or inner dialogue.

Although encouraging athletes to use particular types of self-talk is commonplace within the sports setting, when compared with most other mental skills, self-talk remains relatively under-researched despite researchers' having adopted a more systematic approach to the study of self-talk over the past decade. Some early research examined the effects of training athletes in the use of self-talk as part of larger mental skills training that involved training in skills such as mental imagery, relaxation, and goal setting. Such studies provided evidence supporting the use of mental skills packages but did not allow researchers to identify the effect of each individual mental skill. However, more recent research has been focused on self-talk alone. Systematic reviews of the research on self-talk have confirmed that the skill can be effective at enhancing performance and that these benefits hold across various sports or tasks and skill levels. That said, there is a relative dearth of research on the effectiveness of training skilled performers in the use of self-talk; most studies have involved unskilled university students as participants. There is also little research on the effects of self-talk on performance in real competitive settings, as opposed to on laboratory-based tasks or in practice settings.

### Structures and Forms of Self-Talk

The structure of self-talk can range from single "cue" words (e.g., *head*), to specific phrases (e.g., *get there*), to full intact sentences; regardless, most self-talk is abbreviated in form. Also, abbreviated cue words or short phrases are usually taught in studies of self-talk training. It is suggested within the research literature that the content of self-talk interventions (i.e., programs of self-talk

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## SELF-TALK

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Self-talk refers to statements that athletes and exercisers address to themselves; these might represent automatic verbalizations or more deliberate forms of speech. Although such statements can be said aloud, most self-talk is said covertly as a silent voice in one's mind. The nature of self-talk can also

training) should be limited to a few, phonetically simple terms, logically associated with movement phases integral to successful task execution. When employing these recommendations, research has generated data to support these claims; for example, saying instructional self-talk words such as *split* and *turn*, representing the parting of the feet to create a firm base and turning of the shoulders to control the racquet head, enhances the accuracy of a tennis net volley. There is also a research base supporting the use of motivationally oriented self-talk with tasks more reliant upon strength and power (e.g., a defensive clearance in soccer) than precision. Even though most of this research has used the rather bland motivational phrase *I can*, there is consistent evidence that the use of this benefits performance. This suggests that the uses of self-talk extend beyond the use of movement-based cue words to organize and prompt the execution of technical movement patterns.

Recognizing that more instructional as opposed to motivational forms of self-talk might influence task execution differently depending on the characteristics of the task at hand, a matching hypothesis has been presented within the research literature on self-talk. It states that, because instructional self-talk helps athletes focus on task relevant cues, it should be more effective than motivational self-talk for tasks dependent on technique and precision. Conversely, motivational self-talk ought to be more effective than instructional self-talk for the execution of gross, strength-based tasks because it helps the performer achieve a more appropriate mind-set reflecting confidence and a positive mood state. While there is some evidence supporting this hypothesis, at present the available literature suggests that the consistency or robustness of the different beneficial effects is questionable. For example, most studies find benefits for both types of self-talk but with no clear difference between the "matched" and "unmatched" self-talk for the task type. For instance, instructional self-talk (e.g., straight and clean, referring to the backswing and contact of a golf putt) is not significantly more beneficial than motivational self-talk (e.g., you can do this) for aiding execution of an accuracy-based task (e.g., 6-foot golf putt).

The categorization of self-talk as either instructional or motivational in terms of the function of self-talk is a relatively new within the research on self-talk concerned with sport. A traditionally held view among sport psychologists, still currently

prevalent, is that positive self-talk is to be encouraged over negative self-talk. To this end, a number of mental techniques (e.g., thought stopping, cognitive restructuring) have been espoused within the applied literature. Given the apparent interest in this aspect of self-talk, the accompanying lack of experimental examination is notable. Nevertheless, the available research does support the belief that positive self-talk can lead to enhanced performance although the opposite is not necessarily true for negative self-talk.

One key area to consider, therefore, is that performers' interpretation of their self-talk may be of greater importance than its content. Early research exploring athletes' self-talk identified that some athletes reported negative self-talk to be motivating. While the motivating effects of negative thinking may be only realized by certain athletes under certain circumstances, these findings emphasize the importance of discussing how an athlete views and responds to self-talk as an integral part of working with him or her. For example, if an extremely resilient athlete uses negative and self-critical self-talk to increase his or her own effort or refocus attention following a lapse in performance, this may be an entirely functional use of self-talk and not something a sport psychologist would necessarily want to change.

Recent theory-based studies of self-talk have examined its interpretation in greater depth. Research drawing from Edward Deci and Richard Ryan's self-determination theory (SDT) has suggested that whether self-talk is interpreted as self-pressurizing or self-supportive may be an important determinant of subsequent motivation, emotion, and behavior. Specifically, self-talk that emphasizes the perspective of the athlete, provides the athlete with information and feedback about his or her competence, and fosters a sense of empowerment is likely to result in more positive forms of motivation, positive emotions, and ongoing task engagement and application of effort. Conversely, self-talk that is pressurizing, critical, and undermines personal empowerment is likely to result in a lack of task engagement and more negative emotional effects. Thus, a positively phrased self-instruction (e.g., keep your head still) perceived by the individual as controlling and pressurizing may in fact have negative consequences. Equally, a stern self-administered "talking to" may emphasize that the athlete has the ability to alter his or her situation, with adaptive consequences.

This aforementioned work goes some way toward helping address the general limitation associated with research on self-talk—namely, a lack of theory-based research and the absence of an actual theory of self-talk to date. In an effort to systematically make sense of the existing data, frameworks summarizing the effects of self-talk are currently being developed and refined. A sport-specific model, suggested by James Hardy and his colleagues, centers around the relationship of self-talk to performance, with theoretically grounded causes of self-talk and potential mechanisms helping to explain the performance effect identified. Specifically, the model emphasizes that both individual difference factors and situational variables can influence athletes' use of self-talk. Individual difference factors may include the athletes' preferences for processing information, their belief in the efficacy of self-talk, and also more global personality characteristics such as optimism, trait anxiety (TA), and neuroticism, for example. Situational variables include task difficulty, game circumstances (e.g., having lost an important point in a tennis game), and the influence of significant others (e.g., coaches). There is some evidence to suggest that athletes model their self-talk from coaches' comments and feedback, consistent with social learning-based models of behavior.

### Pathways to Influencing Performance

In terms of the mechanisms explaining how self-talk might influence performance, four main pathways are highlighted: cognitive, motivational, behavioral, and affective. Although conceptualized as separate pathways, it is likely that the underpinning explanations actually work in combination. First, the category of cognitive mechanisms refers to processes such as information processing, concentration, attention control, and attentional foci. Athletes report using self-talk to aid concentration and to direct and redirect attention to selective and important aspects of the skills being executed. Specific cue words have been implicated in the deliberate changing from one attentional focus to another (e.g., prior to the start of a race a sprinter pulling her attention away from the cheering crowd and on to the immediate task at hand—driving as quickly as possible out the blocks after the gun blasts). There is also some evidence that self-talk can reduce the occurrence of more internally oriented distractions such as interfering

thoughts (e.g., task-irrelevant thoughts, such as What am I going to have for dinner?) while performing sport skills.

In terms of motivational mechanisms, self-talk may improve performance by triggering enhanced effort and/or greater long-term persistence. For example, self-talk may act as a form of verbal persuasion, improving an athlete's self-confidence, which in turn causes them to invest greater effort, for longer. However, to date, controlled experiments have found equivocal support for the role of confidence in the self-talk to performance relationship. Nonetheless, the use of specific motivational self-talk phrases (e.g., I can) has resulted in increases in athletes' confidence levels. Alternatively, motivation and, in turn, performance might be influenced by the interpretation of self-talk such that self-talk viewed as reinforcing ability and choice ought to be beneficial and phrases which are self-critical, increasing pressure will likely have detrimental effects.

Behavioral or biomechanical mechanisms underlying the effect of self-talk on performance have perhaps greater evidential support. Changes in athletes' form and movement patterns have been shown to result from the use of either cue words (e.g., "knee" referring to keeping one's knee over the ball when executing a low driven shot in soccer) or longer instructional phrases. Typically, these types of self-talk focus on segmented parts of a movement or action (e.g., phases of a tennis forehand or golf swing); however, some movement changes have been noted following the use of more generic instructional commands—for example, the use of the phrase *drive up* as an attempt is made at a vertical jump.

Last, self-talk may influence performance through a variety of mechanisms concerning the regulation of affective states (e.g., positive and negative moods) and arousal (e.g., being "psyched up"). Different patterns of self-talk are associated with a number of different mood states including depression, anger, anxiety, and so on, and counseling techniques often emphasize changing the nature of self-directed statements as a way of enhancing mood state. Although athletes frequently report using self-talk as a psyching-up strategy to increase levels of arousal, the effectiveness of self-talk for this function has not been experimentally determined. There is, however, some evidence linking the use of self-talk (e.g., cue word *calmly*) to the effective control of anxiety levels.

### Conclusion

Although the development of the literature regarding self-talk has greatly advanced in the past decade, there remain many unanswered problems regarding how best to use self-talk, the way in which self-talk enables athletes to maximize performance, and, crucially, exactly why this might be. Contemporary models associated with self-talk have begun to provide some guidance regarding these questions; however, the role of key moderators, such as the athlete's skill level and the type of task being completed, has yet to be fully examined.

*James Hardy and Emily J. Oliver*

*See also* Cognitive Restructuring; Positive Thinking; Thought Stopping

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## THOUGHT STOPPING

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Thought stopping has its origins in the late 1950s and is a class of cognitive techniques (involving mental or behavioral aspects) commonly employed by sport psychologists to eliminate athletes' recurring negative, self-defeating, or anxiety-related thoughts. Consequently, an underpinning foundation of thought-stopping techniques is the assumption that such thoughts are detrimental to task performance, to well-being, or to both. While there is an abundance of evidence supporting this perspective within the clinical psychology literature, there are some emerging and credible alternative viewpoints within the sport psychology literature. For example, although there has been support for the theorized negative associations between negative thoughts and performance as well as between negative thinking and confidence, there is evidence within the sports-oriented self-talk research that negative thinking might have a beneficial motivating effect. However, caution is required when interpreting the potential benefit of negative self-statements; the motivating effects of negative thinking may be realized only by certain athletes under certain circumstances, depending upon their view of the content of the negative thinking. For instance, immediately following a basic mistake within a practice session, a competent athlete might self-scold, which is interpreted as being motivational.

Nevertheless, few practitioners would proactively encourage the use of negative thinking. On the contrary, negative thinking would be discouraged and some practitioners would advocate the use of traditional thought-stopping techniques to achieve this. Thought stopping represents the use of a mental or behavioral cue to prevent the occurrence of, or cease, recurring negative thoughts. Mental cues might involve the use of self-directed verbal cues ("Stop!") or the creation of mental images like a stop sign or a red traffic light immediately upon recognition of a negative thought. Alternatively, behavioral cues such as a slapping of one's thigh or pinching oneself can be utilized, with some sport psychologists reporting best results

when using mental and physical cues in combination. Anecdotal reports also suggest that thought stopping is more effective when the problematic symptom is largely cognitive in nature rather than accompanied or driven by unwanted behaviors, such as an extreme negative thought accompanied by disengagement from the task at hand.

It is believed that thought-stopping techniques are effective because the cue is distracting and can represent a punishment-oriented command; as such, frequently exhibited negative thoughts are consistently punished and reduced. An additional view is that thought-stopping cues are assertive responses that can be followed up with the use of additional mental techniques offering reassurance. In fact, some psychologists report greatest effectiveness of thought stopping when it is accompanied by the redirection of the performer's thoughts to emphasize positives within a seemingly poor situation or to refocus attention back on the task at hand.

Typically, thought stopping is employed to tackle a single persistent thought (e.g., "I'll never get this right"). Deliberately practicing thought stopping over a number of days has been suggested to increase its effectiveness. The process of introducing thought stopping can involve the athlete recalling a personal experience of a common situation where the habitual thought appears with the psychologist shouting "Stop!" upon the presence of this thought. When this brings about the desired effect of disrupting the targeted thought, the client shouts "Stop!" when experiencing the negative thought (instead of the practitioner). Following successful thought stopping because of the client's shouted "Stop!" the client practices reducing the cue from normal talking volume to whispering, with the goal that, eventually, the cue can be used covertly.

Despite reports of successful use in the sporting environment, there are various theoretical complications with the use of thought stopping. For example, the theory of ironic effects developed by Daniel Wegner argues that attempting to influence thoughts and mental control involves the balance between two opposing processes; the effortful intentional operating process and the unconscious monitoring process. Whereas the operating process tries to create the desired state of mind, the monitoring process continuously searches for inconsistency and failure of mental control. When situational conditions reduce available mental



capacity (as when we are under stress), the monitoring process overwhelms the intentional operating process and ironically produces the unwanted effect. These unwanted effects have been shown in word recall tasks, those involving movement errors, and, crucially, for thought suppression. Thus, the very act of an athlete trying to stop or not to think a certain thought may increase the likelihood of the thought occurring. Of further concern, this problem is likely to be exacerbated in athletes who have dispositional issues with anxiety. Mental techniques that involve rationalization of intrusive thoughts rather than suppression may be a realistic alternative.

As well as cognitive restructuring, there is a relatively newer and less well known form of thought stopping termed the *eye movement technique*, which is believed to interrupt negative thoughts by sequentially activating the two sides of the brain. This method requires the client to rapidly move the eyes back and forth between two reference points, for example, two corners of a room or window or hands placed on knees when seated, approximately 25 times. In doing so, it's theorized that clients stop focusing on the stressful event or negative thought. Repeated use of the technique may be needed if the unwanted thought is still experienced after the first application of rapid eye movements. However, the eye movement technique seems to be most effective when the recurring thought is only moderately stress inducing.

*James Hardy and Emily J. Oliver*

*See also* Cognitive Restructuring; Positive Thinking; Self-Talk

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