

**PSYCHOLOGICAL FLEXIBILITY, MUSIC PERFORMANCE ANXIETY, AND
PERCEIVED PERFORMANCE QUALITY:
A CORRELATIONAL STUDY WITH UNIVERSITY MUSIC STUDENTS**

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ABSTRACT

Despite the pervasiveness of music performance anxiety (MPA) among musicians, the scientific literature on effective psychological interventions is relatively limited. While some MPA researchers regard cognitive-behavioral therapy (CBT) as the best suited psychotherapeutic option, others position acceptance and commitment therapy (ACT) as both a promising treatment for MPA and means of performance enhancement. A third-wave behavioral therapy, ACT stands apart from traditional CBT in that the treatment does not attempt to reduce symptoms, but rather aims to increase *psychological flexibility*: the ability to contact the present moment with full awareness and engage in values-congruent action, even if doing so elicits psychological discomfort. To better understand the utility of an ACT-based approach for MPA, the present study explored relations between psychological flexibility, music performance anxiety, and perceived performance quality among university music students. Results showed a significant positive relationship between psychological flexibility and performance quality and a significant inverse relationship between psychological flexibility and MPA. One facet of psychological flexibility, cognitive defusion, emerged as a significant predictor of both perceived performance quality and MPA. The findings build on existing evidence demonstrating the suitability of ACT as both a treatment for MPA as well as method of performance enhancement for musicians. Additionally, results provide support for emphasizing defusion processes within an ACT for MPA treatment approach. The study holds particular significance for the population of interest, university music students, who commonly seek out specific skills and strategies for enhancing performance outcomes and managing the effects of MPA.

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CHAPTER ONE

INTRODUCTION AND LITERATURE REVIEW

Music performance anxiety (MPA) is one of the most pervasive mental health concerns among both student and professional musicians, yet the scientific literature on effective psychological interventions remains relatively limited. Recognizing the paucity of empirically validated treatment options, a subset of MPA researchers recently began exploring the suitability of acceptance and commitment therapy (ACT) as both a treatment for MPA and as a method of performance enhancement. A third-wave behavioral therapy, ACT stands apart from other therapy interventions in that the treatment does not aim to reduce symptoms. Instead, the goal of ACT treatment is to enhance *psychological flexibility*: the ability to contact the present moment with full awareness and engage in values-congruent action, even if doing so elicits psychological discomfort (Harris, 2009). The study's investigator sought to advance this new line of inquiry regarding ACT-based treatments for MPA by investigating the relationships between psychological flexibility, music performance anxiety, and perceived performance quality among university music students. The study is also motivated by two pragmatic goals: assisting young adult musicians during a developmentally sensitive period and providing both music students and instructors with specific psychological tools for managing experiences of MPA and improving performance outcomes.

Music Performance Anxiety

Performance anxiety is a general term used to describe cognitive, behavioral, and/or physiological symptoms related to feared impairment of performance skills in a public context (Salmon, 1990). With its inclusion of social evaluative threat, performance anxiety may be

conceptualized as a subtype of social anxiety in which the perceived threat of scrutiny generates a state of fearful apprehension in the performer.¹ In the case of music performance anxiety (MPA), the debilitating effects may manifest independent of level of accomplishment or years of training (Kenny, 2009b). While earlier definitions of MPA included both pre-performance apprehension as well as actual impaired performance (Salmon, 1990), contemporary research shows that MPA symptoms “may or may not impair the quality of the musical performance” (Kenny, 2009b). Thus, MPA may best be understood on a spectrum that spans both facilitative and pathological presentations (Spahn, 2015).

To distinguish more problematic forms of MPA from proportional levels of pre-performance arousal, Juncos and de Paiva e Pona recommend assessing MPA across four symptom categories: (1) cognitive symptoms (e.g., worry, apprehension, narrowed attention onto perceived threats); (2) physiological symptoms (e.g., shallow breathing, heart palpitations, shaking, sweating, muscular tension); (3) behavioral avoidance (e.g., avoiding exposing performance situations, more challenging repertoire, etc.); and (4) subjective distress and/or occupational impairment (e.g., inability to meet job expectations) (2018, p. 1-2). Relative to milder presentations of MPA, severe MPA includes several symptoms across the four categories and aligns more closely with the criteria for the performance-only subtype of social anxiety disorder as outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)*.¹ The severity of MPA may also vary across performance situations, with the highest levels of MPA usually associated with high personal exposure (solo performances), direct or indirect assessment (e.g., the presence of a jury), fear of failure (e.g.,

¹ See the performance-only specifier for social anxiety disorder in the *DSM-5-TR* (American Psychiatric Association, 2022).

losing a competition), and high ego investment (e.g., the individual overidentifies with performance outcomes) (Kenny, 2011; Papageorgi & Welch, 2020; Spahn et al., 2016). More generally, Valentine (2002) asserts that the experience of MPA is influenced by three main factors: person, task, and situation. In this view, the degree of anxiety is informed by the dispositional characteristics of the performer, the difficulty of the task at hand, and the level of pressure within the performance context.

Prevalence of MPA

The absence of formalized criteria for MPA as a disorder may help explain why prevalence rates range widely among populations of musicians, with recent reviews estimating rates between 16.5 and 60% among professional musicians (Fernholz et al., 2019). For more severe forms of MPA, prevalence estimates are approximately 15–25% for professional musicians and 20–35% for collegiate musicians (Shaw, 2020), which aligns with research indicating that younger music students may be more prone to experience problematic forms of MPA compared to their older, professional musician counterparts (Steptoe & Fidler, 1987; Fernholz, 2019). Prevalence studies also show that the relationship between gender and MPA is consistent with rates for general anxiety, in which women are roughly twice as likely to experience anxiety compared to men (APA, 2022; Kenny, 2005).

Among genres of musical performance, research indicates that musicians from the Western classical music tradition experience more severe MPA than jazz or popular musicians (Papageorgi et al., 2013). In their discussion of performance anxiety across musical genres, Papageorgi and colleagues (2013) suggest that environmental factors such as the strict formality within Western classical music culture may evoke higher levels of pressure, thereby elevating

anxiety levels among classical musicians. Overall, MPA occurs irrespective of age, training, or level of experience, though Kenny (2005) notes that MPA is uncommon among young children. Research demonstrates that the highest predictors of MPA are gender and trait anxiety (Osborne & Kenny, 2008), with musicians' levels of MPA covarying with levels of dispositional trait anxiety (Cox & Kenardy, 1993).

Etiology: Triple Vulnerability Model of MPA

In conceptualizing the development of MPA, Kenny (2005) adopts Barlow's emotion-based model of anxiety (2000), which theorizes that anxiety disorders develop through a set of triple vulnerabilities: (1) a generalized biological (heritable) vulnerability; (2) a generalized psychological vulnerability based on formative experiences in developing a sense of control over events; and (3) a more specific psychological vulnerability in which anxiety is paired with certain environmental stimuli (via conditioning processes) (Barlow, 2000, p. 1247). Kenny extends the triple vulnerability model to the etiology of MPA by describing performers most at risk as those high in trait anxiety (generalized biological vulnerability), who come from high pressure environments with low emotional support (generalized psychological vulnerability), and who are exposed early to critical and competitive evaluations of performances (specific psychological vulnerability) (2005, p. 53). According to this model, performance anxiety may be understood as a defensive means by which to protect the individual against possible re-experiencing of painful emotions such as shame or humiliation. Prior to performance, anxiety may be triggered by cognitive, somatic, or environmental cues associated with performance situations, especially if the performer underwent repeated negative performance experiences during developmentally sensitive periods. Once previous experiences of MPA become activated,

the performer may readily shift into a self-evaluative state in which attention focuses on catastrophic cognitions or distressing physiological reactions, leading to the disruption of concentration and performance (Kenny, 2005).

Similar to other anxiety disorders, MPA typically emerges in early adolescence and stabilizes in severity by early adulthood (Cox & Kenardy, 1993; Ryan, 2005). The level of MPA also tends to increase among young musicians who undergo rigorous training and more “technically demanding performances” (Osborne, Kenny, & Holsomback, 2005, p. 323). Thus, researchers posit two critical periods for the development of MPA: (1) adolescence, in which there is increased psychological vulnerability (Osborne & Kenny, 2008), and (2) vocational training during emerging adulthood when musical examinations are frequent and the self-concept of a musician becomes crystallized (Spahn, 2015). Given that music students experience high rates of performance anxiety and commonly request support for managing MPA (Nascimento, 2013; Tamborrino, 2001; Williamon & Thompson, 2006), collegiate music schools may offer prime settings for implementing and refining formal MPA interventions. Further, as performance experiences during undergraduate training may play a significant role in the course of MPA development, addressing the needs of undergraduate music students early in their university education may be especially important for targeted prevention and intervention efforts.

Current MPA Interventions

Although numerous treatment approaches are cited in the MPA literature, there is limited evidence for an empirically validated MPA intervention using rigorous methodology. Recent reviews of intervention studies highlight the difficulty in drawing firm conclusions due to design limitations such as small sample sizes, lack of control groups, and weak outcome measures

(Matei, 2017). In response to these limitations in the current literature, Juncos and de Paiva e Pona (2018) call for future research efforts to adhere to the standards for evidence-based practice established by the APA Division 12 Task Force for the Promotion and Dissemination of Psychological Procedures (Chambless & Hollon, 1998). In 2018, Juncos and de Paiva e Pona noted that only one empirically reviewed treatment for MPA—cognitive-behavioral therapy (CBT) with exposure—met the aforementioned standards and suggested that this may be the reason leading MPA researchers consider CBT as best practice (Kenny, 2011).

A recent systematic review of treatment procedures for MPA (Fernholz et al., 2019) showed that the two most studied treatments were CBT and the use of beta-adrenoceptor blocking medications (“beta-blockers”), with CBT generating the most evidence for significantly reducing mild to moderate MPA symptoms. However, the authors advise caution in the interpretation of these findings, noting that additional studies with sufficient controls are needed to clarify the efficacy of CBT interventions. This conclusion aligns with those of previous reviews that show mixed findings for CBT interventions and highlight methodological weaknesses across studies including small sample sizes, unstandardized intervention delivery, lack of control groups, and discrepancies among chosen outcome measures (Burin & Osório, 2017; Matei, 2017). Beyond CBT, other therapy modalities for MPA include psychodynamic therapy for more severe presentations of MPA with depression (Kenny, 2016; Kenny, Arthey, & Abbass, 2014, 2016; Kenny & Holmes, 2015) and acceptance and commitment therapy (ACT; Clarke, Osborne, & Baranoff, 2020; Juncos & Markman 2016; Juncos et al., 2017; Juncos & de Paiva e Pona 2018; Shaw 2020). Currently, there is less research support for alternative MPA treatments (e.g., yoga, biofeedback, meditation, Alexander Technique, guided imagery)

compared to the evidence for psychotherapy or the use of beta-blockers (Juncos & de Paiva e Pona, 2018). The following section reviews limitations of leading interventions for MPA (namely, CBT and beta-blockers) to convey the current state of MPA intervention knowledge and practice as well as highlight ways in which other forms of therapy may more comprehensively address the needs of musicians.

Limitations of Leading Interventions

In their investigation of psychological well-being among orchestral musicians, Kenny, Driscoll and Ackermann (2012) found that beta-blockers are commonly used among professional musicians, with roughly 30% using the medication to reduce somatic MPA symptoms (e.g., palpitations, sweating, shaking). There is consensus among MPA researchers that low doses of beta-blockers (e.g., propranolol, nadolol) are effective in treating the somatic symptoms of MPA. However, MPA experts also acknowledge several limitations in this treatment approach. First, the use of beta-blockers is contraindicated for vocalists, woodwind, and brass instrumentalists as well as for musicians with existing heart conditions or breathing disorders such as asthma (Kenny, 2011). Additionally, researchers argue that beta-blockers offer limited assistance as the cognitive, behavioral, and affective symptoms of MPA are not addressed by medication alone (Clarke et al., 2020; Kenny, 2011; Spahn, 2015). In this view, beta-blockers may provide adequate temporary solutions for musicians who primarily experience physical MPA symptoms, whereas those with more severe or chronic presentations of MPA would benefit from a comprehensive treatment method that targets the underlying causal and maintenance factors of the disorder. Moreover, researchers caution against long-term regular use of beta-blockers for

MPA as this creates risk for unilateral reliance on the convenience of the drug and possible neglect of active treatment measures (Spahn, 2015).

Regarding the leading psychotherapy intervention for MPA, cognitive-behavioral therapy (CBT) currently holds the most empirical support of all treatment approaches, despite the aforementioned methodological limitations across MPA intervention studies. More recently, however, a subset of MPA researchers have opened a line of inquiry into the therapeutic benefit of cognitive restructuring, one of the main treatment techniques within CBT in which clients are taught to challenge or dispute “maladaptive” thoughts. These researchers cite the work of Teasdale and colleagues (2002), whose work on metacognitive awareness suggests that the act of *disengaging* from one’s thoughts may explain improvements in therapy more than altering actual thought content. This finding supports the theoretical paradigm of third-wave behavioral therapies such as acceptance and commitment therapy (ACT), in which the goal of treatment is not to change or eliminate unwanted symptoms but rather to foster acceptance of aversive thoughts and feelings while enhancing one’s ability to engage fully in meaningful life experiences.

Traditional cognitive-behavioral therapies operate within a “mastery and control framework” that supports the notion that anxiety and related symptoms may be mitigated through direct cognitive change (Eifert & Forsyth, 2005). Proponents of ACT, however, argue that anxiety itself is not inherently problematic and that direct cognitive change may not be essential for clinical improvement (Hayes et al., 2006). From an ACT perspective, problems of clinical significance are created through one’s method of *relating* to experiences of anxiety (e.g., negatively appraising somatic symptoms; attempting to control, avoid, or eliminate anxiety;

overidentifying with anxious thoughts). Research findings suggest that attempts to control or eliminate private events (e.g., thoughts, emotions, memories) can paradoxically exacerbate aversive experiences (Brooks, 2014; Eifert & Forsyth, 2005; Hayes et al., 2004); thus, exploration of other therapy approaches that teach musicians how to effectively navigate the experience of MPA is warranted. A burgeoning subfield of research suggests that ACT may be particularly well-suited to address MPA, given that ACT does not pathologize the experience of performance anxiety as something to fight, eliminate, or overcome. Instead, ACT may offer musicians facilitative methods of relating to their inner experiences while teaching psychological skills that promote effective performance experiences.

Acceptance and Commitment Therapy for MPA

Part of the movement of third-wave behavioral therapies, ACT emphasizes values clarification, mindful awareness, and acceptance of internal experiences. As described by Gardner and Moore (2007), the crux of acceptance-based therapies is that “the struggle to be without distress is the problem, not the presence of these thoughts and feelings” (p.73). In other words, acceptance-based therapies confront the desire to *control* thoughts and feelings, recognizing that these attempts often create more suffering in the long run and/or impede one’s ability to engage fully in meaningful life experiences. In ACT, clients are taught to adopt an open and nonjudgmental stance towards internal events so that thoughts, emotions, and sensations may be viewed as they are, as opposed to what the mind tells the client they are (e.g., aversive experiences to censure, eliminate, or avoid; Hayes, 2004). In doing so, the client may find that vital resources (time, energy, concentration) may be redirected toward valued pursuits that are clarified over the course of treatment.

In the case of MPA, ACT may focus on promoting nonjudgmental awareness and acceptance of anxious thoughts and bodily sensations that occur prior to and during performance. By allowing these experiences to come and go without wrestling with them, the musician may remain grounded in the present moment, as opposed to reliving the past or projecting into the future, and dedicate full attention to the task at hand. This ability to commit to valued action (i.e., the performance) despite the presence of discomfort is strengthened by clarifying and centering the meaning of the performance experience for the musician (e.g., “I am performing this recital to share music I love with friends and family members”). In sum, ACT does not view MPA symptoms as inherently problematic; rather, an ACT approach may allow the facilitative aspects of MPA, such as physiological arousal and heightened attention, to be harnessed for optimal performance experiences.

As previously stated, ACT makes no attempt to reduce symptoms of distress. Instead, the goal of ACT is to enhance *psychological flexibility*, or “the ability to be in the present moment with full awareness and openness to our experience, and to take action guided by our values” (Harris, 2009, p. 12), despite the presence of unwanted internal experiences. Paradoxically, increases in psychological flexibility are often accompanied by symptom reduction over the course of treatment, but ACT clinicians emphasize that these reductions should be regarded as “side benefits” of treatment and not the ultimate goal (Harris, 2009). Thus, in studies exploring ACT for treating musicians with MPA, psychological flexibility, opposed to the level of performance anxiety, is the primary variable of interest.

Psychological Flexibility and the ACT Hexaflex

Within the theoretical framework of ACT, psychological flexibility consists of six interrelated behavioral processes known collectively as the “ACT hexaflex” (see Figure 1). The facets of the hexaflex include the following: (i) acceptance of one’s experiences, (ii) cognitive defusion, (iii) self-as-context, (iv) contact with the present moment, (v) identification of values, and (vi) commitment to action consistent with values. The first three facets are mindfulness and acceptance processes; the latter three facets are commitment and behavior change processes.² In ACT, experiences of psychological distress are understood as non-pathological aspects of the human condition. Strategies related to each dimension of psychological flexibility are used to cultivate acceptance of aversive private experiences while increasing values-congruent action, with the ultimate goal of assisting the client in creating a rich and meaningful life. In short, psychological flexibility empowers clients to “open up, be present, and do what matters,” while navigating inevitable moments of psychological suffering (Harris, 2009, p. 10). Applied to the realm of musical performance, psychological flexibility can be understood as acceptance of the presence of anxiety, an ability to redirect attention to the present moment during performance, and persistence in one’s efforts towards musical development, despite challenges and setbacks.

Psychological flexibility is correlated with numerous positive outcomes such as increased well-being (Wersebe et al., 2018), increased social skills (Herbert et al., 2018), and performance enhancement across the domains of public speaking (Glassman et al., 2016), work (Bond & Bunce, 2003; Bond & Flaxman, 2006) and athletics (Gross et al., 2016; Josefsson et al., 2019). As musicians often seek reductions in MPA as a means to enhance overall performance quality

² Process descriptions are further detailed in Table 1. For a more comprehensive review of each hexaflex process, see the work of Hayes et al. (2006).

(Kenny, 2009a), these findings provide support for examining the relationship between psychological flexibility and performance quality outcomes among musicians. While a handful of recent studies have investigated the use of ACT in treating MPA, only one study included measurement of psychological flexibility that adequately assessed each facet of the ACT hexaflex, though in-depth analysis of facet-level changes at post-treatment were prohibited by the study's small sample (Clarke et al., 2020). Thus, in addition to exploring the relationship between global psychological flexibility and music performance quality, further investigation into the individual facets of psychological flexibility as predictors of performance outcomes may provide new and clinically useful insight for therapists using ACT to treat performance-anxious musicians. Namely, as clinical interventions are often time-limited in nature (especially at settings such as university counseling centers), knowledge of the most salient ACT hexaflex processes for MPA treatment may guide clinicians in treatment planning and assessment.

ACT for MPA: Empirical Support

A large body of literature has established ACT as an effective treatment for a wide range of psychological disorders including social anxiety disorder (Kocovski et al., 2013; Craske et al., 2014; Herbert et al., 2018), the disorder most similar to the diagnostic profile of MPA. A randomized control trial comparing ACT to CBT in the treatment of social anxiety disorder demonstrated no significant differences between interventions (Kocovski et al., 2013), and a meta-analysis of thirty-nine randomized control trials including ACT determined that the approach is equally effective in treating anxiety disorders as other established treatments, including CBT (A-Tjak et al., 2015). While Kenny (2011) deemed CBT with exposure as best practice in MPA treatment, Juncos and de Paiva e Pona argue that ACT may be an equally if not

more beneficial approach, noting that ACT became an established evidence-based treatment for social anxiety disorder in the years following Kenny's conclusion (2018, p. 5). On this issue, future research comparing ACT to CBT as a MPA treatment is still needed.

While studies comparing CBT and ACT for anxiety have revealed no significant differences in symptom reduction outcomes, ACT may be clinically advantageous for the treatment of MPA when considering other outcome variables of interest, such as behavioral performance. For example, research demonstrates that ACT is more effective than CBT in improving test performance (Brown et al., 2011), observer-rated public speaking skills (Block, 2002; Glassman et al., 2016), and observer-rated social skills (Herbert et al., 2018). Further, MPA treatment studies show that, while CBT with exposure effectively reduced MPA symptoms, the treatment did not promote significant improvements in music performance quality (Braden et al., 2015; Osborne et al., 2007).

To help explain these performance outcome differences, researchers comparing ACT and CBT treatments for public speaking anxiety (Glassman et al., 2016) and social anxiety disorder (Herbert et al., 2018) theorized that participants who received CBT may have taxed their working memory during performance tasks by engaging in cognitive restructuring, leading to decreased cognitive resources for the performance itself. Conversely, participants who received ACT may have conserved cognitive resources by *defusing* from anxious thoughts and directing focus towards values-congruent behavior. Glassman and colleagues (2016) also found that, during public speaking tasks, ACT participants showed decreased blood volume in regions of the brain involved in executive functioning (i.e., the left dorsolateral prefrontal cortex) while CBT participants showed increased blood volume in this region, leading the authors to conclude that

ACT processes may free more cognitive resources for skilled performance than traditional CBT skills. As noted by Juncos and de Paiva e Pona (2018), the cumulative results of the aforementioned studies provide strong rationale for investigating ACT not only as a clinical treatment for MPA, but also as a performance-enhancement method for all musicians.

To date, a handful of studies provide initial support for ACT as an effective MPA intervention. Juncos and colleagues have conducted single-subject experiments with a professional drummer (Juncos et al., 2014) and an undergraduate violinist (Juncos & Markman, 2016), and most recently ran a pilot study with seven collegiate voice students (Juncos et al., 2017). Across studies, ACT treatment was compared to individual baseline controls and participants showed significant improvement in one or more facet of psychological flexibility as well as reduced MPA symptoms at post-treatment and follow-up. Notably, every participant showed an enhanced ability to defuse from anxious thoughts during performance (i.e., participants became less reactive to cognitive MPA symptoms). Additionally, participants demonstrated increased performance quality at post-treatment as measured by independent judge ratings on the Music Performance Quality form (MPQ; Educational Testing Service, 1998) and reported subjective improvement in performance confidence (Juncos & Markman, 2016; Juncos et al., 2017). In light of these positive results, ACT currently stands as a promising MPA intervention for university music students (Juncos & de Paiva e Pona, 2018).

More recently, Australian researchers evaluated a group-based ACT intervention for MPA in student vocalists (Clarke et al., 2020), finding initial evidence for the utility of group ACT interventions among student populations. Beyond conventional ACT therapy interventions, Shaw and colleagues (2020) piloted a new model for treating MPA by training a voice faculty

member to use acceptance and commitment coaching (ACC) with a performance-anxious student. Findings from the pilot study suggest that skills and processes related to psychological flexibility are highly relevant to the demands of music performance and that non-clinicians (i.e., music teachers) can be trained to use ACT processes to better support their students. Taken together, these initial investigations into the utility of ACT in treating MPA provide support for further research examining the nature of the relationships between ACT hexaflex processes (psychological flexibility), music performance anxiety, and performance quality.

Purpose of the Present Study

Within the existing literature, relatively few studies have evaluated ACT as an intervention for musicians with MPA and no studies have examined the six facets of psychological flexibility as possible predictors of both music performance anxiety and perceived performance quality. The present study seeks to investigate relationships between these variables and explore which processes within the ACT hexaflex best predict desired performance outcomes among university music students. Results from the study may help inform intervention efforts for the target population and lay the foundation for future research efforts (e.g., an ACT-based intervention study tailored for music students). Given that collegiate music training is a critical developmental period for musicians and that young musicians commonly request support for managing the effects of music performance anxiety, the primary researcher sought to design a study that may provide practical and meaningful information for music students seeking to enhance their performance experiences.

In the current study, the researcher developed two a priori hypotheses. *Hypothesis 1:* There will be a positive linear relationship between global psychological flexibility (GPF) and

perceived performance quality (PPQ), such that students with higher levels of flexibility report higher quality performance outcomes. *Hypothesis 2:* There will be a negative linear relationship between GPF and MPA, such that students with higher levels of flexibility report lower levels of performance anxiety. Notably, as the theoretical framework of ACT regards symptom reduction (e.g., decreased MPA) as a side benefit of enhancing psychological flexibility, hypothesis 2 should be regarded secondary to hypothesis 1. Moreover, research suggests that performance quality should be the primary outcome variable of interest in music performance anxiety studies (Kenny, 2009a). If music students with higher levels of psychological flexibility report higher performance quality outcomes and lower levels of MPA, further investigation of ACT as a treatment and/or performance enhancement option for collegiate musicians would be justified.

Additionally, the researcher was interested in exploring which facets of psychological flexibility best predict both PPQ and MPA. Examining whether specific core processes of psychological flexibility (e.g., acceptance; defusion; present-moment awareness) are significant predictors of desired performance outcomes could help determine clinically useful factors to consider in the treatment of MPA, especially for brief intervention efforts in which some processes and skills must be prioritized over others. As no theoretical precedent suggests that one core process of psychological flexibility is more predictive than another, these follow-up research questions were exploratory in nature.

CHAPTER TWO

METHOD

Participants

To be eligible for the study, participants were required to be 18 years or older and currently enrolled as an undergraduate or postgraduate music student at the researcher's home institution, a mid-sized four-year public university located in the southeastern United States. The study included music students of any year of study, music degree program (e.g., music performance, music education, music minor), or instrument group (e.g., strings, brass, voice, etc.). Within the sample of recruited participants ($n = 27$; mean age = 20.89; $SD = 3$), 85.1% were undergraduate students and 14.8% were graduate students. 40.7% identified music performance as their primary area of study, 33.3% selected music education, 7.4% selected jazz studies, and 18.5% indicated other areas of study, including music theory/composition, music and culture, applied music, and unspecified degrees. Further sample characteristics including gender, race, and instrument group are provided in Table 2. The final sample for the study included 27 participants, amounting to roughly 10% of the music school population (including undergraduate and graduate students). Difficulty with recruitment yielded a small sample size, which constrained statistical power for the present study. However, the research committee deemed the sample as sufficient for conducting preliminary research, laying the foundation for future work with the population of interest.

Procedure

Data collection for the study occurred onsite at the School of Music and included three phases: (1) recruitment and informed consent, (2) naturalistic performance experience, and (3)

measures completion. To create a uniform performance experience that would serve as a stimulus for participants prior to measures completion, the primary researcher designed the study to include a “mock audition” simulating the format of a typical musical audition (e.g., for solos, orchestras, and other musical ensembles). The Institutional Review Board approved of the present study for human subjects (IRB # 21-06580-XM) and allowed for music student participants to be recruited using flyers, email announcements to music faculty members, verbal announcements to music classes, and recruitment posts on the School of Music Facebook group. The recruitment materials invited music students to participate in a “Mock Audition Research Study” in which participants would pre-select 1-3 minutes of musical repertoire and perform for a judge in a mock audition format. Though the presence of a judge figure was necessary in order to simulate the conditions of a typical musical audition, the researcher recruited confederates to serve in the role of the judge and participants were informed ahead of time that they would not be receiving any evaluative feedback.

During informed consent, the primary researcher described the study procedures and communicated the potential risks and benefits, emphasizing that participation was completely voluntary and that there would be no monetary payment or other forms of compensation. Participants who consented to be a part of the study were allotted a brief warm-up period and were then escorted to the mock audition room to perform their selected musical excerpt. To create a naturalistic audition experience, participants were encouraged to select repertoire that they deemed to be at least “moderately challenging.” Following the mock audition, participants received a paper-and-pencil questionnaire that required approximately 15-20 minutes to complete. Participants were instructed not to include any identifiable information (e.g., names)

on the questionnaire packet. The primary researcher collected questionnaire packets upon their completion and stored them in envelopes labelled with participant identification numbers to secure confidentiality.

Measures

Psychological Flexibility. Global and subscale psychological flexibility scores were measured using the Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs, Rogge, & Wilson, 2016). The MPFI is a 30-item self-report instrument designed to comprehensively assess the six dimensions of psychological flexibility as illustrated by the ACT hexaflex model: acceptance, present-moment awareness, self-as-context, cognitive defusion, values, and committed action. Scores for each dimension are assessed through five Likert-type items, ranging from 1 (Never True) to 6 (Always True), designed to assess engagement with ACT hexaflex processes over the past two weeks. For example, an item for cognitive defusion states, “I was able to step back and notice negative thoughts and feelings without reacting to them,” an item for present-moment awareness states, “I was attentive and aware of my emotions,” and an item for committed action states, “Even when I stumbled in my efforts, I didn't quit working toward what is important.”

The MPFI has demonstrated good construct, convergent, and discriminant validity, with findings distinguishing the construct of psychological flexibility from that of psychological distress (Landi et al., 2021; Rolffs et al., 2016). In the present study, the MPFI showed excellent internal reliability for the total scale ($\alpha = .94$) and acceptable to excellent reliability for the subscales (acceptance, $\alpha = .73$; present-moment awareness, $\alpha = .89$; self-as-context, $\alpha = .89$; defusion, $\alpha = .92$; values, $\alpha = .91$; committed action, $\alpha = .89$).

Music Performance Anxiety. Music performance anxiety was assessed with the Performance Anxiety Inventory (PAI; Nagel, Himle, & Papsdorf, 1989), a 20-item self-report instrument that assesses individual experiences of anxiety in musical performance situations. Adapted from the State-Trait Anxiety Inventory (STAI; Spielberger, 1983), the measure assesses cognitive, behavioral, and physiological components of music performance anxiety and captures both state anxiety (anxiety in response to a particular situation) and trait anxiety (general tendency towards anxious response). Notably, the PAI assesses the participant's experience with music performance anxiety in general, opposed to measuring anxiety in response to a singular event. However, developers of the measure state that the PAI is sensitive to fluctuations in MPA over time (such as changes in anxiety following therapeutic intervention) (Nagel, Himle, & Papsdorf, 1989). Items on the PAI are answered on a scale ranging from 1 (Almost Never) to 4 (Almost Always). For the purposes of the present study, parenthetical language was included in some of the items to enhance comprehension. For example, Item #11 "During recitals my hands sweat" was modified to "During recitals (or public performances) my hands sweat." The PAI is a widely used measure of music performance anxiety and typically produces high internal reliability values (Diaz, 2018; Farnsworth-Grodd, 2012; Nagel et al., 1989). In the present study, internal reliability for the measure was $\alpha = .87$.

Perceived Performance Quality. Perceived performance quality (PPQ) was measured by asking participants to rate (a) their satisfaction with the performance and (b) their perception of how the performance compared to their "best performance during practice" (Farnsworth-Grodd, 2012, p. 230). Both scales for PPQ were adapted from Farnsworth-Grodd's (2012) inventory for assessing music performance outcomes among collegiate music students. The Performance

Satisfaction scale contains two items assessing satisfaction—with the overall performance and with effort—and prompts participants to rank their experience of satisfaction on a scale ranging from 1 (Very Dissatisfied) to 7 (Very Satisfied). The Performance versus Practice scale contains 10 items related to varying aspects of musical performance (e.g., tempo, dynamics, articulation). The measure prompts participants to rate the quality of their performance on a scale ranging from 1 (Much Worse) to 7 (Much Better), in comparison to their best performance during practice. In the present study, subjective evaluations of performance quality were favored over the use of a third-party evaluator (such as a judge) as participant self-evaluations provide insight into the relative quality of performance quality at an individual level whereas third-party evaluations do not capture how the performance compares to the participant's baseline quality level. Further, third-party evaluations are susceptible to problems with inter-rater reliability as evaluations of performance quality can vary largely between judges. Preliminary analysis revealed questionable internal reliability for the Performance Satisfaction scale ($\alpha = .63$) and excellent internal reliability for the Performance versus Practice scale ($\alpha = .91$). In light of this discrepancy, the author of the present study chose to use scores for the Performance versus Practice scale as the sole measure of PPQ.

Demographic Information. A demographic survey was included at the end of the measures packet to gather the following information: age, gender, race/ethnicity, and mental health history. Mental health related questions pertained to the history of a diagnosed anxiety disorder and the prescribed use of anxiolytic medications (including beta blockers). Participants were also prompted to provide musical sample characteristics, including year of study, degree concentration, and instrument type.

Data Analysis

Statistical analyses were performed using Version 27 of the Statistical Package for Social Science (SPSS). Prior to testing hypotheses, influential observations were assessed following the procedures for DFBETA tests as outlined by Cohen et al. (2003), and no extreme scores were detected. A missing value for one participant item was replaced using EM Algorithm and Missing Values Analysis in SPSS. Means, standard deviations, and correlations among study variables were also calculated (see Table 3). Following preliminary analysis, two simple bivariate regressions were used to test the a priori hypotheses: global psychological flexibility will have (a) a positive linear relationship with perceived performance quality (PPQ) and (b) a negative linear relationship with music performance anxiety (MPA). To deconstruct various predictors of both PPQ and MPA and thereby enhance understanding of the significant relationships, two forward stepwise linear regressions were then conducted using the six subscale scores of the MPFI (facets of psychological flexibility: acceptance, present-moment awareness, self-as-context, defusion, values, and committed action). As no existing literature supported a hierarchical precedent for analysis (i.e., no theoretical models indicated that one facet of psychological flexibility would be more predictive of PPQ and MPA than another), stepwise regressions suited the exploratory nature of these analyses. Further, given that facets of psychological flexibility in the MPFI are moderately correlated, stepwise regression allowed for the minimization of multicollinearity. Predictor variables were added based on p values equal to or less than .05.

CHAPTER THREE

RESULTS

A priori Hypotheses

Hypothesis #1: There will be a positive linear relationship between global psychological flexibility (GPF) and perceived performance quality (PPQ). A Pearson correlation coefficient was computed to assess the linear relationship between GPF and PPQ. There was a significant positive correlation between the two variables, $r(25) = .391, p = .022$. Simple linear regression was used to test if GPF significantly predicted PPQ. The fitted regression model was as follows: $y = 14.95 + 5.31*(GPF)$. The overall regression was statistically significant ($R^2 = .153, F(1, 25) = 4.50, p = .044$), with GPF significantly predicting increases in PPQ ($\beta = 5.31, p = .044$).

Hypothesis #2: There will be a negative linear relationship between global psychological flexibility (GPF) and music performance anxiety (MPA). A Pearson correlation coefficient was computed to assess the linear relationship between GPF and MPA. There was a significant negative correlation between the two variables, $r(25) = -.498, p = .004$. Simple linear regression was used to test if GPF significantly predicted levels of MPA. The fitted regression model was as follows: $y = 75.97 - 6.98*(GPF)$. The overall regression was statistically significant ($R^2 = .248, F(1, 25) = 8.24, p = .008$), with GPF significantly predicting decreases in MPA ($\beta = -6.98, p = .008$).

Exploratory Examination of Predictors of PPQ and MPA

Two stepwise multiple regressions were conducted to identify possible predictors of PPQ and MPA using the six subscale scores of the MPFI (measures of psychological flexibility: acceptance, present-moment awareness, self-as-context, defusion, values, and committed action).

Predictor variables were added based on p values equal to or less than .05. Bivariate correlations between each subscale score and the outcome variables are provided in Table 3. The results of the regression indicated that one psychological flexibility measure, cognitive defusion, significantly predicted both perceived performance quality and music performance anxiety. Cognitive defusion (or simply, “defusion”) is conceptualized as the learned ability to observe or witness one’s private experiences (thoughts, images, memories) with a quality of detachment (Harris, 2009). In the context of music performance anxiety, defusion can be understood as the ability to disengage from unhelpful thoughts and feelings prior to and during performance.

In the first regression, the defusion score explained 24% of the variance ($R^2 = .24$, $F(1, 25) = 7.99$) and significantly predicted increases in perceived performance quality ($\beta = .49$, $p = .009$). The effect size of the first regression was medium to large ($f^2 = .319$). In the second regression, the defusion score explained 34% of the variance ($R^2 = .34$, $F(1, 25) = 13.06$) and significantly predicted decreases in performance anxiety ($\beta = -.59$, $p = .001$). The effect size of the second regression was large ($f^2 = .522$).

CHAPTER FOUR

DISCUSSION

Regarding the two main research questions of the study, results show (1) a significant positive relationship between global psychological flexibility (GPF) and perceived performance quality (PPQ) and (2) a significant inverse relationship between GPF and music performance anxiety (MPA). These findings both support the researcher's hypotheses and align with the theoretical principles of acceptance and commitment therapy, which view psychological flexibility as a means of enhancing engagement in values-congruent action. Exploratory analyses indicated that one facet of psychological flexibility, defusion, significantly predicted both increases in PPQ and decreases in MPA. These findings suggest that defusion, or the ability to disengage from unhelpful thoughts and feelings prior to and during performance, is a performance-enhancing skill that should be emphasized in future MPA interventions.

In support of hypothesis 1, results show that students with higher levels of psychological flexibility reported higher quality performance outcomes. Although this finding is only correlational, the positive relationship aligns with findings from empirical ACT for MPA studies in which improvements in performance quality followed increases in psychological flexibility at post-treatment (Juncos & Markman, 2016; Juncos et al., 2017). In the context of previous studies, the relationship found in the present study supports the rationale to increase psychological flexibility in order to strengthen performance skills among university music students. Notably, while musicians are trained to be analytic and critical in the practice room, they require a separate set of mental skills for performance itself, during which mental judgments (e.g., labeling sounds as “good” or “bad”) become distracting rather than helpful. In this regard,

advanced-level musical performance involves skills closely related to the ACT hexaflex processes: successful performance requires the musician to remain focused on the present-moment task, disengage from mental chatter, and respond flexibly to situational stressors while committing fully to their musical intentions (i.e., performance values). In sum, music performance skills are akin to multiple facets of psychological flexibility and may be readily targeted through hexaflex exercises within an ACT for MPA protocol.

In support of hypothesis 2, results from the present study show that students with higher levels of psychological flexibility reported lower levels of music performance anxiety. This finding is congruent with results from empirical ACT for MPA studies in which musicians experienced significant decreases in MPA following ACT treatment (Clarke et al., 2020; Juncos & Markman, 2016; Juncos et al., 2017). With adherence to the theoretical principles of ACT, authors across ACT for MPA studies emphasize that, although symptom reduction is not the goal of treatment, decreases in symptom severity commonly follow increases in psychological flexibility; thus, decreased MPA should be regarded as a “side benefit” in ACT for MPA protocols. By nature of the task, music performance situations, and especially those involving high personal stakes or evaluative threat, commonly elicit psychological discomfort for performers irrespective of experience or level of training (Kenny, 2009b). The presence of MPA symptoms may therefore be conceptualized as a non-pathological experience that is at times proportional to the situational stressor. As discussed by leading ACT clinicians (Harris, 2009; Hayes, 2006), attempts to eliminate or control unwanted private experiences (e.g., thoughts, emotions, memories, or sensations) are often both distracting and futile. Therefore, within the

context of music performance, increasing psychological flexibility presents a more workable strategy for musicians who seek methods of managing the full spectrum of MPA experiences.

In the present study's exploratory analysis of the six facets of psychological flexibility, cognitive defusion emerged as a strong predictor of both PPQ and MPA. This finding regarding the power of defusion to predict increases in performance quality and decreases in MPA supports previous research investigating ACT for MPA. In two intervention studies, all seven music student participants demonstrated significant increases in cognitive defusion, significant increases in performance quality, and significant decreases in MPA symptoms (Juncos & Markman, 2016; Juncos et al., 2017). The inverse relationship between defusion and MPA in the present study also aligns with research showing that university music students with higher levels of trait mindfulness experience lower levels of performance anxiety (Diaz, 2018). Third-wave therapies such as ACT that specialize in helping clients learn mindfulness-based skills (such as cognitive defusion) may therefore be well-suited to help musicians who seek to manage MPA experiences. Although some participants in ACT for MPA studies strengthened multiple dimensions of psychological flexibility over the course of treatment (Juncos & Markman, 2016; Juncos et al., 2017), defusion emerged as the sole significant predictor of PPQ and MPA in the present study. As such, it is worth considering whether defusion translates more directly to the demands of skilled performance relative to other hexaflex processes, or if alternative explanations (e.g., statistical constraints) may account for this finding.

Utility of Cognitive Defusion

As described by Harris (2009), cognitive defusion is the learned ability to observe one's inner experiences without becoming "entangled" with them. Harris elaborates that, in a state of

fusion (the opposite of defusion), a thought can be experienced as the absolute truth, a command to obey, something that requires all of one's attention, or a threat to eliminate as soon as possible. For example, in the context of music performance, fusion can be experienced as getting "caught up" in MPA-related thoughts, memories, or images (e.g., "I can't stop shaking. I sound horrible. What if I drop my instrument? Everyone knows I'm the worst."). Attempts to control or eliminate these fears may then consume the musician's attention, leading to the occurrence of performance errors (e.g., missing an entrance; having a memory slip). Conversely, defusion allows one to become "less reactive to unwanted internal experiences" by creating separation between the experience and the "observing self" (Juncos and de Paiva e Pona, 2018, p. 5). In other words, defusion allows an individual to witness thoughts without becoming "fused" with the narrative of the anxious mind. To provide an example, one defusion technique requires the participant to preface thoughts with the phrase, "I'm having the thought that...", which encourages separation between the thought itself and the *witness* to the thought. In a state of defusion, thoughts do not dominate one's attention or chosen behaviors, but are regarded simply as a series of words and pictures that are allowed to come and go, enabling the individual to remain present and engaged with the task at hand (Harris, 2009).

One possible explanation regarding defusion emerging as a significant variable in the present study is that defusion processes are more readily applicable to the context of skilled performance than the other dimensions of psychological flexibility. Moreover, the present study did not involve an ACT for MPA intervention, and thus the hexaflex processes as represented in the MPFI were not tailored for the target population (e.g., values were not clarified within the context of music performance). Although dimensions of psychological flexibility are

interconnected and support one another (Harris, 2009; Hayes, 2006), the findings suggest that strengthening cognitive defusion may be particularly useful for musicians who seek to manage the effects of MPA and ultimately enhance performance. This conclusion is supported by the work of Juncos and de Paiva e Pona (2018), who theorize that “by mindfully observing MPA symptoms and defusing from what their minds tell them about their symptoms, a musician becomes more accepting of and less reactive to those symptoms” (p. 8). While ACT for MPA protocols should pay adequate attention to all six facets of psychological flexibility over the course of treatment, skills related to defusion may warrant particular emphasis, especially within brief or time-limited interventions in which exercises and treatment goals are prioritized.

Implications for Clinical Practice

The findings are congruent with existing evidence supporting the use of ACT for treating MPA in university student populations. Results from the present study may be taken into consideration when conducting individual or group therapy with musicians and when designing clinical outreach efforts for music programs. For example, in addition to providing psychoeducation on MPA and performance enhancement, clinicians may consider integrating ACT-based processes (such as experiential defusion exercises) into workshops for university music students and faculty. Prior research suggests that the ACT hexaflex processes are trainable outside of the context of therapy and that music faculty (in addition to mental health professionals) may facilitate the strengthening of psychological flexibility for music students (Clarke et al., 2020). Thus, ACT may offer an accessible means of addressing the needs of young musicians and bolstering the expertise of music faculty relative to other psychological interventions.

Clinicians unfamiliar with common practice within performing arts communities should note that many professional musicians are likely knowledgeable of certain mindfulness-based skills for performance, in part due to the influence of popular sports psychology authors such as Don Greene and Timothy Gallwey.² This familiarity with mindfulness skills training arguably places ACT in an opportune position for acceptance within collegiate music programs, as the present study findings supporting the use of mindfulness skills (i.e., cognitive defusion) converge with contemporary wisdom within music communities on how to address performance anxiety. While musicians may be familiar with useful strategies to enhance performance and manage MPA, the integration of ACT-based scientific knowledge and practice offers conceptual clarity and provides musicians with concrete exercises and skills that are grounded in a specific psychological theory. Moreover, existing strategies that musicians use to manage MPA—especially those reminiscent of behavioral therapy such as the use of exposure, performance fear hierarchies, visualization, and grounding skills—may be easily integrated into ACT for MPA protocols. Finally, ACT also emphasizes commitment processes that have been shown to increase musicians’ participation in values-congruent behavior such as performing more regularly or auditioning for solos (Juncos et al., 2016; Shaw et al., 2020).

For ACT clinicians working with musicians, the data contribute a clearer understanding of the relevance of psychological flexibility to the realm of music performance, with cognitive defusion standing out as the most salient hexaflex process to target over the course of treatment. In settings where treatment options are brief or time-limited (such as university counseling centers), clinicians could utilize measurements of psychological flexibility (e.g., the MPFI) as an

² See *Performance Success* (Greene, 2002); *The Inner Game of Tennis* (Gallwey, 1974).

assessment tool and consider whether strengthening cognitive defusion should be prioritized as a treatment goal. Additionally, ACT provides a conceptual framework for clinicians working with both mild and more severe presentations of MPA. Regardless of symptom severity, clinicians using an ACT-based approach should note that, because symptom reduction is not the goal of therapy, proper assessment of performance-relevant values is a critical process in setting the course of treatment. For example, by clarifying what they find to be most personally meaningful or important about performances, clients might shift their focus to behavior that aligns with performance values, rather than spending energy attempting to control MPA-related symptoms (Juncos & de Paiva e Pona, 2018, p. 10). Further, because performance values are not the same as performance goals, musicians with increased psychological flexibility may be better able to persist in the direction of their values even when performances do not meet personal standards. Hence, targeting psychological flexibility may also help cultivate resilience, self-compassion, and a larger perspective for the demanding field of music performance.

Limitations and Considerations for Future Research

There are several limitations to consider within the present study. Primarily, difficulty with study recruitment resulted in a small sample size, which restricted the researcher's ability to control for confounding variables (e.g., gender) or determine any other meaningful group distinctions during data analysis. Additionally, given that music student participants were volunteers and not incentivized by compensation, self-selection bias is possible. Further, the study's correlational design precludes the researcher from drawing any conclusions regarding directionality between variables. As such, an alternative explanation for the findings is that participants who report higher performance quality and lower music performance anxiety could

be reporting higher psychological flexibility because they have higher levels of self-efficacy with performance outcomes (i.e., lower MPA and/or higher PPQ allows for higher psychological flexibility). However, previous experimental research such as the studies conducted by Juncos and colleagues (2014, 2016, 2017) included evaluations of psychological flexibility, performance quality, and MPA at two time points (pre- and post-treatment), demonstrating that increases in performance quality and decreases in MPA followed increases in psychological flexibility. Therefore, the alternative explanation for findings in the present study is unlikely.

Despite statistical constraints on power due to the small sample size, the strength of cognitive defusion in predicting both increases in PPQ and decreases in MPA suggests that the findings would remain significant with a larger sample. Further, the present study may be regarded as a preliminary project that provides the grounds for more comprehensive research efforts with the target population. The researcher intends to disseminate research findings to local university music students (e.g., via presentations and workshops) to provide students with meaningful information and facilitate a reciprocal relationship between the music and psychology programs at the host institution.

Regarding continued research efforts in this area, future projects should consider including a performance task that may elicit higher levels of anxiety than the mock audition experience of the present study. For example, projects might utilize end-of-semester jury examinations or ensemble auditions, which could potentially produce a more robust sample size and enhance internal validity. Additionally, future research could improve upon the current study by including both subjective evaluations and third-party assessments of music performance quality (e.g., by obtaining juror ratings of performances), which could allow for more

comprehensive assessment of performance outcomes and thereby yield the most reliable and valid results. Although the Performance versus Practice scale included in the current study appeared to provide an adequate assessment of perceived performance quality, the Performance Satisfaction scale items lacked internal reliability and were ultimately excluded. Finally, the results of the present study may inform the development of future ACT for MPA intervention studies with university music students. As there is a dearth of literature comparing ACT to CBT for MPA treatment, one possibility is to implement an intervention study with two treatment groups and assess for changes in perceived performance quality and MPA at post-treatment. Such a study should also measure changes in psychological flexibility and include an anxiety-inducing performance task at pre- and post-treatment.

CHAPTER FIVE

CONCLUSION

The present study explored relationships between psychological flexibility, perceived performance quality, and music performance anxiety among university music students. The study is also the first to explicitly deconstruct the six facets of psychological flexibility to investigate predictors of both perceived performance quality and music performance anxiety. Results showed a significant positive relationship between psychological flexibility and performance quality and a significant inverse relationship between psychological flexibility and MPA. The findings build on existing evidence demonstrating the suitability of ACT as both a treatment for MPA and a means of performance enhancement for musicians. Following exploratory analysis of the facets of psychological flexibility, cognitive defusion emerged as a significant predictor of both PPQ and MPA. The findings fit with existing knowledge regarding the utility of cognitive defusion in the context of music performance and provide additional support for emphasizing defusion processes within an ACT for MPA treatment approach. Overall, these study findings hold particular significance for the population of interest, university music students, who commonly seek out concrete skills and strategies for enhancing performance outcomes and managing the effects of MPA. Instead of targeting symptom reduction, clinicians working with music students on performance or MPA-related concerns may consider strengthening psychological flexibility as a means of enhancing mindfulness and acceptance-based skills and values-congruent performance behaviors, thereby promoting higher quality performance experiences with or without the presence of anxiety.

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APPENDIX

Table 1. Facets of Psychological Flexibility: The Six Core Processes of ACT

Facet	Description
Acceptance	“Open up.” Allowing for the presence of aversive private experiences (e.g., unwanted feelings, sensations, urges, and emotions).
Present-moment awareness	“Be here now.” Consciously connecting with the present moment.
Self-as-context	“Pure awareness.” Cultivating a transcendent sense of self (i.e., an “observing self”) that is defined more by context than by the content of one’s internal experiences.
Defusion	“Watch your thinking.” Creating separation between the observing self and cognitions (e.g., thoughts, images, memories).
Values	“Know what matters.” Values are chosen qualities of meaning and importance to an individual. Values clarification informs and guides ongoing committed action.
Committed Action	“Do what it takes.” The ability to take effective action guided by values, even if doing so elicits psychological discomfort.

Note. Descriptions of core processes are adapted from *ACT Made Simple* (Harris, 2009).

Table 2. Demographic and Musical Sample Characteristics

	Total	Percentage
Gender		
Female	11	40.7%
Male	16	59.3%
Race/ethnicity		
Asian/Asian American/Pacific Islander	3	11.1%
Black/African American	2	7.4%
White/European	22	81.5%
Year of study		
1st year	9	33.3%
2nd year	9	33.3%
3rd year	4	14.8%
4th year	1	3.7%
Graduate	4	14.8%
Degree concentration		
Music performance	11	40.7%
Music education	9	33.3%
Jazz studies	2	7.4%
Other	5	18.5%
Instrument group		
String	7	25.9%
Brass	5	18.5%
Woodwind	5	18.5%
Voice	6	22.2%
Piano/percussion	3	11.1%
Unknown	1	3.7%

Table 3. Descriptive Statistics and Correlations for Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	a	b	c	d	e	f
1. PPQ	36.76	10.69	—								
2. MPA	47.30	11.02	-.44*	—							
3. Global PF	4.11	0.77	.39*	-.50**	—						
a. Acceptance	3.63	0.91	.32	-.29	.71**	—					
b. Present awareness	4.23	1.01	.21	-.15	.58**	.69**	—				
c. Self-as-context	4.33	1.16	.25	-.41*	.82**	.34*	.22	—			
d. Defusion	3.23	1.24	.49**	-.59**	.83**	.50**	.30	.65**	—		
e. Values	4.60	0.93	.15	-.27	.79**	.38*	.30	.73**	.60**	—	
f. Committed action	4.64	1.03	.27	-.48**	.75**	.32	.19	.67**	.58**	.55**	—

* $p < .05$. ** $p < .01$.

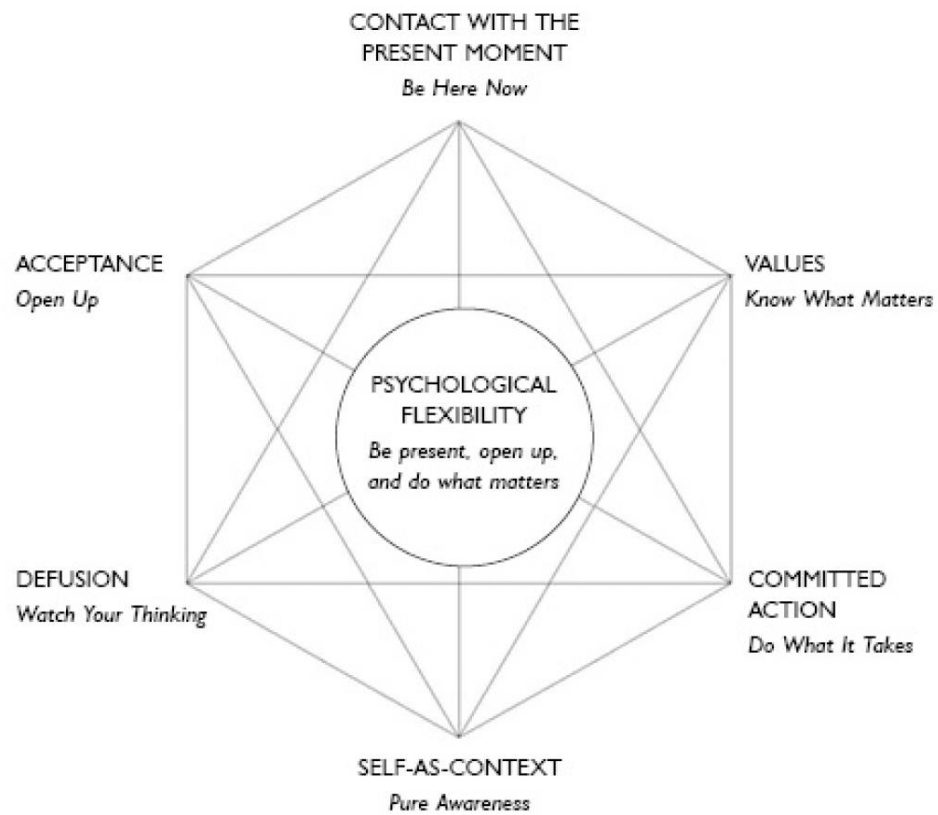


Figure 1. The ACT Hexaflex

Note. This model of psychological flexibility is from *ACT Made Simple* (Harris, 2009).

VITA

A Counseling Psychology Ph.D. student at the University of Tennessee, Tracy Viator's primary research interests include psychological flexibility and musicians' health and wellness issues. With nineteen years of classical music training, Tracy earned a B.M. and M.M. in violin performance and operated a personal private lesson studio before transitioning into the field of psychology. Currently integrating her musical expertise with her clinical interest in third-wave therapies, she seeks to develop ACT-based psychological resources for student musicians, with intentions to build a clinical practice as a licensed psychologist and provide outreach services to local performing arts communities post-graduation. In her spare time, Tracy finds joy hiking in the mountains and cooking vegetarian cuisine.