Anxiety symptom interpretation and performance expectations in high-anxious, low-anxious, defensive high-anxious and repressor individuals.

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Abstract:

To date, no research has investigated score predictions and anxiety interpretation in high-anxious, low-anxious, defensive high-anxious and repressor individuals. This study examined Eysenck's (1997) predictions for cognitive biases on future performance expectations in all four groups. This study was conducted in an ecologically-valid sporting environment. Competitive shooters completed the Marlowe-Crowne Social Desirability Scale and the Sport Anxiety Scale prior to a major competition. Percentile splits identified the four defensiveness/anxiety groups. The modified Competitive Sport Anxiety Inventory- 2 was used to assess the intensity and direction of anxiety prior to competition. Participants predicted their expected shooting score. The hypothesis that repressors would interpret their anxiety as more facilitative to performance compared to low-anxious individuals was partially supported. Repressors were more optimistic in their performance prediction in contrast to defensive high-anxious performers who, in turn, were more pessimistic compared to the other two groupings. High-anxious performers, contrary to predictions, demonstrated optimism in their future performance. The findings of this study corroborate the theoretical predictions and the evidence from previous studies with sport performers. Future research should continue to investigate the influence of cognitive biases on performance predictions in sporting environments using Weinberger et al.'s classifications.

Keywords: anxiety symptom interpretation, cognitive biases, performance prediction, shooting.

1.0 Introduction

The effect of anxiety on sporting performance has been investigated widely over the years (e.g., Wilson, Smith, & Holmes, 2007; Moore, Vine, Freeman, & Wilson, 2013). Limited research, however, has considered the individual differences that influence anxiety and associated cognitive factors, or the effect of social desirability. Situational or state anxiety has been proposed to have both an intensity and directional component (Jerome & Williams, 2000), and both symptoms are important in understanding the multidimensional effect of anxiety in sporting situations. Anxiety intensity reflects the severity of symptoms whereas the directional component of anxiety reveals the way cognitive and somatic anxiety symptoms are interpreted as either facilitative or debilitative to performance.

Over the past 20 years, researchers have used the modified version of the CSAI-2 to assess anxiety symptoms (e.g., Hanton, Neil, Mellalieu, & Fletcher, 2008). There is, however, limited research examining what may cause different interpretations of these symptoms. Anxiety interpretation can be influenced by coping styles linked to cognitive defense mechanisms that are the characteristic of different personalities. Weinberger, Schwartz, and Davidson (1979) were the first to identify four personality profiles from trait anxiety and defensiveness scores: high-anxious individuals who score high on trait anxiety and low defensiveness; defensive high-anxious individuals who score high on trait anxiety and defensiveness; low-anxious individuals who score low on trait anxiety and defensiveness; and repressor individuals who score low on trait anxiety and high defensiveness. These different personality profiles have been predicted to show different coping behaviors. For example, Weinberger et al. (1979) reported that repressors report low levels of anxiety, whilst their physiological response to anxiety displays a profile similar to high-anxious individuals. In contrast, low-anxious individuals did not appear to demonstrate any separation between self-report measures and physiological measures of anxiety. These findings suggest cognitive

factors, such as defensiveness, may moderate the anxiety response. Weinberger (1990) concluded that repressors report low levels of anxiety because they believe they are not experiencing a negative affect. Data for defensive high anxious individuals is typically absent from most research populations.

Following Weinberger et al.'s identification of these personality types, Eysenck (1997) proposed a four-factor theory suggesting that the emotional experience of anxiety depended on the processing of four sources of information: (i) the cognitive appraisal of the situation; (ii) an individual's interpretation of their physiological activity; (iii) perceived level of behavioral anxiety; and (iv) an individual's own cognitions, e.g., worries about the future. Eysenck also proposed that the four personality groups differed in dispositional anxiety as a result of their cognitive biases. The operation of cognitive biases has been assumed to be influenced by schemas stored within long-term memory. These cognitive biases operate on all four factors and cause individuals to either magnify or minimize threat. It is assumed that both attentional and interpretive biases influence the four sources of information, and depend on processes operating below a level of conscious awareness. High-anxious individuals are predicted to demonstrate both attentional and interpretive biases, which can lead them to amplify threat and interpret ambiguous stimuli as threatening. Defensive high-anxious individuals were suggested to have a similar cognitive bias to high-anxious performers. In contrast, repressors were proposed to have opposite interpretive and attentional biases causing them to avoid and minimize threat and interpret ambiguous stimuli as non-threatening. Low-anxious performers were proposed not to demonstrate any cognitive bias. The influence of cognitive biases has been assumed to be mediated by state-anxiety intensity, being most evident when state-anxiety is high. Furthermore, Eysenck's (1997) proposed that the cognitive biases exhibited by high-anxious and repressor individuals also influence their cognitions about future events. Specifically, repressors are more optimistic in performance

expectations as a result of their opposite cognitive biases to avoid threat. In contrast, high-anxious individuals are more pessimistic in performance predictions due to their interpretive biases, which lead them to interpret ambiguous stimuli as threatening.

Numerous studies have examined the interpretation of anxiety as either facilitative or debilitative to performance (Lundqvist, Kentta, & Raglin, 2011). Only three research studies have examined Weinberger et al.'s (1979) classification of personality groupings in a sporting environment (Mullen, Lane, & Hanton, 2009; Jones, Smith, & Holmes, 2004; Williams & Krane, 1992). Jones et al. (2004) considered Eysenck's four-factor model and sought to establish differences in the interpretation of cognitive and somatic anxiety as either facilitative or debilitative to performance in an ecologically-valid competitive golf study. Jones et al.'s findings partially supported the predictions of Eysenck (1997) that repressors' cognitive biases led them to be optimistic in their performance predictions. No discrepancy was found between the actual and predicted performance for the high-anxious group. Unfortunately, a limitation to this study, was the lack of a defensive high-anxious group due to low participant numbers. To address this omission, Mullen et al. (2009) increased participant numbers to enable the inclusion of a defensive high-anxious group. Mullen et al.'s (2009) findings supported the original hypothesis that high intensity somatic anxiety was more debilitative to performance for high-anxious and defensive high-anxious groups. There were also several limitations to this study. First, the modified CSAI-2 state anxiety questionnaires were completed away from the competition setting and after reading an imagery script. The authors designed this imagery-based script to re-create the competition setting rather than using real sporting environments or allowing the student participants to create their own imagery script. Further, sporting performance was not measured and a wide variety of sports were used. This is of concern since performers in explosive, contact sports may interpret somatic anxiety intensity as more facilitative compared to athletes in fine

control sports such as rifle shooting where high somatic anxiety intensity is typically interpreted as debilitative to performance (Hanton, Jones, & Mullen, 2000).

To date, therefore, no research has investigated score predictions and anxiety interpretation in all four personality groups and in an ecologically-valid, single sport environment. The aim of the study was to investigate how anxiety is interpreted in high-anxious, low-anxious, defensive high-anxious and repressor rifle shooters. We also aimed to investigate differences in performance predictions between the four groups. In line with Jones et al. (2004), it was predicted that repressors would perceive anxiety to be more facilitative to performance compared to high-anxious, low-anxious, and defensive high-anxious shooters. In addition, we hypothesized that the defensive high-anxious and high-anxious groups would be more pessimistic in their performance predictions, whereas the repressors would be more optimistic in their performance predictions.

2.0 Method:

2.1 Participants:

185 fullbore rifle shooters (161 males and 23 females; mean age of 44 years; SD: ± 16.5) competing in the National Rifle Association's Imperial Meeting participated in the study. Participants completed a written informed consent form, and were assured of confidentiality and their right to withdraw at any time. The protocol was approved by the local Institutional Ethics Committee.

2.2 Measures:

The 10-item short form of the Marlowe-Crowne Social Desirability Scale (MC-SDS; Strahan & Gerbasi, 1972) was used to assess defensiveness and to discriminate repressor individuals from low-anxious individuals, and defensive high-anxious from high-anxious individuals.

This questionnaire has been used consistently with research investigating Weinberger et al.'s personality types and has been characterized as a measure of defensiveness (Weinberger et al., 1979). A correlation coefficient of r = 0.9 has been reported between the 10 item MC-SDS and the original 33 item MC-SDS with an internal consistency alpha coefficient of 0.66 (Reynolds, 1982).

The Sport Anxiety Scale (SAS; Smith, Smoll, & Schutz, 1990), a sport specific multidimensional measure of trait anxiety was used. The SAS contains 21 items and consists of three subscales, including five concentration disruption items, seven cognitive anxiety items and nine somatic anxiety items. Respondents rate each item on a four point Likert scale ranging from 1 (not at all) to 4 (very much so). A retest reliability of 0.77 has been reported (Smith et al., 1990) with a Cronbach alpha of 0.86 for the cognitive subscale. Shooters were given Smith et al.'s (1990) instructions for completion of the form.

The Competitive State Anxiety Inventory-2 (CSAI-2: Martens, Burton, Vealey, Bump, & Smith, 1990) was used to measure pre-competitive state anxiety intensity and direction. The questionnaire comprises 27 items for anxiety intensity and direction with three subscales equally weighted: cognitive anxiety; somatic anxiety; and self-confidence. The intensity scale includes items rated on a four point Likert scale, ranging from 1 (not at all) to 4 (very much so). The direction scale indicates the degree to which participants perceive their anxiety symptoms as either facilitative or debilitative to future performance. The direction scale consists of a 7-point Likert scale ranging from -3 (very debilitative) to +3 (very facilitative). Martens et al. (1990) reported alpha coefficients of 0.79, 0.82 and 0.88 for the cognitive anxiety, somatic anxiety and self-confidence subscale respectively.

2.3 Procedure:

Participants completed the MC-SDS and the SAS individually one month prior to the competition. Percentile points (set at 33% and 66%) were used on the participants' MC-SDS

and SAS cognitive sub-scale scores to identify the four personality groups; high-anxious (n= 13), defensive high-anxious (n= 9), low-anxious (n= 10) and repressor (n= 13). Forty minutes to one hour prior to the competition, participants completed the modified CSAI-2 and predicted the score they expected to achieve in the forthcoming competition. Actual scores were recorded after the competition by the experimenter.

2.4 Data analysis:

All participants classified as either DHA or HA reported higher state anxiety intensity on the CSAI-2 median split compared to the REP and LA individuals thereby controlling for the potential moderating effect of the role of state anxiety. Consequently, MANOVA were used to examine the between-group differences in self-reported state anxiety intensity and state anxiety direction scores with a follow-up ANOVA. A factorial MANOVA was performed on the modified CSAI-2 intensity scores, with personality group as the independent variable, and cognitive and somatic state anxiety intensity as the dependent variables. A second MANOVA was performed on the direction scores with personality group as the independent variable and cognitive and somatic anxiety direction as the dependent variables. Between-group differences in predicted score accuracy (predicted score-actual score) were examined by ANOVA. Effect sizes were calculated as Cohen's d (Cohen, 1988).

3.0 Results

3.1 Trait anxiety and defensiveness: heterogeneity check:

A statistical heterogeneity check was performed for the four personality groups prior to the main data analysis to ensure they differed in trait anxiety and defensiveness. The one-way ANOVA for the SAS cognitive anxiety sub-scale revealed significant differences between the four groups, $F(3, 45) = 27.248$, $p < 0.01$. *Post-hoc* Tukey HSD analysis confirmed significant differences between the trait anxiety scores of the high-anxious and low-anxious groups ($p <$

0.05, *ES*= 0.9) and the defensive high-anxious and repressor groups ($p < 0.05$, *ES*= 0.8). A one-way ANOVA analysis of the MC-SD scores showed significant differences between the four groups, $F(3, 45) = 19.018$, $p < 0.01$. *Post-hoc* analysis confirmed significant differences in MC-SD scores between the defensive high-anxious and low-anxious groups ($p < 0.05$, *ES*= 0.9) and the repressor and high-anxious groups ($p < 0.05$, *ES*= 0.9).

3.2 Power analysis

Post-hoc power analysis (Cohen, 1988) was conducted for the state anxiety intensity and direction data. The power analysis results for the state anxiety intensity data were; power = 0.84 ($\alpha = 0.05$; $\beta = 0.16$) for cognitive anxiety and power = 0.77 ($\alpha = 0.05$; $\beta = 0.23$) for somatic anxiety. The power analysis results for the state anxiety direction data were; power = 0.65 ($\alpha = 0.05$; $\beta = 0.35$) for cognitive anxiety and power = 0.75 ($\alpha = 0.05$; $\beta = 0.25$) for somatic anxiety.

3.3 State anxiety intensity:

The MANOVA showed significant between-group differences in anxiety intensity, (Wilks' Lambda = 0.260, $F(3, 45) = 12.808$, $p < 0.01$). A follow-up between group ANOVA showed a significant difference in cognitive anxiety intensity ($F(3, 45) = 31.449$, $p < 0.01$). *Post-hoc* analysis showed the low-anxious group differed significantly from the high-anxious ($p < 0.01$, *ES*= -0.7) and defensive high-anxious groups ($p < 0.01$: *ES*= -0.8). A significant difference was also found between the repressors and the high-anxious ($p < 0.01$: *ES*= -0.8), and defensive high-anxious groups ($p < 0.01$: *ES*= -0.8). No significant differences in cognitive anxiety intensity were found between the defensive high-anxious and high-anxious groups ($p > 0.05$), or the repressor and low-anxious group ($p > 0.05$).

A follow-up between group ANOVA showed a significant difference in somatic anxiety intensity ($F(3,45) = 12.287$, $p < 0.01$). *Post-hoc* analysis showed the high-anxious group differed significantly in somatic anxiety intensity from the low-anxious ($p < 0.05$: *ES*= 0.6), and the repressor group ($p < 0.05$: *ES*= 0.6). In addition, the defensive high-anxious group differed significantly from the low-anxious ($p < 0.01$: *ES*= 0.6) and repressor group ($p < 0.01$: *ES*= 0.6). There was no significant difference between the defensive high-anxious and high-anxious groups ($p > 0.05$) or the repressor and low-anxious groups ($p > 0.05$) (see Figure 1.)

3.4 State anxiety direction:

The second MANOVA showed significant between group differences for anxiety direction (Wilks' Lambda = 0.555, $F(3,45) = 4.564$, $p < 0.01$). A follow-up between group ANOVA confirmed a significant difference within the cognitive anxiety direction data ($F(3,45) = 5.056$, $p < 0.05$). *Post-hoc* analysis revealed the repressor group differed significantly in cognitive anxiety direction from the defensive high-anxious ($p < 0.05$: *ES*= 0.5) and high-anxious group ($p < 0.05$: *ES*= 0.4). No significant differences were found between the defensive high-anxious and the high-anxious group, or between the low-anxious and other three groups.

A one-way ANOVA showed a significant difference in somatic anxiety direction ($F(3,45)= 7.637$, $p < 0.01$) with *post-hoc* analysis showing the repressor group differed significantly in somatic anxiety direction from the high-anxious ($p < 0.05$: *ES*= 0.5) group. The low-anxious group were significantly different to the defensive high-anxious ($p < 0.01$: *ES*= -0.6) and high-anxious group ($p < 0.05$: *ES*= 0.5). No significant difference was found between the repressor, low-anxious and defensive high-anxious group or the defensive high-anxious and high-anxious groups (see Figure 2.)

3.5 Score prediction accuracy:

A one-way ANOVA of the score prediction accuracy data showed approaching significance between the four groups ($F(3,45) = 2.615$, $p=0.06$) (see Figure 3). For example, the 0.4 difference in the repressor group, was the equivalent to 5 places in the Commonwealth Games.

4.0 Discussion:

This study aimed to extend the work of Mullen et al. (2009) and Jones et al. (2004), with the inclusion of score prediction data and the addition of the defensive high-anxious group with sports performers in an ecologically-valid sports environment. The first aim of this study was to investigate whether anxiety would be interpreted as facilitative or debilitative to performance in high-anxious, defensive high-anxious, low-anxious, and repressor fullbore rifle shooters. It was hypothesized that repressors would perceive anxiety to be more facilitative to performance when compared to the other three groups. The second aim was to investigate the differences in performance prediction between the four personality groups, extending the research conducted by Jones et al. (2004). Specifically, the defensive high-anxious and high-anxious group were predicted to be pessimistic in their performance predictions, whereas the repressor group were predicted to be optimistic.

The findings of this study corroborate the theoretical predictions and the evidence from previous studies conducted with sport performers (Mullen et al., 2009; Jones et al., 2004). In relation to the intensity of the competitive state anxiety response, repressors reported both their cognitive and somatic state anxiety intensity to be significantly lower than the high-anxious and defensive high-anxious individuals. Importantly, the repressors did not differ significantly from the low-anxious individuals for either somatic or cognitive state anxiety intensity. In addition, the defensive high-anxious group did not differ significantly from the high-anxious group in cognitive or somatic state anxiety intensity. The lower level

of both cognitive and somatic anxiety intensity reported by repressors supports previous research (e.g., Jones et al., 2004). These differences are considered important for the data analysis, as without defensiveness, defensive high-anxious individuals are mistakenly classified as situationally high-anxious, and repressors as low-anxious.

The repressors reported their cognitive and somatic anxiety to facilitate shooting performance compared to the defensive high-anxious and high-anxious group. This finding, again, is in support of the results of Jones et al. who showed that repressors demonstrated a cognitive bias to interpret anxiety as facilitative to performance. Both the high-anxious and defensive high-anxious shooters reported their somatic and cognitive anxiety to be significantly debilitative to performance. Jones et al. suggested that the comparison in the interpretation of directional anxiety is more valid when the state anxiety intensity is similar within two groups. As there were no significant differences between the repressor and low-anxious groups, we are able to compare the directional interpretation of anxiety. Contrary to our predictions, the repressor group did not interpret their somatic anxiety to be more facilitative to their performance than the low-anxious group. The low levels of somatic anxiety intensity experienced could explain why they both reported facilitation to performance. This could be supported by previous research, which has found athletes report more facilitative symptoms when state anxiety is low (Lundqvist, et al., 2011). In line with our predictions, repressors also reported their cognitive anxiety to be facilitative to performance, whereas the low-anxious performers demonstrated no bias towards interpretation of anxiety. This finding does partially support the proposal that repressors cognitive defense mechanisms are involved in their interpretation of anxiety as facilitative.

There were no significant differences in somatic and cognitive state anxiety intensity between the high-anxious and defensive high-anxious groups. This allows us to compare the prediction by Eysenck (1997) that defensive high-anxious performers have a similar

cognitive bias to high-anxious performers. Both groups reported their somatic and cognitive anxiety as debilitative to performance, supporting the findings of Eysenck and Derakshan (1997) and the prediction of Eysenck (1997) that both groups interpret stimuli as threatening. The importance of this finding is highlighted further by Eysenck's (1997) suggestion that cognitive biases are more evident when state anxiety is high. Therefore, the findings of this study suggest that the cognitive defense mechanisms in the interpretation of anxiety are similar between high-anxious and defensive high-anxious individuals.

To date, limited sports research has been conducted based on Eysenck's (1997) predictions for the influence of cognitive biases on future performance expectations. The second hypothesis relating to the influence of cognitive biases on future performance expectations was partially supported for the defensive high-anxious and repressor group. As predicted by Eysenck (1997) the repressor group were optimistic in their discrepancy between their actual and predicted performance compared to the defensive high-anxious shooters. It is assumed that repressors show biases that lead them to actively avoid threat-related stimuli with Vigilance Avoidance Theory (VAT) suggesting that repressors utilize avoidant cognitive biases of the stimuli to experience absence of anxiety. VAT also predicts that repressors may show an initial attentional bias towards threat-related stimuli (e.g., external wind conditions; an important performance factor within fullbore rifle shooting), followed by a cognitive bias-related stimulus avoidance. This avoidance of the environmental conditions could lead to repressors missing important task-related information when asked to predict a future performance score. Interestingly, in line with our prediction, the defensive high-anxious group were pessimistic about their future performance. Although previous research has demonstrated that this group exhibit similar attentional and interpretive biases to high-anxious individuals (Derakshan and Eysenck, 1997), it is difficult to make theoretical predictions about how cognitive biases influence future performance predictions. Self-

reported high trait-anxiety should be associated with attentional and interpretive biases. High levels of defensiveness would, however, be expected to be associated with opposite interpretive and attentional biases. The defensive high-anxious group had similar levels of both cognitive and somatic anxiety intensity and reported these symptoms as debilitative to performance. It may be that the defensive coping style is relatively ineffective as it does not prevent opposite biases and instead leads to pessimism about their ability to control future events. Further research is required within this area to develop our understanding of the cognitive biases within this group in particular.

Eysenck's (1997) theory also predicts that low-anxious individuals will be more realistic in their performance predictions due to the absence of cognitive biases. Our findings partially support this prediction as there was limited discrepancy between the actual and predicted performance, demonstrating an absence of cognitive biases. In contrast, the high-anxious group were optimistic in their predictions compared to the defensive high-anxious group.

Research investigating Eysenck's (1997) predictions of the influence of cognitive biases on future performance predictions is limited to this study, Eysenck and Derakshan, (1997) and that of Jones et al., 2004. All three found different results for the high-anxious group. Eysenck and Derakshan examined the personality groups in an examination setting and found the high-anxious students to be overly pessimistic. In contrast, Jones et al. (2004) found no discrepancy between the predicted and actual performance. Both Eysenck and Derakshan, and Jones et al., suggested the reason why the predicted cognitive bias was not shown is due to situationally-relevant feedback of previous performance and current conditions. The effect of feedback could partially explain our findings within the high-anxious group. Shooters made their performance predictions based on the immediate

environmental conditions and their position on the range. If any factor changed, it is likely that their predicted performance may have been different. The timing of the data collection could also provide an explanation for varying results between the three studies. Eysenck and Derakshan required participants to predict their performance two months prior to the examination, whereas Jones et al. collected performance predictions 30 minutes prior to the start of the golf matches, different to this study due to the individual requirements of the pre-performance routines. Since Eysenck (1997) predicted that cognitive biases are influenced by the level of state anxiety the individual experiences and, since state anxiety is elevated closer to competition, the biases may be more evident in Jones et al.'s study. Within this study, although the repressor and defensive high-anxious groups were in line with Eysenck's prediction of the cognitive bias they would demonstrate, statistical significance may have been reached if the data had been collected closer to the start of the competition.

Defensive high-anxious participants are not always identified in anxiety research due to the less common combination of high trait anxiety and high defensiveness. Interestingly, however, there appears to be a higher proportion of defensive high-anxious individuals within clinical settings such as chronic musculoskeletal pain groups (e.g., Creswell & Chalder, 2001; Lewis, Fowler, Woby, & Holmes, 2012). Further research, recruiting larger initial samples, is warranted in order to investigate this group of individuals within performance/behavior prediction research.

5.0 Conclusions

In conclusion, this study aimed to extend the work of Mullen et al. (2009) and Jones et al. (2004) by investigating the interpretation of anxiety as either facilitative or debilitative to individuals classified using Weinberger et al.'s taxonomy of individuals in a valid competitive sporting environment. In addition, the performance predictions between the four

personality groups were examined. Support was found for the prediction that repressors would perceive anxiety to be more facilitative to performance when compared to the other three groups. Due to similar levels of anxiety intensity we compared the directional interpretation of anxiety between the high-anxious and defensive high-anxious groups. Support was found for Eysenck's (1997) prediction that defensive high-anxious individuals were similar to high-anxious individuals in their cognitive bias to report anxiety symptoms as debilitative to performance. The prediction that defensive high-anxious performers would be overly pessimistic in their score predictions and repressors would be optimistic was partially supported. The high-anxious group did not demonstrate the predicted cognitive bias and results also differed, in part, from previous research. It was suggested that, in relation to future performance expectations, both feedback and the timing of data collection could mediate the cognitive biases of high-anxious performers. Future research should also aim to investigate the influence of cognitive biases on performance and behavior predictions in sporting and clinical environments using Weinberger et al.'s classifications.

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Figure 1. Mean cognitive and somatic state anxiety intensity scores (CSAI-2) for the four personality groups. Mean values for cognitive anxiety intensity: High-anxious: 25.5, (SD: ± 6.5); Low-anxious: 13.3, (SD: ± 3.5); Repressor: 12.2, (SD: ± 2.4); Defensive high-anxious: 26.4, (SD: ± 4.7). Mean values for somatic anxiety intensity: High-anxious: 18.8, (SD: ± 5.7); Low-anxious: 11.0, (SD: ± 1.6); Repressor: 11.1, (SD: ± 2.1); Defensive high-anxious: 20.9, (SD: ± 7.8).

Figure 2. Mean cognitive and somatic state anxiety direction scores for the four personality groups. Mean values for cognitive anxiety direction: High-anxious: -6.0, (SD: ±4.1); Low-anxious: -0.1, (SD: ±8.0); Repressor: 2.6, (SD: ±10.1); Defensive high-anxious: -8.2 (SD: ±6.2). Mean values for somatic anxiety direction: High-anxious: -6.2, (SD: ±5.4); Low-anxious: 6.7, (SD: ±5.9); Repressor: 4.0, (SD: ±11.1); Defensive high-anxious: -4.2, (SD: ±5.4).

Figure 3. Graph showing score discrepancy (predicted score-actual score) for the high-anxious, low-anxious, repressor and defensive high-anxious groups. (A positive score discrepancy is when a better performance is predicted than the actual score, e.g. optimism). Mean values: High-anxious: 0.48, (SD: ± 0.90); Low-anxious: 0.29, (SD: ± 0.52); Repressor: 0.45, (SD: ±0.25); Defensive high-anxious: -0.17, (SD: ± 0.10).