

Awareness and Motivation to Change Negative Self-Talk

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This study examined the effectiveness of a logbook and paperclip technique on awareness of the use *and* content of negative self-talk as well as the motivation to change negative self-talk. Participants ($n = 73$) completed a questionnaire measuring these variables, and were assigned to either a control, paperclip or logbook group. Participants performed three typical training sessions over a three-week period. The logbook group completed a self-talk logbook after each session whereas the paperclip group carried out a paperclip exercise during each session. Upon completion of the training sessions, the questionnaire was readministered. ANCOVAs revealed no significant differences between the groups for motivation to change and awareness of the content of negative self-talk. However, the logbook group had significantly greater awareness of their use of negative self-talk compared with the control group. A qualitative analysis of the logbook group's use of negative self-talk provided insights into the situations that prompted negative self-talk, the content of the self-talk, and also the consequences of using negative self-talk. Collectively, the findings offer some support for the use of the logbook technique in the applied setting.

Self-talk is a much promoted mental skill (e.g., Weinberg, Grove, & Jackson, 1992) and is concerned with the statements that athletes say to themselves. Self-talk has been noted as a multidimensional construct (e.g., Hardy, 2006) incorporating factors such as overtness (whether self-talk is said out loud, or inside the athletes' head), the function self-talk serves (e.g., instructional or motivational), and the valence of self-talk (whether the self-talk is positive or negative). Of relevance to the present investigation was the valence dimension of self-talk.

There are numerous instances within the applied sport psychology literature where researchers interested in enhancing performance have been successful via the inclusion of positive self-talk within a mental skills package intervention (e.g., Rogerson & Hrycaiko, 2002; Thelwell & Greenlees, 2003). To investigate the relationships between (positive and negative) self-talk and sport performance more closely, researchers have employed a range of methodologies. Using an observation technique, Van Raalte, Cornelius, Brewer, and Hatten (1994) reported that although positive self-talk was not associated with competitive junior tennis performance;

negative self-talk was inversely correlated with performance. In explaining the null finding for positive self-talk, the investigators suggested that positive self-talk was less likely to be said out loud, and as such, was not measured with optimal accuracy. Rushall, Hall, Roux, Sasseville, and Rushall (1988) employed an ecologically valid single-subject experimental design when examining the effect of self-talk (and specifically, positive self-talk, mood words, and task relevant statements) as compared with a normal thinking control condition, on the endurance performance of elite cross country skiers. Practically meaningful but small (3% improvement) effects were reported in conjunction with positive self-talk.

Utilizing a laboratory based randomized experimental study design, Van Raalte, Brewer, Lewis, Linder, Wildman, and Kozimor (1995) reported similarly consistent findings between (positive and negative) self-talk and novice dart throwing performance; positive self-talk led to enhanced performance whereas negative self-talk had a detrimental effect on performance. More recently Hamilton, Scott, and MacDougall (2007) obtained similar findings to the aforementioned studies using a single-subject multiple baseline design. In particular, participants who employed positive self-talk consistently improved their cycling time trial performance by approximately 28%, markedly more than their negative self-talk counterparts (~12%). Taken in concert, the above studies present a snap-shot of self-talk research that suggests that positive self-talk should be promoted by consultants while at the very least, the presence of negative self-talk should be reduced.

Applied sport psychology literature (e.g., Zinsser, Bunker, & Williams, 2006) has forwarded a variety of methods to aid consultants in decreasing the amount of negative self-talk used by their athletes. Such methods include reverse listing and thought stopping. Reverse listing involves the generation of reversed or positive counter statements used to replace commonplace negative self-statements, whereas thought stopping utilizes a cue word (e.g., saying "stop" out loud) employed in immediate response to undesired thoughts. However, in order for the athlete to gain control over his/her self-talk and to use these techniques effectively, he/she must first be able recognize and be aware of the occurrence of any unwanted thoughts (Zinsser et al.). To this end, Zinsser et al. presented four different methods to achieve this goal; retrospection, imagery, logbook, and a paperclips activity. Unfortunately, due to their reliance on retrospective recollection, the first two approaches are susceptible to recall bias/distortion (cf. Brewer, Van Raalte, Linder, & Van Raalte, 1991). As a result, the present investigation focused on the effectiveness of the logbook and paperclip exercise techniques to develop awareness of negative self-talk ("the first step in gaining control of self-talk" Zinsser et al., p. 361). In fact, it has been suggested that "keeping a daily diary or self-talk log of thoughts and performance situations is an excellent tool for accurately creating awareness of self-talk" (Zinsser et al., p. 362).

From an applied perspective four issues are worthwhile noting at this juncture. The first is that it might be beneficial to distinguish between two types of awareness; awareness of the *use* of negative self-talk and a more detailed aspect, awareness of the *content* of negative self-talk. Both hold relevance for the practitioner, as good awareness of both aspects is necessary for an effective intervention (e.g., thought stopping). The second issue is the importance of providing an evidence based service to clients. Consequently, given that we are not aware of a published study that

has investigated whether the aforementioned awareness enhancing techniques are effective, justification for such an investigation is evident. Third, in relation to this previous (best practice) point and in combination with the very limited empirical knowledge base concerning both techniques, it seemed prudent to examine the strategies' effectiveness in relation to the practice environment as opposed to the competition setting. In particular, the use of negative self-talk was targeted within independent training sessions (e.g., weight lifting, run alone) as compared with team practice sessions and competition, to minimize the risk of any adverse performance effects occurring. In addition, we would agree with Zinsser and colleagues' sentiment concerning the importance to monitor self-talk during practice, as the ability to recognize and control practice related self-talk probably plays an important role in developing typical competition thought and behavior patterns.

Finally, a number of behavior change theories (e.g., Self-Determination Theory; Deci & Ryan, 1985) highlight the critical role of one's motivation to change. Indeed, from a self-talk perspective, Zinsser et al. were very explicit when they stated that techniques such as "thought stopping will not work unless the athlete first recognizes undesirable thoughts and then is motivated to stop them" (p. 364). They also drew from the writing of Owens and Bunker (1989) to present some anecdotal evidence regarding the usefulness of the paperclip exercise to impact on motivation to change negative self-talk within the sport of golf. However, empirical consideration of this potentially powerful moderator is currently lacking.

Consequently, the purpose of the current study was to assess the effectiveness of a logbook and paperclip technique on awareness of the use *and* content of negative self-talk as well as the motivation to change negative self-talk. To this end, we examined three (logbook, paperclip, and control) groups on each of these three dependent variables. Specific a priori hypotheses were forwarded. As the logbook technique involved the detailed answering of questions regarding the type of self-talk employed, it was hypothesized that this treatment group would report the greatest awareness of the content of negative self-talk. However, as the paperclip exercise focuses exclusively on the frequency of negative statements, this treatment group was expected to report greatest awareness of the use of negative self-talk. Lastly, as the paperclip technique can provide a powerful indicator of the severity of the problem faced by the individual (Owens & Bunker, 1989), it was predicted that this group would also have the highest levels of motivation to change their use of negative self-talk.

Method

Participants

A sample of 73 kinesiology undergraduate students was recruited for the study ($M_{\text{age}} = 19.81$, $SD = 3.05$ years, $n = 44$ males, $n = 27$ females). Participation in the study was rewarded with partial course credit. All participants were physically active on a regular basis and the vast majority competed in team (e.g., soccer) or individual (e.g., track and field) sports at the university level. On average, participants undertook 2.12 ($SD = .70$) independent workouts (i.e., additional to team practice sessions) per week.

Measures

Negative Self-Talk Questionnaire.

As an existing measure of the awareness and motivation to change self-talk was not available, the Negative Self-Talk Questionnaire (NSQ; see Appendix) was developed for the current study. Feedback from experienced and qualified practitioners, and researchers with expertise in mental skills and measurement development assisted in the generation of items which possessed strong face validity and tapped three scales. The result was a 20 item questionnaire that assessed motivation to change negative self-talk (MOTIVATION), awareness of the use of negative self-talk (USE), and awareness of the content of negative self-talk (CONTENT). Each item was scored on a Likert-type scale from 1 (*strongly disagree*) through 5 (*neither agree nor disagree*) to 9 (*strongly agree*). Pilot study data ($n = 20$) indicated that the scales were correlated to each other in a manner that offered initial support for the questionnaire's validity. The bivariate correlations between the scales were as follows: USE and CONTENT, $r = .42, p < .07$; USE and MOTIVATION, $r = .15, p > .10$; CONTENT and MOTIVATION, $r = -.18, p > .10$. Results from a principle components analysis with promax rotation clearly identified the presence of three factors explaining a combined 57.4% of the total variance with eigenvalues of 6.13, 3.63, and 1.73, respectively. Inspection of the pattern matrix revealed that none of the items were ambiguous, in as much as item factor loadings were all in excess of .48 and did not cross-load (i.e., did not exceed .30) on an alternative factor. The first factor's items were representative of USE (e.g., I am conscious of my use of negative self-talk; $n = 8$), the second factor's items reflected MOTIVATION (e.g., I want to reduce the amount of negative self-talk I say; $n = 8$), and the third factor tapped CONTENT (e.g., If asked I could provide 3 examples of my negative self-talk; $n = 4$). Interfactor correlations were as follows; USE/CONTENT = .40, USE/MOTIVATION = .17, and CONTENT/MOTIVATION = -.04.

Procedure

Before group assignment, participants completed the NSQ in a quiet environment (e.g., class room) in small groups after having provided their informed consent to take part in the study. They were asked to refrain from conferring with others, and confidentiality of responses was assured. Regardless of group assignment participants completed training diaries and treatment specific protocol for 3 independent training sessions over a 3 week period. Participants provided information regarding the nature and length of their workout sessions. Popular activities included running (59%), weights sessions (20%), gym sessions (12%), and cycling (9%). On average, these training sessions lasted 1.22 hr ($SD = 0.90$). With regard to group allocation it was not possible to assign participants to groups in a completely random fashion. This was due to the nature of the paperclip protocol and obvious constraints of one or two of the training activities carried out (e.g., female swimmers lacking pockets would be unable to transfer paperclips during a workout), group assignment was conducted in the most random manner possible. Consequently, causal interpretation of the results should be carried out with caution.

Drawing from Zinsser et al. (2001), participants in the logbook group were given an extended training diary that asked them to record any negative self-state-

ments used. More specifically, these participants were asked to record the number of negative self-statements and provide as many examples as possible. Furthermore, they were asked to report in what situations during the training session negative self-talk was used, and any particular events that triggered the use of negative self-talk. Finally, they were asked about their perceived consequences of using negative self-talk as well as how they felt following the occurrence of negative self-talk.

In addition to the control group's version of the training diary, participants in the paperclip group were also given a bag containing 50 paperclips. During each training session, they were asked to move a paperclip from the right pocket to their left whenever they used a negative self-statement. On completion of the training session they were asked to note the number of negative self-statements made by counting the number of paperclips in their left pocket (cf. Zinsser et al., 2001).

On completion of the final session the experimenters collected all the training diaries, and participants completed the NSQ for a second time. They were then fully de-briefed as to the nature of the study, and thanked for their participation.

Results

Data Screening/Preliminary Analyses

Employing Tabachnick and Fidell's (2001) guidelines, data screening revealed each variable to be significantly skewed and kurtotic. Furthermore, ten outliers were identified. Removal of these outliers satisfied subsequent tests of skewness and kurtosis on all but two variables: CONTENT pre intervention and MOTIVATION post intervention. Following reflection and square root transformation of these variables (see Tabachnick & Fidell, 2001), tests of skewness and kurtosis indicated that data distributions were within accepted limits. Finally, three participants failed to complete the NSQ post intervention, thus the following analyses were conducted on the data from 60 participants. Table 1 displays the descriptive statistics for the pre and post NSQ means, along with descriptive data with regards to the number of negative self-statements made by each intervention group.

Scale Reliability

Cronbach's alphas for each administration of the NSQ were as follows: MOTIVATION pre .78; MOTIVATION post .91; CONTENT pre .79; CONTENT post .86; USE pre .45; USE post .38. For both pre and post time points, removal of the same two USE items (see Appendix) improved reliability of the USE scale to .87 (pre) and .79 (post), respectively. These alphas were considered acceptable.

Main Analysis

To examine the effectiveness of the respective interventions on MOTIVATION, CONTENT and USE, single-factor ANCOVAs, using pre intervention scores as the covariate, were performed on each dependent variable. ANCOVAs were chosen to maximize the power of the *F* test (see Bonate, 2000; Tabachnick & Fidell, 2001) by statistically controlling for any preintervention group differences. This was particularly important given that we had been unable to assign participants to groups in a

Table 1 Means (SD) and Adjusted Means for Pre- and Post-Intervention NSQ Scores and Frequency of Negative ST Across Workouts

Group	Pre-Intervention			Post-Intervention (obtained)			Post-Intervention (adjusted)			Frequency of negative ST across workouts		
	Motivation	Use	Content	Motivation	Use	Content	Motivation	Use	Content	1	2	3
Paperclip (<i>n</i> = 23)	6.54 (1.25)	6.17 (1.22)	1.85 (.36)*	1.81 (.39)*	6.72 (.90)	7.05 (.97)	1.82 (.28)**	6.73 (.94)	7.00 (1.06)	7.00 (5.63)	8.92 (6.46)	9.83 (9.48)
Logbook (<i>n</i> = 17)	6.78 (1.23)	6.59 (1.36)	1.83 (.36)*	1.73 (.30)*	7.40 (.92)	6.90 (1.24)	1.75 (.28)**	7.33 (.95)	6.81 (1.06)	3.67 (3.27)	3.27 (2.63)	4.53 (6.02)
Control (<i>n</i> = 20)	6.46 (1.01)	5.92 (1.48)	1.97 (.41)*	1.86 (.30)*	6.08 (1.10)	6.14 (1.40)	1.85 (.28)**	6.14 (.95)	6.27 (1.07)	—	—	—

* refers to a variable that has been transformed using reflection and square root transformation, thus lower scores indicate greater levels of the particular variable.

** refers to an adjusted mean that is based on a transformed postintervention mean, lower scores indicate greater levels of motivation to change negative self-talk.

completely random fashion. Because specific a-priori hypotheses were forwarded, alpha levels were set at .05 for each analysis. The assumption of homogeneity of regression slopes was satisfied for each ANCOVA.

Motivation to Change Negative Self-Talk. The ANCOVA revealed that the covariate was significant, $F(1, 56) = 28.69, p < .001, \eta^2 = .34$. However, no significant difference between the groups emerged.

Awareness of the Use of Negative Self-Talk. The ANCOVA indicated a significant effect of the covariate, $F(1, 56) = 4.77, p < .03, \eta^2 = .08$. Furthermore, a significant difference between the groups was revealed, $F(2, 56) = 6.98, p < .01, \eta^2 = .20$. Bryant-Paulson follow up tests indicated that the logbook group had significantly greater awareness of USE than the control group. No other group differences emerged. Table 1 displays the adjusted means for each group.

Awareness of the Content of Negative Self-Talk. The final ANCOVA revealed that the covariate was significant, $F(1, 56) = 17.24, p < .001, \eta^2 = .24$, and also, a trend toward significance was detected between the groups, $F(2, 56) = 2.59, p < .08, \eta^2 = .09$. Despite the p -value for this analysis not reaching the conventional criteria of .05, a moderate effect size was evident from this analysis (cf. Cohen, 1988), thus a visual inspection of the adjusted means was performed. This inspection revealed the both intervention groups appeared to have greater awareness of CONTENT than the control group (see Table 1).

Subsidiary Analyses

Two subsidiary analyses were undertaken to provide a more in-depth examination of the self-talk interventions. The first analysis examined the impact of the paper clip intervention on the number of negative self-statements made. This analysis was conducted to assess two alternative possibilities: (a) if the mere act of recording the use of negative self-talk is an effective means of reducing it, then we might expect the number of statements to decrease across sessions¹; or (b) whether the self-reported use of negative self-talk increased across the workout sessions, indicative of an accompanying raised awareness. A single-factor repeated-measures ANOVA revealed a significant difference in the reported use of negative self-talk across these sessions, $F(2, 46) = 3.20, p = .05, \eta^2 = .12$. Tukey's follow up tests indicated that participants recorded using more negative self-talk in the third compared with the first training session ($p < .05$). Thus, some support for the second possibility was generated.

The second subsidiary analysis involved a qualitative examination of the self-talk related data reported by the logbook group. Due to the nature of the questions asked in the logbooks, the qualitative analysis focused on three main issues; the situations and triggers during training that prompted the use of negative self-talk, the content of negative self-talk during training sessions, and perceived consequences and feelings resulting from the use of negative self-talk. An inductive content analysis was subsequently conducted on the open ended logbook responses. To do this the procedures outlined by Côté, Salmela, Baria, and Russell (1993) were followed. The outcome of this analysis identified themes, based on internal homogeneity and external heterogeneity, which emerged from the data which were, then categorized into higher order themes. The content analysis involved discussion

of the data and coding by 3 raters until consensual agreement was achieved. This approach was employed as it has been suggested to allow more thoughtful and accurate conceptualization of subsequent themes/clusters than more nomothetic interjudge agreement methods (Hill, Thompson, & Williams, 1997). To help assure that the coding into themes was transparent and logical an independent rater successful (86% agreement rate) coded all raw data themes into the resultant emergent themes. Discussion concerning discrepant encoding resulted in one higher order theme being renamed to better reflect its content (i.e., Increased task application was renamed to Application of effort) and concluded in consensus regarding the additional raw data theme allocations.

The results from the qualitative analysis can be seen in Figures 1–3. With regard to the situations and triggers that prompted the use of negative self-talk (see Figure 1), 27 raw themes were extracted which were then categorized into seven higher order themes. As a result, participants reported that their negative self-talk was most commonly associated with the onset of physical discomfort (e.g., pain and tiredness), the presence of task related cues (e.g., increased task difficulty), negative performance cues (e.g., underperforming and unsuccessful task execu-

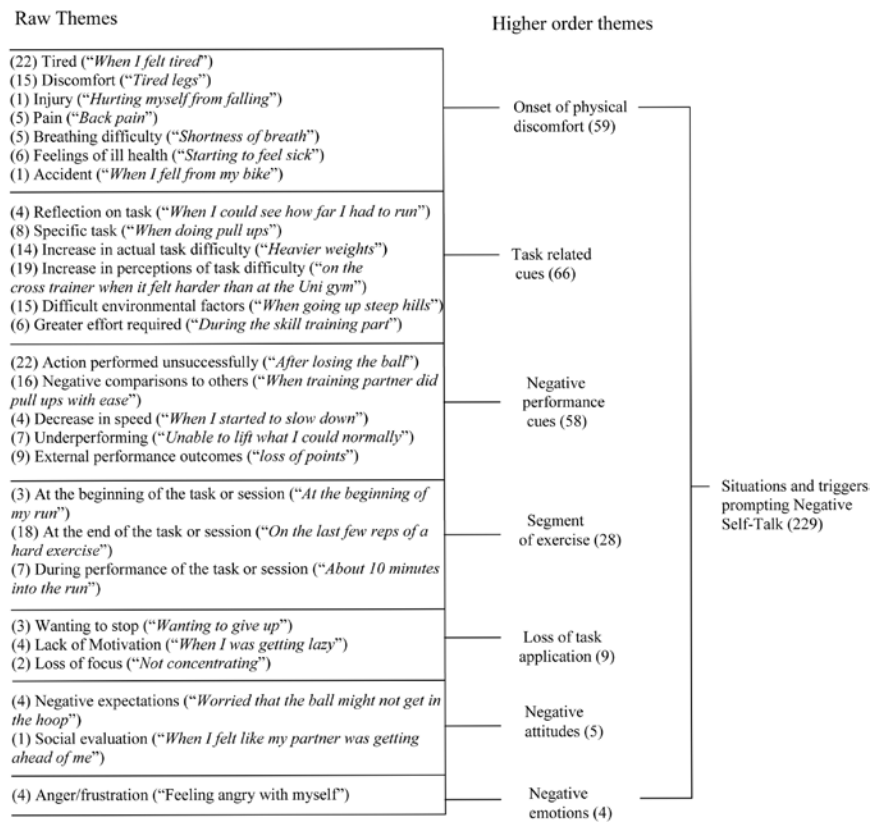


Figure 1 — Situations and triggers that prompted negative self-talk

tion), and within different segments of the workout, with greatest endorsement for its occurrence being toward the end of a session. Although to a lesser extent, negative self-talk was also prompted by a loss of task application (e.g., wanting to stop or a loss of focus), negative attitudes (e.g., poor self-expectations), and negative emotions (e.g., anger).

Data related to the content of the negative self-talk were organized into 19 themes which were subsequently arranged into seven higher order themes (see Figure 2). Primarily, the content of negative self-talk was representative of the task at hand and the engagement of the participants with this task. For example, analysis of the data revealed that much of it reflected a performance orientation (e.g., not meeting expectations and performance criticisms), a lack of ability (e.g., criticisms of ability), and a lack of task application (e.g., lack of motivation or effort) although bodily discomfort (e.g., reflecting pain and tiredness) was also a well represented higher order theme.

Finally, as far as the consequences and feelings following the use of negative self-talk were concerned a total of 40 data themes were extracted and then organized into 12 higher order themes (see Figure 3). These 12 higher order themes were clustered into 3 broader themes representing negative and positive consequences as well as, to a much lesser extent, neutral consequences (e.g., mixed emotions). A common trend that emerged from the higher order themes identified was that regardless of whether the consequences were negative or positive; affective, behavioral, cognitive, and motivational aspects were represented. For example, the negative consequences cluster was comprised of higher order themes such as; negative emo-

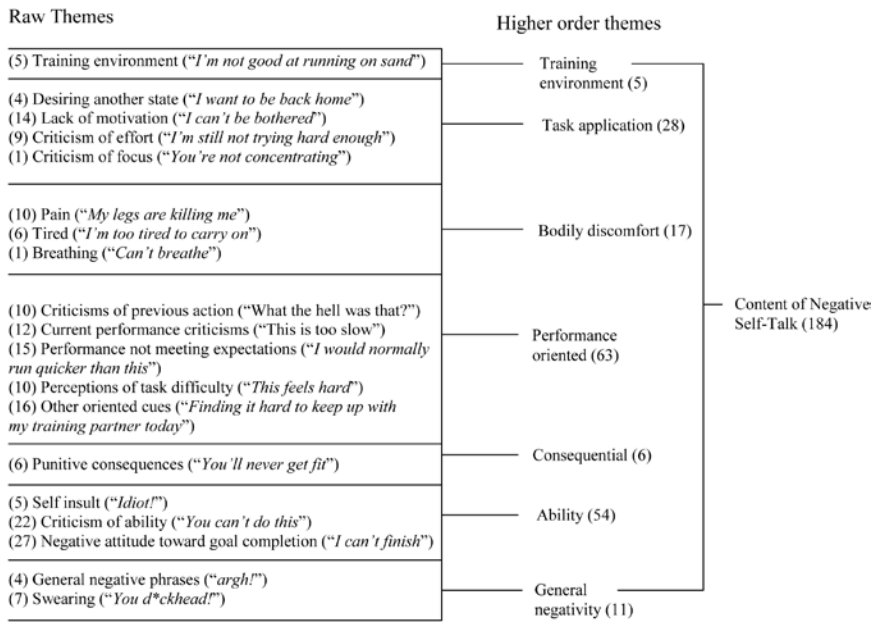


Figure 2 — The content of self-reported negative self-talk

tions (e.g., frustration and annoyance), reduced performance (e.g., decreased pace), decreased psychological control (e.g., loss of focus), and a reduction in motivation (e.g., less determined to continue). On the other hand, examples of positive consequences which emerged from the data included; positive affect (e.g., feeling more positive), application of effort (e.g., increased effort), the use of cognitive strategies (e.g., increased focus), and elevated motivation (e.g., motivated to continue).

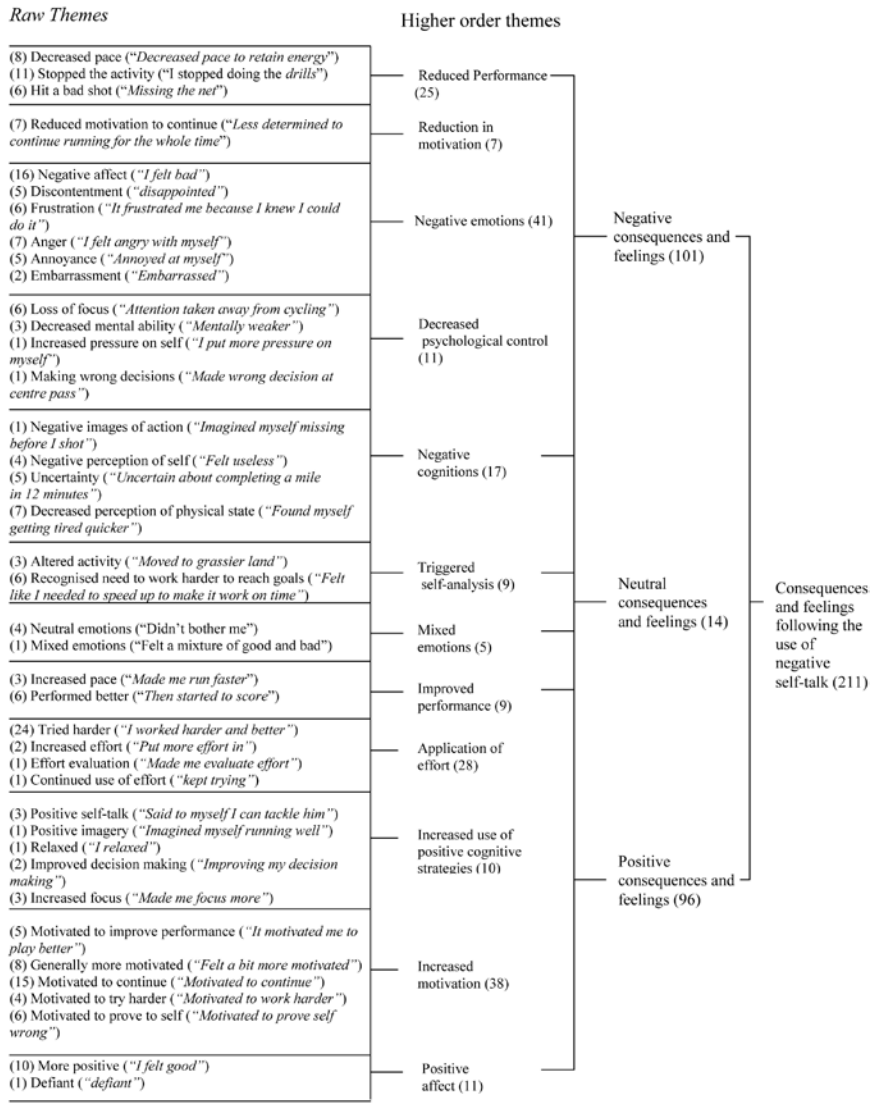


Figure 3 — Consequences and feelings following the use of negative self-talk

Discussion

The purpose of the present investigation was to assess the effectiveness of two intervention approaches (i.e., a logbook and paperclip exercise) which have been advanced within the self-talk literature (e.g., Zinsser et al., 2006) to enhance the awareness of self-talk. The specific focus of our study was negative self-talk and in particular, awareness of the *use* and *content* of negative self-talk as well as the motivation to alter the use of negative self-talk. Results offered initial partial support for the a priori hypotheses. Although neither intervention group differed from the control group for the motivation dependent variable, the logbook group reported significantly better awareness of their use of negative self-talk (i.e., how much was used), and tended to have greater awareness of their content of negative self-talk (i.e., what was used), in comparison with the control group. Consequently, the awareness oriented findings were somewhat consistent with our theorizing.

Taken together, these preliminary findings offer some promising evidence that may help guide consultants' practice. Although both interventions are relatively inexpensive, simple, and portable, when one considers the present findings collectively, it appears that the logbook technique might be of greater value than the paperclip approach. This stance can be justified by the findings that although both treatments groups produced equivalent awareness of the content of negative self-talk, the logbook group reported greater awareness than the control group concerning the use of negative self-talk. The logbook has the logistical advantage of also being less invasive and potentially disruptive than the paperclip technique. In addition, the logbook technique might encourage deeper self-reflection by the client regarding his/her use of negative self-talk as compared with the paperclip protocol. Dependent on the questions posed, this might also include such issues as the sources of his/her negative self-talk and situations that prompt it, for example. Nevertheless, it should be highlighted that the logbook approach employed in the current study can be improved; tailored to the individual and more fully incorporated into the sports environment. Indeed, it has been suggested that statements used by athletes should be recorded immediately after they occur (Zinsser et al., 2006). Self-paced sports such as golf, snooker, crown green bowling, and curling lend themselves to integrating logbooks more fully into practice sessions than relatively dynamic sports such as soccer, rugby, and hockey. However, it is possible that the two interventions examined could be employed in combination, whereby statements are recorded as they occur by way of a small, lightweight, and portable digital recorder (e.g., a MP3 player) placed on the participant but out of their way so as not to interfere with performance. Furthermore, as Van Raalte et al.'s (1994) observation based findings suggest that negative self-talk is commonly used overtly, it may be possible to obtain rich negative self-talk data by periodically videotaping (with sound) athletes during their practices and competitions. The method of audio recording self-talk has the advantage of also illustrating how the statements are said (e.g., overly aggressively) and so may hold greater meaning for the athlete.

A couple of issues are worth noting in relation to the null motivation to change findings. It may be that if the duration of the interventions had been extended, the greater exposure to the techniques might have enhanced their effectiveness to influence this dependent variable. That said the apparent effectiveness of the interventions to impact on awareness of negative self-talk (as indicated by the

moderate to large effect sizes) given the short time period is suggestive of their potency. In addition, given the relative lack of psychometric information concerning the measure used to assess motivation to change, we would recommend that the study's findings be interpreted with caution. Despite the lack of such information, when one considers the aforementioned promising awareness oriented findings, the present investigation lays an initial foundation for further research to clarify such potential limitations. From a theoretical perspective, consultants wishing to raise their clients' motivation to change their use of negative self-talk might consider employing motivational interviewing (Markland, Ryan, Tobin, & Rollnick, 2005). Sharing principles with self-determination theory, motivational interviewing is widely used within the exercise psychology domain to help establish more intrinsic forms of behavioral regulation and trigger long term behavior change. Consequently, it is a technique which may be of relevance to the motivation related issue at hand.

Another issue related to change in the use of negative self-talk emerged from the first (quantitative) subsidiary analysis. Results from this analysis did not confirm the perspective that merely recording the number of negative self-statements said during a workout (via the paperclip intervention) would, in turn, reduce the amount of negative self-talk employed. Instead, an increased usage of negative self-talk was detected. It is possible that such a finding might be reflective of a corresponding increase in the awareness of negative self-talk (i.e., increased awareness of a phenomenon allowing for more frequent reporting of the phenomenon). Nevertheless, given the NSQ nonsignificant finding concerning USE, there may at first glance seem to be a lack of support for this interpretation. However, more critical reflection highlights an issue of relevance concerning how these measures are arrived at. More specifically, USE involves a subjective and somewhat retrospective assessment whereas; the use of negative self-talk statements, as indicated by the corresponding number of paperclips, is more objective and does not rely on retrospection. As a result, it might be possible that the paperclip intervention enhanced athletes' sensitivity to recognize negative self-statements; helping to account for the reported increased use of negative self-talk. On the other hand, use of questionnaires (such as the NSQ) are likely to tap more global perceptions of awareness. To reduce priming effects the control group in the current investigation was not asked to indicate the number of negative self-statements for each workout. Consequently, a comparison between the paperclip and control group was not possible. Future research might like to examine the aforementioned issue in greater detail.

Although secondary to the purpose of the investigation the qualitative findings are worthy of further consideration. For example, the current antecedent oriented analysis supplements Hardy, Gammage, and Hall's (2001) findings concerning when and where athletes use self-talk. The present findings might help consultants, coaches, and players to better recognize triggers and situations when negative self-talk might occur. As such this information may assist in the accurate recognition of negative self-statements which forms an initial stage of a number of self-talk oriented intervention strategies (e.g., reverse listing).

With regard to the content of negative statements reported by participants, the present findings do not fit particularly well with Miller's (1997) conceptualization that negative self-talk/thought typically falls into one of six categories; catastrophizing, overgeneralizing, selective abstraction (i.e., attending to specific aspects that have little relevance to the larger picture), absolute thinking, crystal-ball gazing,

and mind reading. However, when compared with the relatively recent findings of Zourbanous, Hatzigeorgiadis, Chroni, Theodorakis, and Papaioannou (2009) there does appear to be some overlap and confirmation of the types of negative self-talk emerging. For example, Zourbanous et al. refer to swear words (which were subsequently eliminated from their item generation stage), worry and negative self-evaluation (“I’m going to lose”, “I am not going to reach my goal”), somatic fatigue (“I’m tired”, “my body doesn’t help me today”), and withdrawal/disengagement (“I want to stop”, “I can’t keep going”); all of which appear in the current findings. One possibility for the initial inconsistency might be because Miller drew from the mainstream psychology literature to propose his framework whereas Zourbanous et al.’s view is grounded in the sports domain.

Of relevance to our third qualitative analysis, within the current study participants endorsed the occurrence of a number of positive consequences following negative self-talk. This finding may at first glance seem to counter Zourbanous et al.’s correlations which identified significant associations between their aspects of negative thought content and trait anxiety as well as state confidence and affect (e.g., worry/confidence; $r = -.30$). However, it is important to point out that as many negative consequences were also highlighted by our participants. Consequently, it would seem that the self-reported consequences of negative self-talk might be idiosyncratic; dependent on the individual’s perspective. As the aforementioned consequences were not observed and are in essence merely perceptions, consultants are reminded to interpret the current (positive) consequences with caution. Interestingly, this is not the first self-talk finding which raises the importance of the apparent role of athletes’ perception or interpretation connected with their negative self-talk. In their examination of the self-talk/affect relationship, Hardy, Hall, and Alexander (2001) identified a cluster of athletes who reported using extremely negative self-talk immediately before competitions, yet found this form of self-talk to be extremely motivational for themselves. This finding does not appear to be too dissimilar to the present *increase motivation* higher order theme which was extracted from the current data.

A final applied point worth highlighting is with regard to the thought stopping technique to which the focus of the current study, awareness of negative self-talk, underpins. Application of the ironic effects literature (e.g., Woodman & Davis, 2008) offers guidance concerning the use of thought stopping within competitive settings. The theory of ironic effects (Wegner, 1994) assists our understanding of the effects of anxiety and predicts that when athletes experience anxiety, a change of cognitive control systems takes place which actually increases the likelihood of the occurrence of the very event (e.g., reducing the occurrence of a negative statement) he/she is trying to avoid. As a result, we would encourage consultants to use thought stopping with extreme caution. As an awareness of negative self-talk is also necessary for optimal effectiveness of alternative techniques such as reverse listing, the present investigation has generated some initial information that may assist consultants’ future use of self-talk based interventions.

A number of future research directions are apparent from the current study. First, a comprehensive psychometric analysis of the NSQ would provide more evidence of its suitability as a measure of awareness and motivation to change negative self-talk. Although the principle components analysis which was conducted provided some initial support for the instrument, it would seem prudent to

confirm the factor structure of the NSQ using confirmatory factor analysis (CFA). CFA has been advocated as a superior method to test the underlying factor structure of a questionnaire, as CFA uses a theory-driven approach (Biddle, Markland, Gilbourne, Chatzisarantis, & Sparkes, 2001). Thus, the use of CFA would seem to be an acceptable way to test the factor structure of the NSQ. Second, a longer intervention period would allow for clarity concerning whether either of the self-talk interventions might impact on motivation to change negative self-talk. As highlighted earlier, a longer intervention would lead to greater exposure to the techniques, which may increase the likelihood of the interventions impacting on MOTIVATION. Third, a consideration of individual differences may be a worthwhile avenue for future research. For example, individuals who lack self-awareness (i.e., are low in dispositional self-consciousness; Fenigstein, Scheier, & Buss, 1975) might be expected to be lacking in their awareness of the use and content of negative self-talk. Thus, the logbook intervention might be extremely useful for these individuals in terms of raising their awareness levels. In addition to this, an examination of whether individual differences moderate the effects of negative self-talk on particular consequences and emotions would also be worthwhile. For example, dispositional perfectionists are known to be overly self-critical and set unrealistically high standards (e.g., Flett & Hewitt, 2005). Thus the use of negative self-talk may be associated with more detrimental consequences for these individuals. Finally, given that there now appears to be initial empirical support (e.g., Hamilton et al., 2007) for the idea that negative self-talk may have some beneficial effects for certain athletes under certain conditions, more concerted effort to better understand this potential phenomenon from researchers is warranted.

Notes

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References

- Biddle, S.J.H., Markland, D., Gilbourne, D., Chatzisarantis, N.L.D., & Sparkes, A.C. (2001). Research methods in sport and exercise psychology: quantitative and qualitative issues. *Journal of Sports Sciences, 19*, 777–809.
- Brewer, B.W., Van Raalte, J.L., Linder, D.E., & Van Raalte, N.W. (1991). Peak performance and the perils of retrospective introspection. *Journal of Sport & Exercise Psychology, 8*, 227–238.
- Bonate, P.L. (2000). *Analysis of pretest-posttest designs*. Florida: Chapman & Hall/CRC.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New Jersey: Lawrence Erlbaum Associates.
- Côté, J., Salmela, J.H., Baria, A., & Russell, S.J. (1993). Organizing and interpreting unstructured qualitative data. *The Sport Psychologist, 7*, 127–137.

- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Press.
- Fenigstein, A., Scheier, M.F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology, 43*, 522–527.
- Flett, G.L., & Hewitt, P.L. (2005). The perils of perfectionism in sports and exercise. *Current Directions in Psychological Science, 14*, 14–18.
- Gammage, K.L., Hardy, J., & Hall, C.R. (2001). A description of self-talk in exercise. *Psychology of Sport and Exercise, 2*, 233–247.
- Hamilton, R.A., Scott, D., & MacDougall, M.P. (2007). Assessing the effectiveness of self-talk interventions on endurance performance. *Journal of Applied Sport Psychology, 19*, 226–239.
- Hardy, J. (2006). Speaking clearly: A critical review of the self-talk literature. *Psychology of Sport and Exercise, 7*, 81–97.
- Hardy, J., Gammage, K., & Hall, C.R. (2001). A descriptive study of athlete self-talk. *The Sport Psychologist, 15*, 306–318.
- Hardy, J., Hall, C.R., & Alexander, M.R. (2001). Exploring self-talk and affective states in sport. *Journal of Sports Sciences, 19*, 469–475.
- Hill, C.E., Thompson, B.J., & Williams, E.N. (1997). A guide to conducting consensual qualitative research. *The Counseling Psychologist, 25*, 517–572.
- Markland, D., Ryan, R.M., Tobin, V.J., & Rollnick, S. (2005). Motivational Interviewing and Self-determination Theory. *Journal of Social and Clinical Psychology, 24*, 811–831.
- Miller, B. (1997) *Gold Minds: The psychology of winning in sport*. UK: Crowood press.
- Owens, D., & Bunker, L.K. (1989). *Golf: Steps to success*. Champaign, IL: Human Kinetics.
- Rogerson, L.J., & Hrycaiko, D.W. (2002). Enhancing competitive performance of ice hockey goaltenders using centering and self-talk. *Journal of Applied Sport Psychology, 14*, 14–26.
- Rushall, B.S., Hall, M., Roux, L., Sasseville, J., & Rushall, A.C. (1988). Effects of three types of thought content instructions on skiing performance. *The Sport Psychologist, 2*, 283–297.
- Tabachnick, B.G., & Fidell, L.S. (2001). *Using multivariate statistics*. Boston: Allyn and Bacon.
- Thelwell, R.C., & Greenlees, I.A. (2003). Developing competitive endurance performance using mental skills. *The Sport Psychologist, 17*, 318–337.
- Van Raalte, J.L., Cornelius, A.E., Brewer, B.W., & Hatten, S.J. (1994). The antecedents and consequences of self-talk in competitive tennis. *Journal of Sport & Exercise Psychology, 22*, 345–356.
- Van Raalte, J.L., Brewer, B.W., Lewis, B.P., Linder, D.E., Wildman, G., & Kozimor, J. (1995). Cork! The effects of positive and negative self-talk on dart throwing performance. *Journal of Sport Behavior, 18*, 50–57.
- Wegner, D.M. (1994). Ironic processes of mental control. *Psychological Review, 101*, 34–52.
- Weinberg, R., Grove, R., & Jackson, A. (1992). Strategies for building self-efficacy in tennis players: A comparative analysis of Australian and American coaches. *The Sport Psychologist, 6*, 3–13.
- Woodman, T., & Davis, P. (2008). The Role of Repression in the Incidence of Ironic Errors. *The Sport Psychologist, 22*, 183–196.
- Zinsser, N., Bunker, L., & Williams, J. (2006). Cognitive techniques for building confidence and enhancing performance. In J.M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (5th ed., pp. 349–381). New York: McGraw Hill.
- Zourbanous, N., Hatzigeorgiadis, A., Chroni, S., Theodorakis, Y., & Papaioannou, A. (2009). Automatic Self-Talk Questionnaire for Sports (ASTQS): Development and Preliminary Validation of a Measure Identifying the Structure of Athletes' Self-talk. *The Sport Psychologist, 23*, 233–251.

Appendix

Below are the items of the Negative Self-Talk Questionnaire employed in the current study.

Motivation to change negative self-talk

- I am motivated to reduce the amount of negative self-talk
- I want to reduce the amount of negative self-talk I say
- I do not want to modify my negative self-talk (R)
- I feel like changing my use of negative self-talk
- I have no desire to alter my use of negative self-talk (R)
- I am willing to substitute negative for positive self-statements
- I am determined to change my use of negative self-talk
- I am eager to replace my negative self-statements with positive self-statements

Awareness of the use of negative self-talk

- I am mindful of my use of negative self-talk
- I am conscious of my use of negative self-talk
- I have no idea about my use of negative self-talk (R)*
- I am alert to my use of negative self-talk
- I am aware that I use negative self-talk
- I am familiar with my use of negative self-talk
- I am unaware of my use of negative self-talk (R)*
- I pay attention to my use of negative self-talk

Awareness of the content of negative self-talk

- If asked I could provide 3 examples of my negative self-talk
- I know what the nature of the types of negative things I say to myself
- I know exactly what negative phrases I use
- I am aware of the content of the negative statements I say to myself

(R) denotes an item that is reverse scored

* denotes items that were removed following reliability analysis