



August, 2002
Volume 4, Issue 2

Dysphoria, Linking, And Pre-Competitive Anxiety In Triathletes

Grant Schofield, Geoff Dickson, Kerry Mummery
Central Queensland University, Australia
and
Helen Street
The University of Western Australia, Australia

ABSTRACT

Some individuals set abstract, higher-order goals (e.g., happiness) conditionally upon the achievement of specific lower-order goals (e.g., completing an ultra-distance triathlon, finishing a university degree). This process is known as linking or Conditional Goal Setting (Street, 2000). This unhealthy style of goal setting has been directly related to increases in everyday depressive symptoms (dysphoria). Although the relationship between anxiety and depression is well established (Zimmerman, McDermut & Mattia, 2000) little is known about the interaction between linking, anxiety, and depression. The primary aim of this study is to investigate the relationship between general linking, everyday depressive symptoms, and state anxiety in a group of ultra-endurance athletes (N=223) competing in the 2001 Ironman New Zealand triathlon. Regression analyses show that linking is related to increased anxiety and depressive symptoms. The results suggest that the relationship between linking and depression is also mediated by somatic anxiety.

Introduction

The present study seeks to understand how a particular style of goal pursuit called linking is related to everyday depressive symptoms and pre-competitive anxiety in triathletes. This study takes a fresh look at goal theory in athletic populations. In recent times, much of the goal setting research in sport and exercise psychology has been conducted in the area of "motivation orientation" (Duda, 1992, Nicholls, 1984). This research has yielded little information about psychological well-being and methods of

goal setting. However, recent research in clinical psychology has revealed a strong relationship between psychological well-being and a particular type of goal setting called linking (McIntosh, 1996) or Conditional Goal Setting (CGS) (Street, 2000). The theory of linking offers a new explanation for the relationship between goals and depression. Linking theory proposes that certain individuals are vulnerable to depression because they utilise inappropriate strategies to set and pursue life goals (e.g., Winning a sporting contest). These individuals believe that achievement of goals are necessary prerequisites of the "abstract goals" of happiness and well-being. Linkers are vulnerable to depression because they believe: that happiness and wellbeing are achievable higher order goals. They also believe that happiness goals can only be achieved through the achievement of specific lower order goals. For example, a linker may believe that they can only attain "the goal" of happiness if they achieve the goal "to win a gold medal in a swimming competition".

If successful completion of an abstract goal (e.g., to be successful) is dependent upon successful completion of a single concrete goal (e.g., to get a high grade in my exams), a great deal of importance will be placed on that specific concrete goal. Consequently, failure to achieve the concrete goal may result in a level of distress that appears to be disproportionate to the loss experienced. Linkers conceptualise happiness and wellbeing as abstract goals. Furthermore, these individuals tend to make their happiness and personal well being conditional upon achievement of life goals. Linking results in undue importance and pressure being put on the processes of goal pursuit and achievement.

Linking tends to be described as a general personality trait whereas CGS is seen as pertaining to specific goals (Street, 2000). As opposed to the general trait of linking, CGS suggests that individuals may engage in the CGS process in respect to some important goals but not in relation to others. For example, an athlete may value family and friends but not hold them responsible for their happiness. However, they may believe that they cannot be happy unless they achieve a specific sporting goal. In this example, the athlete has conditionally set a goal concerned with their chosen sport. During the process of goal pursuit (i.e., training and preparation) the athlete will only be able to think of progress towards their goal in terms of not yet being happy. This negative self-focus in relation to goal pursuit is akin to rumination. Continued rumination has been found to contribute to increases in depression (Street, 1999). In essence, the linking individual can be said to have "put their happiness on hold" during the process of goal pursuit.

The problem with the linking process is that if the individual does not achieve their goal they may experience disengagement problems due to the importance of the goal. If the individual does achieve their goal they may experience a brief period of elation but, will quickly habituate to success, and will then need to set a new goal to link to their happiness. Thus, whether or not an individual achieves a goal, they will spend most of their time ruminating and feeling depressed.

To this point, no research has investigated linking or CGS in relation to specific goal-oriented groups such as athletes. To this end, the present research investigates linking in the athletic performance-oriented environment of the Ironman triathlon. It is unclear from

linking theory whether rumination resulting from linking contributes to increased pre-competitive anxiety in the athlete. In addition the relationships between anxiety, linking, and depression are unclear and also warrant investigation. Certainly, anxiety has been strongly correlated with depression in a number of studies (e.g., Zimmerman et al, 2000). However, the influence of anxiety on the relationship between linking and depression has not so far been investigated. An investigation of these relationships is important in furthering knowledge and understanding of the psychological factors affecting athletes' well being and sporting performance.

The nature of the relationship between linking and anxiety is not known. It is hypothesised from linking theory that those who set conditional goals will be more likely to experience high levels of state anxiety just prior to a performance where a specific overvalued goal may be achieved or lost. It may be that anxiety mediates the relationship between linking and depression. Anxiety may be the harmful physiological manifestation of a negative self-focus about the possibilities of goal loss. In the sporting situation high levels of pre-competitive state anxiety are known to be debilitating to performance (see Hardy, 1999 for a review of the effects of anxiety on sport performance). Depressed mood has also been shown to affect sporting performance (Lane & Terry, 2000). If linking is related to anxiety and depressed mood in athletes then it may be an important factor in competition performance management.

The present research was conducted using participants competing in a particular ultra-endurance event, the 2001 Ironman New Zealand Ironman Triathlon. The Ironman triathlon consists of a 3.8 km swim, a 180 km individual cycle and a 42.2 km run. Apart from being a massive test of physical endurance, the event demands considerable mental toughness simply to complete the distance within the cut-off time of 17 hours after race start. On average Ironman triathletes will train 20 hours per week for three months leading up to the event (O'Toole, 1999). The typical Ironman triathlete appears focused in working towards the concrete goal of finishing this event. Athletes choosing to face the challenge of the Ironman triathlon often make considerable personal and financial sacrifices to achieve this specific goal (Gulbin & Gaffney, 1997). To this end, Ironman triathletes were seen as an ideal group in which to look at goal-setting styles, pre-competition anxiety, and psychological well-being and depression.

The aim of the present study was to investigate dysphoria as measured by everyday depressive symptoms as a function of linking and state anxiety prior to participation in a major athletic event. It was hypothesised that those more likely to set conditional goals would be less psychologically healthy (as measured through everyday depressive symptoms) than those less likely to set conditional goals. Furthermore, linkers would be more likely to experience higher levels of pre-competitive anxiety.

Method

Sample

Participants were athletes ($N = 223$) competing at the Ironman New Zealand Triathlon held in Taupo, New Zealand, March 2001. Participants were both male ($N = 180$) and female ($N = 43$) varying from 21 to 69 years of age ($M = 35.5$, $SD = 9.8$ years). Participants were drawn from a variety of nationalities. The most represented were New Zealand ($N = 68$), Australia ($N = 71$), and the United States ($N = 56$).

Measures and Procedure

Pre-event questionnaires were administered at the registration area on the day preceding the event. The questionnaire consisted of the psychological scales described below with demographics. McIntosh's inventory was chosen, as it was developed to explore McIntosh's original linking construct. The inventory consists of 22 items, thus scores range between 22 (high CGS) and 44 (low CGS). For the present sample the scale showed moderate reliability with an alpha coefficient of 0.66.

The Centre for Epidemiological Studies Depression Inventory (CES-D, Radloff, 1977) was used to measure depression. The CES-D was chosen as it was specifically designed for the measurement of depression within the general, English-speaking population and is applicable to this age group (Radloff, 1991). It allows for identification of a large range of depression levels within a normal population, rather than identification of only clinically depressed individuals. The CES-D consists of 20 items describing feelings (e.g., "I felt that I was just as good as other people"), thoughts (e.g., "I thought my life had been a failure) and behaviors (e.g., "My sleep was restless") which capture the symptoms of depression. For each item participants rated their feelings in the last week on a 4-point scale ranging from 1 (rarely or none of the time, less than one day) to 4 (most or all of the time, 5-7 days). For this sample the CES-D proved to be reliable with an alpha coefficient of 0.88.

State anxiety was assessed using the Competitive State Anxiety Inventory-2 (CSAI-2, Martens, Burton, Vealey, Bump, & Smith, 1990). This scale was designed to measure the feelings of apprehension and tension that athletes may experience prior to competition. The scale consists of 18 items and three subscales of Cognitive Anxiety, Somatic Anxiety and Self Confidence. Participants indicated how they felt prior to the triathlon using a 4-point scale ranging from 1 (not at all) to 4 (very much so). Examples of CSAI-2 items include, "I am concerned about choking under pressure" (cognitive anxiety), "my body feels tense" (somatic anxiety), and "I'm confident I can meet the challenge" (self confidence). Alpha coefficients for the three subscales in the present study were 0.70 (cognitive anxiety), 0.74, (somatic anxiety), and 0.70 (self confidence) indicating adequate internal consistency of the CSAI-2.

Results

Correlation analysis

A bivariate correlation matrix (see Table 1) was constructed to make comparisons between all of the measures used in this study. The main points of interest were significant correlations ($p < 0.01$) between linking and depression, depression and the CSAI-2 subscales (cognitive anxiety, somatic anxiety and self confidence). These subscales were also significantly correlated with linking.

Table 1

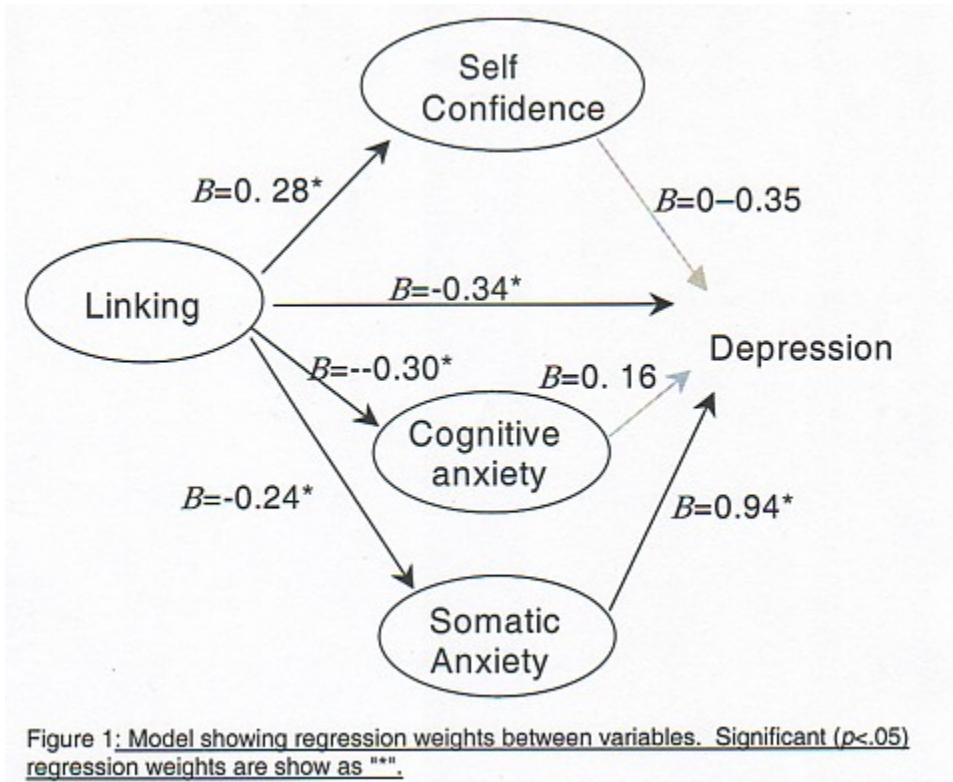
Correlation coefficient matrix

	Depression	Linking	Somatic anxiety	Cognitive anxiety	Self confidence
Depression	1.00	*0.31	*0.54	*0.46	*-0.45
Linking		1.00	*-0.27	*-0.33	*0.30
Somatic anxiety			1.00	*0.73	*-0.63
Cog. anxiety				1.00	*-0.77
Self confidence					1.00
<i>N</i>	209	199	216	214	218
<i>M</i>	29.6	37.8	10.8	12.2	19.0
Possible range	20-66	22-44	6-24	6-24	6-24
Actual range	20-66	26-44	6-22	6-20	9-24
<i>SD</i>	8.4	3.5	3.2	3.3	3.3

Regression analysis

On the bases of theory, hypotheses (see introduction), and the results of the bivariate correlations (Table 1) regression analysis was used to establish relationships between variables. The results of this analysis are shown as Figure 1. The first important feature is that linking has direct effects on all of the CSAI-2 subscales (cognitive anxiety, $\beta = -0.30$,

$p < 0.05$, somatic anxiety, $\beta = -0.24$, $p < 0.05$, and self confidence, $\beta = 0.28$, $p < 0.05$). From Figure 1 it can also be seen that linking has both a direct ($\beta = -0.34$, $p < 0.05$) and indirect effect on depression. The indirect effect is through the mediating variables of the CSAI-2 measure of somatic anxiety ($\beta = 0.94$, $p < 0.05$). Further, cognitive anxiety and self-confidence played no role in affecting depressive symptoms.



To summarize, those who are general linkers were more likely to experience higher somatic anxiety, higher cognitive anxiety, lower task confidence and more depressive symptoms than those who did not. There was also evidence of a mediating effect of somatic anxiety such that those who are general linkers were more likely to experience higher somatic anxiety and higher levels of depression. In addition, there was no evidence of any age, gender, or nationality differences in any of the variables measured.

Discussion

The first hypothesis that athletes who show the general trait of linking are more likely to show depressive symptoms was supported. The findings clarify the role of goal setting in the onset and maintenance of depression in athletes. The results suggest that athletes may overvalue some sporting goals because they are linked to personal well-being and happiness. If an individual's personal happiness and well-being become increasingly dependent upon the achievement of a single overvalued goal, achievement of this goal will be perceived to be increasingly important. Thus, during the process of goal pursuit, the individual may increasingly ruminate about the negative consequences of failure in terms of an absence of happiness and wellbeing.

It is understood that some athletes may not consider their sporting achievements to be personally meaningful in any way. However, the time and personal investment placed on training and competing for the Ironman triathlon suggests that the majority of athletes consider their sporting goals to be important at some level. It is suggested that an athlete who increasingly places personal investment in an important sporting goal may spend time thinking about the consequences of goal pursuit and goal achievement. If the athlete believes that happiness and wellbeing are conditional upon goal achievement, any thoughts of goal pursuit will be accompanied by a belief that the individual is not yet happy or content. This negative self-focus can be described as rumination. Individual conditional goal setters will therefore ruminate about the prospect of not having achieved important sporting goals. An increase in rumination is in turn likely to cause an increase in depression levels. Thus, an athlete who makes their well-being and personal happiness conditional upon goal attainment becomes increasingly vulnerable to dysphoria and depression.

The second hypothesis that athletes who display the general trait of linking will also experience higher levels of pre-competitive anxiety was also supported. Linking theory proposes that a misconception of happiness being dependent upon sporting achievement would place extreme pre-performance pressure on an athlete. This pressure would be exhibited in increased anxiety levels. All three sub-scales of the CSAI-2 showed significant correlations with linking.

It is interesting to see the relationship between the CSAI-2 anxiety subscales and depression. Although the correlation analysis showed significant correlations between all sub-scales and depression the regression analysis showed somatic anxiety as the only significant predictor of depression. This is a little puzzling, as we might have expected cognitive anxiety to also be a good predictor of depression if rumination about possible goal loss is an underlying cause of anxiety. Perhaps one explanation of our failure to observe this is the use of the CSAI-2 as the measurement instrument. Recent research by Lane, Sewell, Terry, Bartram and Nesti (1999) has shown the CSAI-2 factor structure to somewhat flawed with regard to factor loading in the cognitive anxiety subscale. Future research in this area needs to resolve these issues and an appropriate scale developed.

These present results are significant in that they suggest that depression occurs as a result of both increases in pre-performance somatic anxiety and a need to perform well in order to achieve happiness (linking). Thus, it is proposed that intervention aimed at decreasing anxiety levels and encouraging fewer conditions of happiness to be attached to performance outcome could significantly improve athletes' wellbeing.

Linking increases both pre-competitive anxiety and depression. The literature shows athletes with lower state anxiety and less depressed mood are more likely to perform better than their more anxious and depressed counterparts (Hardy, 1999, Lane & Terry, 2000). Therefore reducing the tendency to set conditional goals and seeing "success as a journey rather than a destination" should be an important consideration in performance management and goal setting in athletic counseling.

References

- Champion, L. A., & Power, M. J. (1995). Social and cognitive approaches to depression: Towards a new synthesis. British Journal of Clinical Psychology, 34(4), 485-503.
- Duda, J. L. (1992). Motivation in sport settings: A goal perspective approach. In G. Roberts (Ed.). Motivation in Sport and Exercise (pp 57-91). Champaign, IL: Human Kinetics.
- Gulbin, J.P., & Gaffney, P. T. (1997). Training and performance characteristics of 'open-to-all' ironman triathletes - abstract. In, Australian Conference of Science and Medicine in Sport, National Convention Centre, Canberra 7-10 October 1997 : abstracts, Bruce A.C.T., Sports Medicine Australia, 1997, p. 146-147.
- Hardy, L. (1999). Stress, anxiety and performance. Journal of Science and Medicine in Sport 2(3), 227-233.
- Lane, A. M., Sewell, D.F, Terry, P.C, Bartram, D, & Nesti M.S (1999). Confirmatory factor analysis of the Competitive State Anxiety Inventory-2. Journal of Sports Sciences, 17(6), 505-512.
- Lane, A. M., & Terry, P.C. (2000). The Nature of Mood: Development of a Conceptual Model with a Focus on Depression. Journal of Applied Sport Psychology. 12, 16-33.
- Martens, R., Vealey, R., & Burton, D. (1990). Competitive Anxiety in Sport. Champaign, Ill. Human Kinetics.
- Messer, B., & Harter, S. (1986). Manual for the Self-Perception Profile. University of Denver.
- McIntosh, W. D. (1996). When Does Goal Nonattainment Lead to Negative Emotional Reactions, and When Doesn't It? The Role of Linking and Rumination. In L. L. Martin & A. Tesser (Eds.), Striving and Feeling (pp 53 - 79) New Jersey: LEA
- McIntosh, W., & Martin, L. (1992). The cybernetics of happiness: The relation of goal attainment, rumination and affect. In M. S. Clark (Eds.), Emotion and Social Behaviour (pp. 222 - 246). London, New Delhi: Sage.
- Nicholls, J.G. (1984). Achievement motivation: Concepts of ability, subjective experience, task choice, and performance. Psychological Review, 91, 328-346.
- O'Toole, M.L. (1999). Training for ultraendurance triathlons. Medicine and Science in Sports and Exercise 21(5), S209-S213.

Radloff, L. (1977). The CES-D Scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385 - 401.

Street, H. (2000). The depressing price of ambition Psy News (Department of Psychiatry and Behavioral Science, University of Australia) August.

Street, H. (1999) Depression and the pursuit of happiness. Clinical Psychologist 4 (1), 18 - 25.

Zimmerman, M., McDermu, W.t & Mattia, J.I. (2000). Frequency of anxiety disorders in psychiatric outpatients with major depressive disorder. The American Journal of Psychiatry, 157(8), 1337.