

Precompetitive appraisal, performance anxiety and confidence in conservatorium musicians: A case for coping

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Abstract

The way musicians appraise their abilities to succeed in a forthcoming evaluative performance impacts on the range of emotions they will experience. According to Lazarus' cognitive-motivational-relational theory, emotions may wield powerful consequences depending on whether the performance is interpreted as a threat (high importance/primary appraisal; low coping prospects/secondary appraisal), or challenge (high importance; high coping prospects). Thirty-six Bachelor of Music students at a large University music school completed an adaptation of the *Precompetitive Appraisal Measure (PAM)* and *Competitive State Anxiety Inventory–2R-D* twice in relation to their end-of-semester recital: at the start of semester, and within an hour before their recital. Primary and secondary appraisals formed theoretically consistent and reliable evaluations of threat and challenge. Secondary appraisals were significantly lower for students who viewed the performance as a threat. Students who viewed the performance as a challenge reported significantly less cognitive anxiety and higher self-confidence. Findings indicate that the PAM is a brief and reliable measure of cognitive appraisals that trigger precompetitive emotions of anxiety and confidence which can be used to identify those performers who could benefit from pre-performance intervention strategies to manage performance stress.

Keywords

cognitive appraisal, competitive anxiety, music performance anxiety, performance examination, stress

Music performance anxiety (MPA) can be controlled when musicians cognitively restructure their own thoughts and feelings about their performance by anticipating symptoms of anxiety and turning them to constructive use (Osborne, 2016a, 2016b; Osborne, Greene, & Immel, 2014). Without specific guidance in evidence-based coping strategies, music students in

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tertiary environments are likely to engage in social support (such as searching for help and emotional sharing with others), and avoidance (such as denial and detachment) strategies which may inadvertently *increase* MPA (Biasutti & Concina, 2014). In contrast, emerging evidence shows that students who are taught to reduce avoidant behaviours and re-direct their attention to the achievement of valued performance outcomes are likely to restrict symptoms of MPA from impairing their performance outcomes (Juncos et al., 2017).

To our knowledge, only two studies have examined the potential for MPA to be both facilitating (positive boost) and debilitating (negative) to performance outcomes. Wolfe (1989) determined that facilitating and debilitating MPA (measured as a trait) shared 21% of variance. Simoens, Puttonen, and Tervaniemi (2015) found that debilitating MPA, accompanied by perceived pressure, was associated with poor health, mental distress, and had detrimental effects on performance careers. Positive effects of MPA were associated with perceived support. Neither study tested a theoretical model for examining facilitating and debilitating performance anxiety via precompetitive appraisal in music performance, nor its relationship with an objective external criterion such as performance exam results.

Precompetitive appraisal is empirically related to the interpretation of emotion symptoms with regard to performance (Williams, Cumming, & Balanos, 2010), and presents a novel way to examine the facilitating or debilitating influence of MPA on performance outcomes. The cognitive interpretation, or appraisal, of an initial emotional response, such as fear, exerts a proximal influence on performance (Neil, Hanton, Mellalieu, & Fletcher, 2011), and substantially determines if performers will suffer emotion-related detriments or profit from emotion-related benefits (Lazarus, 2000). In sporting contexts, precompetitive appraisal determines the emotion experienced in the lead-up to an upcoming competition, with powerful and potentially destructive consequences for performance (Wolf, Evans, Laborde, & Kleinert, 2015). Emotions that are too weak or intense and feel unpleasant lead to lower motivation, distracted attention, and reduced performance. On the other hand, appropriately intense emotions which feel pleasant and are expected to help future performance are more likely to lead to increased effort, better decision making, and hence enhanced performance (Jones, Meijen, McCarthy, & Sheffield, 2009). This study is the first known attempt to examine precompetitive appraisal constructs in musicians in relation to a performance assessment/recital.

Lazarus' (1999) cognitive-motivational-relational theory states that emotions develop as the result of specific *primary* and *secondary* appraisal processes. In *primary* appraisal, competitors evaluate their performance goal in terms of how relevant and important an upcoming competition is to them. This appraisal relates to the intensity of precompetitive emotions. In *secondary* appraisal, competitors evaluate whether they have the necessary skills to meet performance demands and achieve a successful outcome, which sets the affective tone of the appraisal. Taken together, both *primary* and *secondary* appraisal determine an individual's sense of potential loss or gain in an upcoming competition, through judgements of *threat* (high importance and low coping prospects) and *challenge* (anticipated gain). *Threat* is characterised by *low secondary* appraisal (i.e., low coping with regard to the upcoming competition), leading to an unpleasant affective tone of precompetitive anxiety (Williams & Cumming, 2012) and interpretation of symptoms as debilitating (Williams et al., 2010). Conversely, *challenge* is characterised by *high secondary* appraisal (i.e., high coping prospects) and pleasant affective tone of precompetitive excitement, relating to the interpretation of symptoms as facilitating (Williams et al., 2010) and optimal for future performance (Robazza, Pellizzari, Bertollo, & Hanin, 2008).

This study aims to determine if, and how, primary and secondary appraisals of performance goal, importance, skill level, and potential to cope with the perceived threat or challenge of a

competitive music performance are associated with facilitating or debilitating performance anxiety and self-efficacy. It is expected that musicians who appraise the performance as a threat will have higher anxiety scores and lower self-efficacy. Conversely, those who appraise the performance as a challenge will have lower anxiety scores and higher self-efficacy.

Method

Participants

Thirty-six participants ($n = 26$ females; $M_{\text{age}} = 20.39$ years, $SD_{\text{age}} = 4.05$ years) were drawn across two years of the Bachelor of Music student population enrolled in music performance subjects at a conservatorium embedded within a prominent Australian university (2015: $n = 435$; 2016: $n = 430$). The main recital instrument for most students was nominated as voice (25%), followed by keyboard (22%), woodwind (19%), string (17%), brass (11%) and guitar (6%). They had been learning their main instrument for $M = 10.44$ years ($SD = 3.25$ years).

Measures

Two questionnaires were used in this study: questionnaire 1 (Time 1) at the start of semester, and questionnaire 2 (Time 2) prior to their end-of-semester recital. Questionnaire 1 comprised of four measures:

Demographics. Name, student ID, age, gender, main (recital) instrument, Australian Music Education Board grade level (if applicable), years learning main instrument, days per week and length per day practising.

Precompetitive Appraisal Measure (PAM; Wolf et al., 2015). This is a seven-item measure of individual appraisal judgements according to Lazarus' (1999) cognitive-motivational-relational theory, written in the context of an upcoming competition. Items (listed in Table 1) address primary (goal relevance, importance) and secondary appraisal (coping potential), and were answered on a 9-point Likert scale from 1 (*Strongly Disagree*) to 9 (*Strongly Agree*). The original measure was developed using a sample of 384 Canadian College and University athletes, Cronbach's alpha for primary appraisal = .75, secondary appraisal = .80. All items were modified to refer to a music performance assessment/recital context as listed in Table 1.

Competitive State Anxiety Inventory-2 Revised Directional Modification (CSAI-2R-D; Cox, Martens, & Russell, 2003; Wolf et al., 2015). This scale provides information on three feelings before a competition: somatic anxiety (e.g., "I feel jittery"), cognitive anxiety (e.g., "I am concerned about losing"), and self-confidence (e.g., "I feel confident"). Cronbach's alpha coefficients for the calibration and validation samples reported in Cox et al. (2003) range from .81 to .91. The directional modification was used by Wolf et al., (2015) to provide information on perceived intensity and consequences ("very debilitating" to "very facilitative") of precompetitive anxiety symptoms. This current study expanded the intensity and perceived consequences Likert scales to 9-point with the same anchors to facilitate consistent variability in the spread of scores across the PAM and CSAI-2R-D measures. Slight modifications were made to the performance context for two items: "I am concerned that I may not do as well in this *competition* as I could" became "I am concerned I may not do as well in this *performance* as I could", and item 5 "I am concerned about *losing*" became "I am concerned about *failing*".¹

Table 1. Descriptive statistics for precompetitive appraisal, anxiety, self-confidence and self-efficacy measures.

Variable	Time 1 M (SD)	Time 2 M (SD)
Precompetitive Appraisal (PAM, 1–9):		
<i>Primary appraisal</i>		
1. Doing well in this recital is extremely important to me for achieving my personal goals. (goal relevance)	7.71 (1.07)	7.53 (0.79)
2. In this recital I have a lot at stake. (goal relevance)	8.08 (1.73)	8.14 (0.90)
3. This recital is highly desirable to me. (goal congruence)	6.81 (1.95)	6.97 (1.65)
	7.47 (2.05)	7.47 (1.25)
<i>Secondary appraisal</i>		
4. Mentally, I'm in control of the recital. (blame/credit)	7.07 (1.24)	7.43 (1.20)
5. I've taken full responsibility in preparing for my recital. (blame/credit)	5.81 (1.97)	6.50 (1.50)
6. I have all the resources I need to cope with my recital. (coping potential)	7.61 (1.90)	7.92 (1.66)
7. I have what it takes to be very successful in my recital. (future expectations)	7.44 (1.34)	7.83 (1.18)
	7.42 (1.32)	7.47 (1.42)
<i>Precompetitive Emotions:</i>		
Cognitive anxiety (intensity 1–9)	6.30 (1.29)	5.24 (1.93)
(interpretation -4 to +4)	-1.28 (1.19)	-0.89 (1.32)
Somatic anxiety (intensity 1–9)	5.56 (1.45)	4.8 (1.56)
(interpretation -4 to +4)	-1.11 (1.01)	-0.56 (0.93)
Self-confidence (intensity 1–9)	5.97 (1.26)	6.32 (1.16)
(interpretation -4 to +4)	1.01 (1.40)	1.23 (1.25)
Self-efficacy (confidence scale 0%–100%)	67.45 (16.10)	75.28 (13.83)

Note. Time 1 = first two weeks of semester. The items at this time referred to the "end-of-semester performance assessment/recital". Time 2 = mean of 58.47 mins (range 20–100 mins) prior to end-of-semester recital examination. Cronbach's alpha for the two subscales: *Primary Appraisal* $\alpha = 0.86$ (Time 1) and $.79$ (Time 2); *Secondary Appraisal* $\alpha = 0.74$ (Time 1) and 0.84 (Time 2).

Self-efficacy. Consistent with Bandura's (2006) recommended methodology for constructing self-efficacy scales and previous studies assessing self-efficacy in music performance (e.g., McPherson & McCormick, 2006), we asked students to report how confident they were to perform their pieces with musical and technical accuracy, according to a 0–100% confidence scale ("0% – Not at all confident" to "100% – Completely confident").

Questionnaire 2 comprised of the PAM, the CSAI-2R-D and self-efficacy scales described above.

Music performance recital results were obtained to compare with scores on these measures. These recitals are evaluated by at least two examiners: one is always a trained specialist on the instrument; the other is always a trained specialist on that instrument or within the family of instruments. This allows the rubric to be consistent across all families of instrument/voice. Performances are assessed according to five assessment criteria: Musical awareness (expression, structural awareness, style and period), Quality of sound (consistency, clarity of sound and focus), Accuracy (observation of performance directions, fluency and expression), Communication (intent and sense of performance), and Control of instrument or voice (technical control, production of sound). The overall mark is based on five categories of award:

- H1 (80–100): Distinctively superior evidence of assessment criteria (For marks between 80–100, all examiners must agree that the performance demonstrated *distinctively superior evidence* of individual and musical mastery beyond the criterion indicated which thereby resulted in an exceptionally superior performance that went well beyond what is typically evident at the undergraduate level.)
- H2A (75–79): Clear and consistent evidence of assessment criteria
- H2B (70–74): Consistent evidence of assessment criteria
- H3 (65–69) Limited or variable evidence of assessment criteria
- Pass (50–64): Limited or variable evidence of assessment criteria
- Fail (0–49): No evidence of having met assessment criteria.

Procedure

Ethics approval was obtained from the institution's human research ethics committee, and informed consent was obtained from all participants. Two questionnaires were administered: the first at Time 1 within the first two weeks of the start of second semester, the second at Time 2, approximately one hour prior to the end-of-semester performance recital examination. Individual undergraduate performance examinations provided the competitive performance context due to the nature of these examinations, in which the emphasis is on the individual within a predefined year group, and where students make comparative judgements about their own abilities based on their own result and that of their peers.

The study was advertised via email to students during the first week of semester 2, with a link to the online questionnaire. One of the researchers also advertised the study in person during concert class, and other large performance classes. At Time 2 one of the researchers met the participating students at a mutually convenient time and place to complete the second questionnaire, between 15–90 minutes prior to the start of their end-of-semester recital. This time frame is chosen to match the Wolf et al., (2015) study in which the PAM was completed an average of 83 minutes prior to competition. The environmental conditions for examination recitals were standardised such that all examinations take place during the same week after the semester has finished and in a small number of rooms with similar facilities.

Results

Descriptive and scale statistics are provided in Table 1. There was no significant difference in practice time per day between Time 1 ($M_{Time1} = 86.81$ mins, $SD_{Time1} = 64.93$ mins) and Time 2 ($M_{Time2} = 87.92$ mins, $SD_{Time2} = 52.49$ mins); $t(35) = -0.17$, $p > .05$. Time 2 questionnaires were completed an average of 58.47 minutes prior to the scheduled start of recital ($SD = 14.03$ mins). There were no significant differences according to gender on the anxiety, self-confidence, and self-efficacy measures.

Appraisal profiles

Hierarchical and K-means non-hierarchical cluster analyses at Time 1 and 2 indicated that precompetitive appraisal responses were best represented by a two-cluster solution. As shown in Figure 1, these clusters were one of relatively high primary and lower secondary appraisal

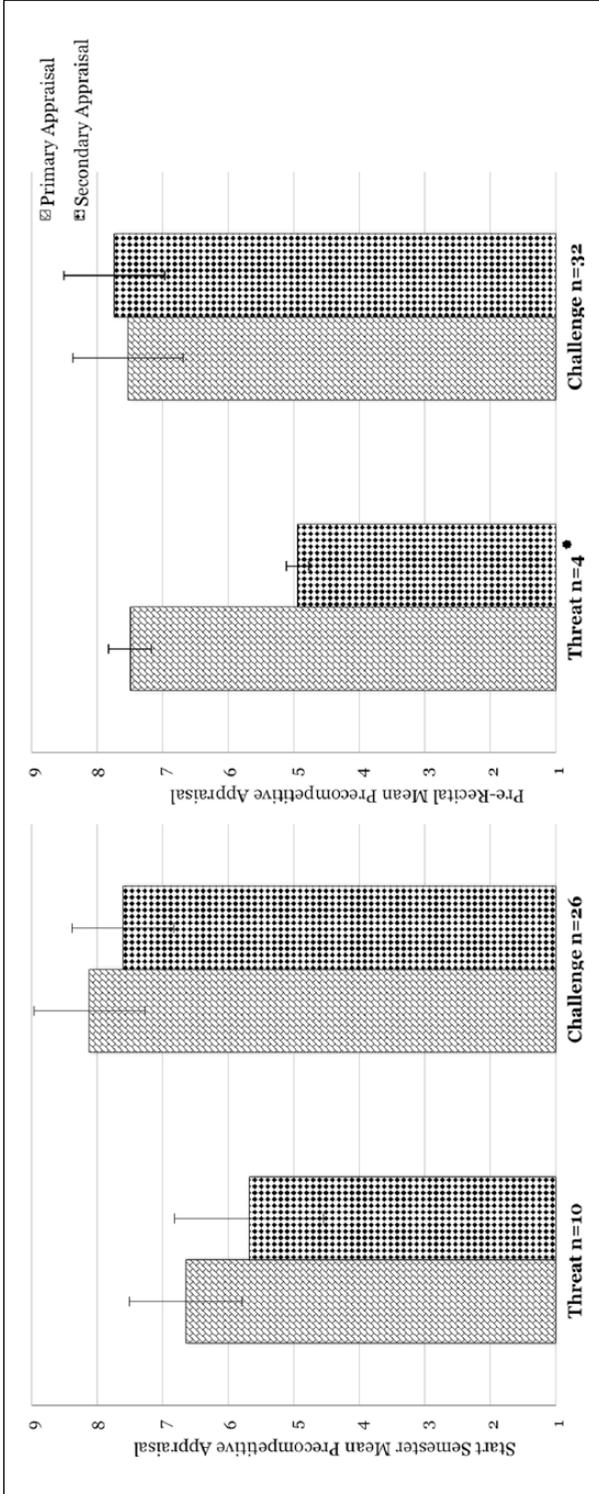


Figure 1. Threat and challenge cluster distributions of musicians across appraisal profiles. Error bars represent standard deviations. Asterisk denotes significant difference.

(labelled *Threat*) and one of relatively high primary and high secondary appraisal (labelled *Challenge*). Discriminant analyses formed theoretically consistent and reliable evaluations of threat and challenge at the start of semester (Time 1), Wilks' $\lambda = 0.32$, $\chi^2(2) = 38.03$, $p < .001$, $R^2 = 82.7\%$; and at pre-recital (Time 2), Wilks' $\lambda = 0.44$, $\chi^2(2) = 27.07$, $p < .001$, $R^2 = 74.8\%$. Secondary appraisals were significantly lower for four students who viewed the performance as a threat just prior to the recital, $t(3) = 4.53$, $p = .02$.

Anxiety and self-confidence

Mann-Whitney U tests of mean ranks showed that compared to students who viewed performance as a threat ($M_{Threat} = 7.00$, $SD_{Threat} = 0.99$), students who viewed performance as a challenge ($M_{Challenge} = 5.02$, $SD_{Challenge} = 1.91$); reported significantly less cognitive anxiety at pre-recital ($U = 21.00$, $z = -2.167$, $p = .028$) and significantly higher self-confidence both at the start of semester, ($M_{Threat} = 4.79$, $SD_{Threat} = 0.90$; $M_{Challenge} = 6.42$, $SD_{Challenge} = 1.08$; $U = 29.50$, $z = -3.555$, $p < .001$) and pre-recital ($M_{Threat} = 4.45$, $SD_{Threat} = 0.72$; $M_{Challenge} = 6.55$, $SD_{Challenge} = 0.98$; $U = 2.50$, $z = -3.104$, $p < .001$, Figure 2). Their evaluation of confidence as facilitating their performance was also significantly higher at the start of semester ($M_{Threat} = 0.10$, $SD_{Threat} = 1.13$; $M_{Challenge} = 1.35$, $SD_{Challenge} = 1.36$; $U = 66.50$, $z = -2.247$, $p = .023$) and pre-recital ($M_{Threat} = -0.25$, $SD_{Threat} = 1.18$; $M_{Challenge} = 1.42$, $SD_{Challenge} = 1.14$; $U = 19.50$, $z = -2.247$, $p = .021$, Figure 3).

Self-efficacy

Self-efficacy increased significantly from start of semester to recital ($M_{Time1} = 67.45$, $SD_{Time1} = 16.10$; $M_{Time2} = 75.28$, $SD_{Time2} = 13.83$); $t(35) = -2.90$, $p = .006$. Compared to students with a threat profile, those with a challenge profile reported significantly greater self-efficacy at pre-recital ($M_{Threat} = 47.50$, $SD_{Threat} = 22.17$; $M_{Challenge} = 78.75$, $SD_{Challenge} = 7.51$; $U = 5.50$, $z = -3.148$, $p = .001$), but not at the start of the semester ($M_{Threat} = 60.00$, $SD_{Threat} = 21.60$; $M_{Challenge} = 68.38$, $SD_{Challenge} = 15.47$).

Predicting precompetitive stress and confidence

Linear regressions confirmed the predictive and differential effects of primary and secondary appraisal on anxiety and self-confidence (Table 2). Primary appraisal predicted higher somatic and cognitive anxiety at the start of semester, and debilitating interpretations of anxiety. Primary appraisal did not predict anxiety or self-confidence immediately before performance. Inversely, secondary appraisal predicted less somatic and cognitive anxiety, more facilitative interpretations of somatic anxiety, and greater self-confidence at the start of semester and just prior to the recital. Secondary appraisal was a highly significant and substantial predictor of self-confidence in the hour prior to recital.

Recital exam scores

Students who perceived the performance as a challenge achieved a higher exam score, which was not significant: Time 1 ($M_{Challenge} = 75.14$, $SD_{Challenge} = 10.05$; $M_{Threat} = 71.30$, $SD_{Threat} = 5.72$), $U = 95.50$, $z = -1.22$, $p > .05$; Time 2 ($M_{Challenge} = 74.83$, $SD_{Challenge} = 9.19$; $M_{Threat} = 68.00$, $SD_{Threat} = 6.93$), $U = 34.00$, $z = -1.52$, $p > .05$. Notably, at pre-recital, the mean difference between challenge and threat profile scores did amount to a difference of two graded categories: the challenge mean of 75 falling within the H2A category, being two categories higher than the mean score of

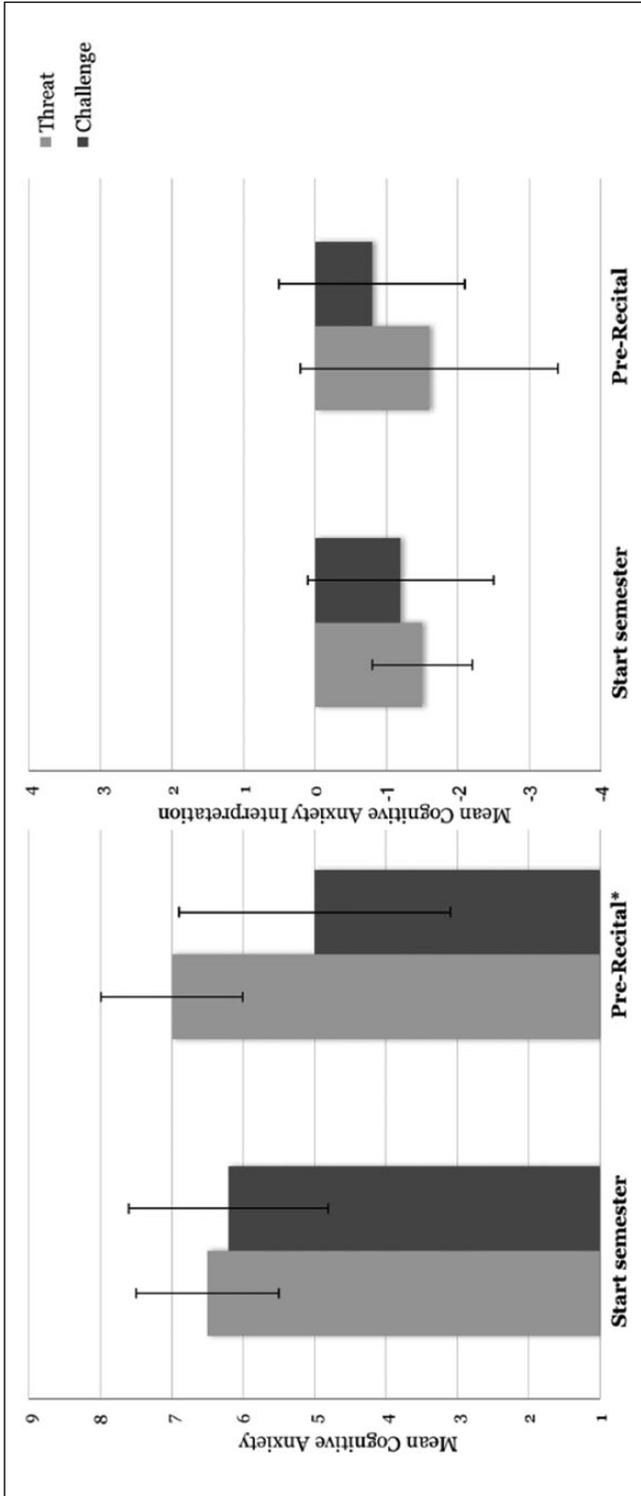


Figure 2. Cognitive anxiety intensity and interpretation ratings for competitive performance at start of semester and pre-recital. Error bars represent standard deviations. Asterisk denotes significant difference.

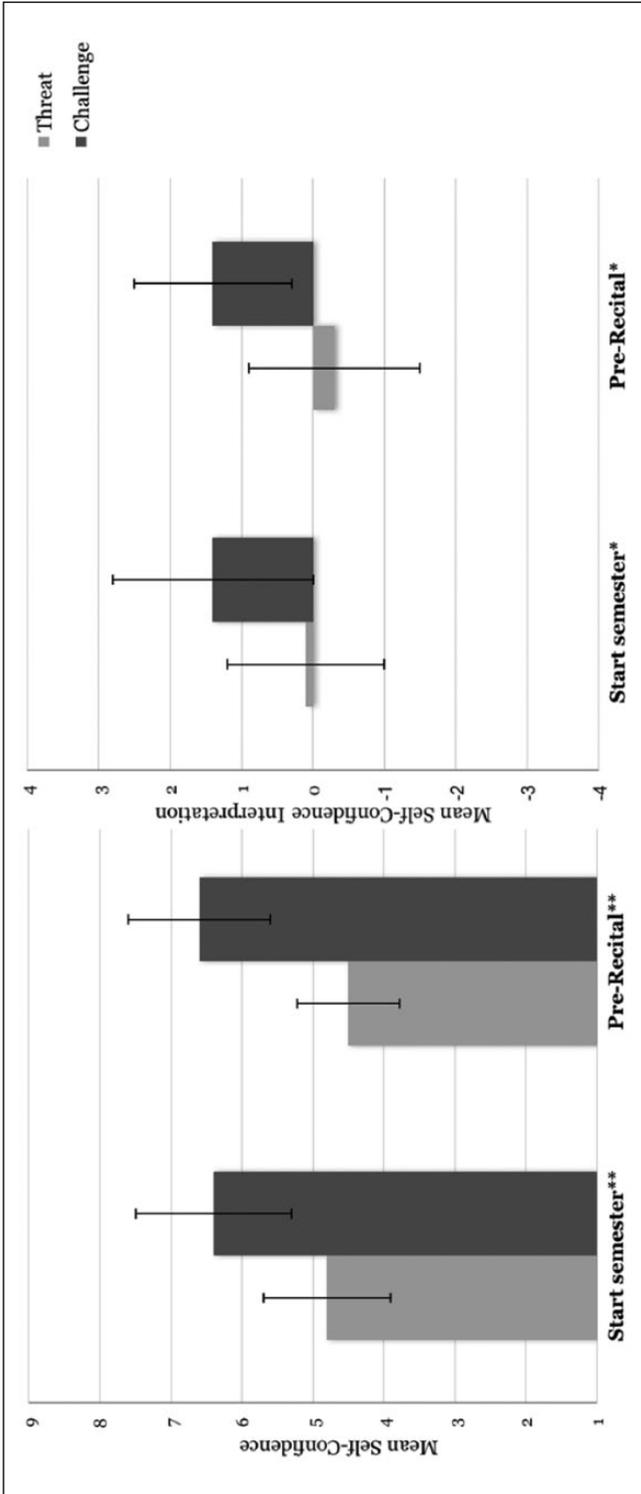


Figure 3. Self-confidence intensity and interpretation ratings for competitive performance at start of semester and pre-recital. Error bars represent standard deviations. Asterisk denotes significant difference.

Table 2. Regression of precompetitive emotions on primary and secondary appraisal.

Emotion and process	Appraisal predictor	<i>F</i>	<i>R</i> ²	β	<i>T</i>
TIME 1					
Somatic (intensity)	Primary	7.87**	.32	.44	2.89**
	Secondary			-.55	-3.58***
Somatic (interpretation)	Primary	7.08**	.30	-.45	-2.89**
	Secondary			.51	3.29**
Cognitive (intensity)	Primary	8.06**	.33	.48	3.14**
	Secondary			-.53	-3.47**
Cognitive (interpretation)	Primary	2.70	.14	-.31	-1.80
	Secondary			.35	2.02
Self-confidence (intensity)	Primary	18.53***	.53	-.23	-1.76
	Secondary			.78	6.07***
Self-confidence (interpretation)	Primary	15.53***	.49	-.40	-2.98**
	Secondary			.73	5.47***
TIME 2					
Somatic (intensity)	Primary	2.80	.15	.13	.80
	Secondary			-.37	-2.30*
Somatic (interpretation)	Primary	1.49	.08	.14	.86
	Secondary			.23	1.39
Cognitive (intensity)	Primary	12.42***	.43	.20	1.53
	Secondary			-.65	-4.89***
Cognitive (interpretation)	Primary	2.66	.14	-.13	-.79
	Secondary			.36	2.24*
Self-confidence (intensity)	Primary	58.39***	.78	.02	.28
	Secondary			.88	10.70***
Self-confidence (interpretation)	Primary	16.70***	.50	.08	.62
	Secondary			.70	5.64***

p* < .05. *p* < .01. ****p* < .001.

68 for threat falling within the H3 category. Appraisal type did not predict exam result either at start-of-semester, $F(2, 33) = 2.17$, $p > .05$, or pre-recital, $F(2, 33) = 0.81$, $p > .05$.

Discussion

This study utilised a novel way to examine MPA in relation to a performance assessment/recital based on Lazarus' (1999) cognitive-motivational-relational theory. It adapted a concise and

valid measure of precompetitive appraisal developed to facilitate regulation of precompetitive emotions in intercollegiate team sport athletes (Wolf et al., 2015). Primary appraisals of perceived importance of the situation, and secondary appraisals of perceived prospects for successfully coping with situational demands, formed theoretically consistent and statistically robust clusters of threat and challenge perceptions regarding performance outcomes. Prior to an important end-of-semester performance, secondary appraisal was significantly lower than primary appraisal for students who viewed the performance as a threat, whereas such appraisals were slightly higher than primary appraisal for students who perceived the performance as a challenge.

Threat and challenge perceptions varied with anxiety, self-confidence and performance exam mark, and flagged the importance of secondary appraisal for emotion-related benefits prior to an important music performance. Students who viewed performance as a challenge reported significantly less pre-recital cognitive anxiety (such as worrying about performing poorly and choking under pressure), and significantly higher self-confidence both at the start of semester and pre-recital. They also evaluated confidence as significantly more facilitating to performance at both times. Self-confidence results were validated by self-efficacy judgements of students with a challenge profile being significantly higher in the hour before the recital. This may be explained by the change in context, given that self-efficacy refers to one's ability to successfully perform a specific task in a particular situation according to one's goal (Bandura, 2006; Pajares, 1997). Recital marks were higher for students who perceived the performance as a challenge, especially prior to the recital. Importantly, students who perceived the performance as a challenge achieved an average exam mark which was two award categories higher than those who perceived it as a threat.

A number of limitations prevented the identification of more robust results, including a small sample size and an over-representation of females. Nevertheless, our findings provide preliminary support for the PAM as a brief screening tool to identify students who may need support to regulate potentially destructive precompetitive emotions. These results suggest that musicians' performance anxiety may be moderated by building *control* and *accountability* in coping perceptions by focusing on four cognitive appraisals:

1. Mentally, I'm in control.
2. I'm taking full responsibility to prepare.
3. I have all the resources I need to cope.
4. I have what it takes to be successful.

This study provides the foundation for future investigations of performance teaching programs which address these cognitive coping appraisals, in order to assist students in higher music education settings manage debilitating performance anxiety whilst preparing for a performance. Studies may also evaluate the potential benefit for artists preparing to perform under pressure in other educational and professional contexts.

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Note

1. Despite the psychometric strengths of Kenny's (2011) Music Performance Anxiety Inventory (K-MPAI) as a measure of MPA, the K-MPAI was not applicable in this instance as our purpose was to replicate the design of the Wolf et al. (2015) study which used the CSAI-2R-D alongside the PAM.

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