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Research on the current situation of college students' anxiety about music performance

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Abstract

This paper focuses on researching the performance anxiety experienced by college students. It identifies the causes and effects of performance anxiety by reviewing relevant literature. The study utilizes the Kenny Music Performance Anxiety Scale in the form of a questionnaire to investigate music performance anxiety among college students. Additionally, SPSS is applied to analyze the potential correlation between college students' music performance anxiety levels and their music experience. The questionnaire data shows good credibility and analysis reveals differences in music performance anxiety based on college students' majors, ages, music experience, and personalities. The correlation analysis shows a negative correlation between music education duration and general psychological vulnerability, but not with specific cognitive aspects of music performance.

Keywords

Music performance anxiety; psychology; music education; college students.

1. Introduction

Music performance anxiety (MPA) is a term that describes the significant and persistent psychological stress or worry experienced by individuals concerning musical performances. It typically encompasses a combination of emotional, cognitive, somatic, and behavioral symptoms during musical learning or performances (Kenny, D. T., 2010). Recent studies have indicated that the prevalence of MPA among music learners and performers is uncertain, with some studies estimating the rate to be between 15% and 25% (Steptoe, A., 2001).

Zhou Haihong's "Research on Stage Fright" focused on 808 college students majoring in music from the Central Conservatory of Music, Wuhan Conservatory of Music, and Hubei Normal University, making it the most extensive survey on stage fright among music students in China. The study included an analysis of stage fright perception, coping strategies, and the causes of stage fright. The findings revealed that 44.9% of respondents reported experiencing stage fright, with 8.4% indicating severe stage fright. The analysis of environmental factors influencing stage fright encompassed the impact of parents' and teachers' attitudes. The increasing pace of life and growing societal focus on mental health have led to the development of various therapeutic approaches in China, such as psychological counseling and music therapy, which have shown effectiveness in alleviating symptoms of musical performance anxiety. Furthermore, both domestic and international scholars have conducted detailed studies on the causes and effects of music performance anxiety, indicating the significance of discussing the current situation of music performance anxiety among college students.

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2. Literature review at home and abroad

2.1. Main Factors Affecting Musical Performance Anxiety

Various studies have identified genetic, cognitive, and social factors as the primary influences on performance anxiety. Some researchers suggest that individuals with trait performance anxiety exhibit identifiable genetic and neurophysiological markers (Domschke & Dannlowski, 2010). There is also evidence indicating a link between genes and childhood experiences of depression, shyness, and embarrassment (Osborne, M. S. & Franklin, J., 2002). Regarding cognitive factors, it has been proposed that those with performance anxiety may struggle with processing social information and perception due to cognitive deficits (Hampel, S. et al., 2011). Additionally, interactions with strangers may reveal a negative correlation between motivation and anxiety levels in individuals with performance anxiety (Samochowiec, J. & Florack, A., 2010). Socially, musical performance anxiety has been categorized as a subtype of social anxiety disorder, with social anxiety disorder serving as a significant predictor of musical performance anxiety (Barbar et al., 2014). Those with high musical performance anxiety often exhibit decreased confidence in social interactions, underestimate their performance, and anticipate negative outcomes (Wray, L. D. & Stone, E. R., 2005). In interpersonal communication, individuals with high musical performance anxiety may display traits such as diminished self-confidence, susceptibility to external influence, and a tendency toward compliance with others (Arndt, J. et al., 2002). They may also have low self-esteem and a negative self-image, leading to reduced motivation in social situations (Rosenberg, M. et al., 1989). Lastly, poor emotional regulation skills have been observed in individuals with high musical performance anxiety (Campbell-Sills et al., 2011).

2.2. Treatment of performance anxiety at home and abroad

Research on musical performance anxiety in domestic settings emerged in the mid-late 1980s, initially focusing on the impact of stage tension on musicians. Notable discussions were led by Zhang Guilin, Ma Wenbiao, and Wang Tianbing, with Zhang Hongyi pioneering treatments using systematic desensitization and intentional training for music performance anxiety. Wang Tianbing introduced the nervous system's reaction mechanism to stage tension and the corresponding behavioral therapy. Gao Tian applied psychoanalytic methods and desensitization training to address anxiety in music performance. Additionally, the Earworm technique, utilizing involuntary musical imagery, has shown promise in alleviating performance anxiety. Research from Tsinghua University investigated the neural signals associated with the earworm phenomenon, with Gao Tian utilizing earworm technology to intervene in negative emotions during the epidemic period, yielding significant results.

The exploration of music performance anxiety has a rich history dating back to the 1960s and 1970s and has been the subject of extensive empirical research in recent decades. Numerous studies have underscored the efficacy of group music therapy in reducing performance anxiety by providing participants with unwavering support and acceptance in a secure setting. A study conducted by Kim compared the effectiveness of improvisation techniques in music therapy with systematic desensitization, yielding promising results for both approaches. Additionally, the use of Guided Imagery and Music (GIM), a form of musical psychotherapy, has been instrumental in aiding individuals' inner growth and transformation. Moreover, music-directed imagery has been utilized to address musical performance anxiety, offering a psychodynamic approach to exploring musicians' childhood memories and emotions related to musical learning and performance.

2.3. Existing literature reviews

The current literature, both domestic and international, highlights the inadequate attention given to music performance anxiety within our country. Existing research mostly consists of

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literature reviews, lacking comprehensive insights into the practicalities and current state of music performance anxiety in alignment with China's national circumstances. Thus, a thorough investigation into the domestic landscape of music performance anxiety is certainly warranted. Furthermore, there is a scarcity of research on music performance anxiety globally, with a predominant focus on trait and state anxiety as well as social cognition. It is imperative to examine whether music performance anxiety presents similar challenges as other psychological conditions, necessitating broader research efforts.

3. Methods

3.1. Participants

The sample consisted of 207 college students gathered in July 2024. Among them, 141 were music majors (68.12%) and 66 were non-music majors (31.88%). There were 104 males (50.24%) and 103 females (49.76%).

3.2. Materials

The students utilized the Kenny Music Performance Anxiety Inventory (K MPA, 2009), which is a music performance anxiety rating scale developed by Professor Kenny, an Australian scientist. The scale was revised and adapted for Chinese culture by Sun Yue from Shaanxi Normal University in 2020. It comprises 40 items rated on a seven-point scale, ranging from 0 (completely inconsistent) to 6 (completely consistent). The scale encompasses three dimensions: Early Relationship Context(ERC), General Psychological Vulnerability(GPV), and Commitment to Performance(CP). The Cronbach's alpha coefficient for the scale was 0.916. Notably, items 9,10,11,12,21,35,44,and 45 involved reverse scoring. The reliability, difference, and correlation analyses were conducted using SPSS data analysis software.

3.3. Abbreviation comparison table

Table 1. Abbreviation comparison table

Regular	Abbreviation
Early Relationship Context	ERC
Generational Transmission of Anxiety	GTA
Parental Empathy	PE
General Psychological Vulnerability	GPV
Psychological Vulnerability	PV
Controllability	Con
Trust	Tru
Pervasive Performance Anxiety	PPA
Commitment to Performance	CP
Proximal Somatic Anxiety	PSA
Negative Cognitions	NC
Pre- and post-performance Rumination	PR
Self/other Scrutiny	SS
Opportunity Cost	OC
Memory	Mem

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4. Procedure

4.1. Reliability analysis

In the reliability analysis, the results indicated that Cronbach's Alpha values for Early Relationship Context (ERC), General Psychological Vulnerability (GPV), and Commitment to Performance (CP) were 0.936, 0.862, and 0.741, respectively. All of these values exceeded 0.7, demonstrating strong reliability for the scales used in this study. Table 2 lists the parameters.

Table 2. Reliability analysis of the Kenny Music Performance Anxiety Scale

Dimension	Cronbach's Alpha	N of Items
ERC	0.936	6
GPV	0.862	13
CP	0.741	21

4.2. Difference analysis

4.2.1. The difference analysis of gender in each dimension

The results indicate that the significance of gender in the Early Relationship Context(ERC), General Psychological Vulnerability(GPV), Commitment to Performance variables(CP), and their secondary dimensions were all greater than 0.05. This implies that there is no statistically significant difference in gender scores among the mentioned variables/dimensions. Table 3 lists the parameters.

Table 3. The difference analysis of gender in each dimension

Dimension	Gender(M±SD)		F	P
	Female(N=103)	Male(N=104)		
ERC	3.11±1.72	3.16±1.78	0.047	0.828
GTA	3.18±1.70	3.15±1.87	0.015	0.902
PE	3.03±1.85	3.17±1.79	0.289	0.592
GPV	3.02±1.23	3.02±1.21	0.001	0.982
PV	3.14±1.24	3.13±1.21	0.000	0.996
Con	2.61±1.93	2.75±1.91	0.302	0.584
Tru	2.79±2.03	2.80±2.10	0.001	0.979
PPA	3.01±2.03	2.77±2.04	0.733	0.393
CP	2.86±0.80	2.97±0.81	0.922	0.338
PSA	2.82±1.13	2.94±1.21	0.609	0.436
NC	2.79±1.14	2.99±1.01	1.795	0.182
PR	3.05±0.81	3.00±0.66	0.217	0.642
SS	2.92±0.98	2.95±0.95	0.055	0.814
OC	2.86±2.01	3.00±1.83	0.292	0.590
Mem	2.94±1.96	2.95±1.86	0.001	0.973

4.2.2. The difference analysis of major in each dimension

The findings indicate that within the Early Relationship Context of the major, the variables such as General Psychological Vulnerability and Commitment to Performance, along with their respective sub-dimensions, all demonstrate statistical significance at a level of less than 0.05. This suggests that there are noteworthy differences in the scores of majors across these variables. Specifically, students in Non-music-related majors scored lower than those in Music-

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related majors in Pre and Post-Performance Rumination. However, in the Early Relationship Context of Non-music-related majors, Generational Transmission of Anxiety, Parental Empathy, Psychological Vulnerability under General Psychological Vulnerability, Controllability, Trust, Pervasive Performance Anxiety, Commitment to Performance variables Proximal Somatic Anxiety, Negative Cognitions, Self/Other Scrutiny, Opportunity Cost, and Memory exhibit higher scores compared to Music-related majors. Table 4 lists the parameters.

Table 4. The difference analysis of major in each dimension

Dimension	Major(M±SD)		F	P
	Music-related majors(N=114)	Non-music-related majors(N=66)		
ERC	2.86±1.73	3.72±1.65	11.428	0.001
GTA	2.90±1.76	3.74±1.71	10.558	0.001
PE	2.82±1.81	3.69±1.70	10.856	0.001
GPV	2.77±1.21	3.54±1.06	19.765	0.000
PV	2.95±1.25	3.53±1.07	10.485	0.001
Con	2.30±1.83	3.48±1.86	18.574	0.000
Tru	2.43±2.06	3.56±1.84	14.355	0.000
PPA	2.47±1.97	3.79±1.89	20.683	0.000
CP	2.76±0.79	3.25±0.73	18.732	0.000
PSA	2.70±1.15	3.26±1.14	10.629	0.001
NC	2.72±1.05	3.25±1.06	11.280	0.001
PR	3.11±0.72	2.86±0.76	4.929	0.028
SS	2.83±1.01	3.15±0.83	4.968	0.027
OC	2.66±1.86	3.50±1.92	8.964	0.003
Mem	2.61±1.90	3.66±1.72	14.389	0.000

4.2.3. The difference analysis of the years of learning music in each dimension

The findings indicate that several variables, including Years of Study in the Early Relationship Context, General Psychological Vulnerability, Commitment to Performance, Proximal Somatic Anxiety, and Memory, all have a statistical significance of less than 0.05. This suggests that there are notable differences in the scores of these variables. Particularly, students with 1-3 years of study in general psychology show higher scores in Generational Transmission of Anxiety, Psychological Vulnerability, Controllability, Trust, and Commitment to Performance. Additionally, students who have studied for 1 year exhibit higher scores in Parental Empathy, Pervasive Performance Anxiety, Commitment to Performance, and Proximal Somatic Anxiety. Table 5 lists the parameters.

Table 5. The score of years of study in the above variables

Dimension	Number of years studying music(M±SD)					F	P
	1year (N=16)	1-3years (N=38)	3-5years (N=83)	5-8years (N=69)	Over 8years (n=1)		
ERC	3.61±1.72	3.82±1.56	2.77±1.70	3.11±1.79	1.17±0.00	3.163	.015
GTA	3.50±1.96	3.93±1.60	2.78±1.70	3.15±1.83	1.67±0.00	3.148	.015

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PE	3.73±1.60	3.72±1.61	2.75±1.82	3.06±1.87	0.67±0.00	2.916	.022
GPV	3.16±1.25	3.68±1.00	2.72±1.19	3.01±1.21	1.31±0.00	4.993	.001
PV	3.13±1.21	3.73±1.01	2.89±1.24	3.14±1.22	1.22±0.00	3.889	.005
Controllability	2.97±2.25	3.63±1.74	2.25±1.86	2.62±1.86	2.00±0.00	3.724	.006
Trust	3.19±1.83	3.50±1.94	2.37±2.05	2.86±2.08	0.00±0.00	2.687	.032
PPA	3.88±1.71	3.53±1.84	2.49±2.21	2.80±1.88	2.00±0.00	2.828	.026
CP	3.26±0.71	3.21±0.78	2.66±0.80	3.00±0.75	1.76±0.00	5.289	.000
PSA	3.37±0.99	3.32±1.19	2.54±1.09	2.95±1.19	2.00±0.00	4.269	.002
NC	3.2±1.08	3.11±1.18	2.67±1.01	2.99±1.06	1.50±0.00	2.232	.067
PR	3.06±0.98	2.88±0.68	3.04±0.75	3.09±0.71	3.00±0.00	.493	.741
SS	3.08±0.64	3.05±0.83	2.79±0.96	3.03±1.07	1.33±0.00	1.592	.178
OC	3.38±1.82	3.45±1.93	2.55±1.94	3.00±1.86	2.00±0.00	1.813	.128
Memory	3.47±1.91	3.57±1.72	2.49±1.86	3.06±1.96	1.00±0.00	2.891	.023

4.2.4. The difference analysis of age in each dimension

The findings indicate that age has a significant impact only on the score of the Self/Other Scrutiny dimension. Specifically, individuals over 30 years old scored higher than those who are 18 years old, as well as higher than those in the age groups of 18-21, 22-25, and 26-30. However, there was no significant difference in age scores across the other dimensions. Table 6 lists the parameters.

Table 6. Over 30 years old have a significant difference in Self/Other Scrutiny

Dimension	Age(M±SD)					F	P
	18below (N=37)	18-21 (N=54)	22-25 (N=63)	26-30 (N=37)	over30 (n=16)		
ERC	3.02±1.78	3.30±1.72	3.15±1.75	2.76±1.72	3.63±1.81	0.894	.468
GTA	2.99±1.86	3.26±1.83	3.32±1.68	2.70±1.69	3.75±1.95	1.303	.270
PE	3.05±1.76	3.33±1.73	2.98±1.91	2.82±1.86	3.50±1.86	0.702	.591
GPV	2.94±1.27	3.24±1.17	2.83±1.22	2.99±1.21	3.29±1.19	1.077	.369
PV	3.10±1.21	3.34±1.19	2.98±1.27	3.08±1.20	3.25±1.24	0.705	.589
Con	2.35±2.01	3.01±2.01	2.48±1.81	2.66±1.80	3.16±2.03	1.097	.359
Tru	2.81±2.17	2.87±2.06	2.41±1.87	2.95±2.30	3.63±1.86	1.267	.284
PPA	2.76±2.05	3.15±2.21	2.63±1.99	2.78±2.03	3.56±1.50	0.964	.428
CP	2.94±0.85	3.03±0.85	2.79±0.73	2.85±0.84	3.10±0.72	0.911	.458
PSA	3.03±1.16	2.94±1.23	2.74±1.15	2.90±1.19	2.87±1.09	0.418	.795
NC	2.81±1.07	3.11±1.05	2.84±1.08	2.69±1.16	3.01±0.95	1.047	.384
PR	2.95±0.72	3.16±0.66	2.98±0.84	3.04±0.72	2.97±0.67	.627	.644
SS	2.93±0.92	2.96±0.87	2.75±0.95	2.91±1.05	3.69±0.93	3.195	.014
OC	2.76±2.06	3.22±1.96	2.65±1.84	2.84±1.94	3.63±1.59	1.276	.281
Mem	3.15±2.00	2.97±1.83	2.81±1.94	2.86±1.88	3.13±2.05	0.236	.918

4.2.5. The difference analysis of the Myers-Briggs Type Indicator（MBTI）in each dimension

The Myers-Briggs Type Indicator reveals that in the context of early relationships, the General Psychological Vulnerability, Commitment to Performance variables, and their secondary

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dimensions all have a significance level of less than 0.05, indicating a statistically meaningful difference in scores across different personality types. Notably, the introverted thinking type （Ti）scores highest in Early Relationship Context, Generational Transmission of Anxiety, and General Psychological Vulnerability. The Introverted sensation type（Si）exhibits the highest score in the dimension of Negative cognition. Furthermore, the Introverted intuitive type（Ni）demonstrates the highest scores in Psychological Vulnerability, Self/Other Scrutiny, and Opportunity Cost. Lastly, the Introverted Feeling type（Fi）shows the highest score in Parental Empathy, Controllability, Trust, Pervasive Performance Anxiety, Commitment to Performance, Proximal Somatic Anxiety, and Memory. Table 7 lists the parameters.

Abbreviate as follows： the Extroverted Sensation Type(Se), the Extroverted Thinking Type(Te), the Extroverted Intuition Type(Ne), and the Extroverted Feeling Type(Fe).

Table 7. The difference analysis of the MBTI in each dimension

Dimension	Myers-Briggs Type Indicator (M±SD)									F	P
	Si (N=36)	Se (N=18)	Ti (N=27)	Te (N=24)	Ni (N=27)	Ne (N=27)	Fi (N=20)	Fe (N=27)	Not at the moment. (N=1)		
ERC	3.4 ±1.72	2.75 ±1.72	3.96 ±1.52	2.64 ±1.72	3.86 ±1.60	2.33 ±1.59	3.88 ±1.86	2.20 ±1.41	2.00±0.00	4.531	0.000
GTA	3.39 ±1.83	2.76 ±1.71	4.04 ±1.62	2.64 ±1.72	3.91 ±1.62	2.40 ±1.56	3.93 ±1.92	2.25 ±1.41	2.00±0.00	4.415	0.000
PE	3.36 ±1.15	2.15 ±1.09	3.43±1.11	2.75 ±0.98	3.50±1.03	2.60 ±1.23	3.73±1.16	2.45 ±1.15	1.69±0.00	5.562	0.000
GPV	3.41 ±1.74	2.74 ±1.81	3.89±1.53	2.64 ±1.85	3.80±1.68	2.26 ±1.79	3.83±1.93	2.16 ±1.50	2.00±0.00	4.041	0.000
PV	3.38 ±1.20	2.31 ±1.07	3.45±1.17	3.04 ±1.01	3.65±1.03	2.72 ±1.28	3.59±1.23	2.76 ±1.25	1.22±0.00	3.748	0.000
Con	3.10 ±1.74	1.64 ±1.56	3.30±1.79	2.02 ±1.72	2.98±1.82	2.35 ±1.80	4.25±1.49	1.70 ±2.13	1.00±0.00	5.109	0.000
Tru	3.53 ±2.17	1.78 ±2.10	3.30±1.66	2.25 ±2.38	3.22±2.28	2.33 ±1.84	3.65±1.35	1.85 ±1.68	3.00±0.00	3.242	0.002
PPA	3.47 ±1.76	2.00 ±1.81	3.63±2.02	2.08 ±2.22	3.48±2.17	2.30 ±1.96	4.00±1.65	1.74 ±1.38	6.00±0.00	5.092	0.000
CP	3.13 ±0.81	2.46 ±0.56	3.29±0.77	2.57 ±0.70	3.35±0.77	2.59 ±0.76	3.32±0.65	2.47 ±0.64	2.52±0.00	6.796	0.000
PSA	3.08 ±1.14	2.1 ±0.78	3.38±1.12	2.20 ±1.00	3.46±1.17	2.51 ±1.08	3.50±1.11	2.54 ±1.04	3.57±0.00	5.848	0.000
NC	3.29 ±1.17	2.66 ±0.98	3.22±1.08	2.53 ±0.92	3.12±0.96	2.67 ±1.13	3.18±1.04	2.32 ±0.88	1.83±0.00	3.166	0.002
PR	2.93 ±0.66	3.19 ±0.49	2.91±0.93	3.21 ±0.75	3.09±0.65	3.02 ±0.80	2.93±0.57	3.02 ±0.91	3.50±0.00	0.576	0.797
SS	2.99 ±0.96	2.83 ±0.95	3.27 ±0.94	2.82 ±1.12	3.42 ±0.95	2.73 ±0.83	2.95 ±0.81	2.42 ±0.86	2.67±0.00	2.643	0.009
OC	3.19 ±1.89	2.33 ±1.78	3.33 ±1.88	2.92 ±1.86	3.70 ±2.18	2.30 ±1.56	3.55 ±1.9	2.04 ±1.72	1.00±0.00	2.649	0.009

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Mem	3.14 ±1.83	1.92 ±1.68	3.52 ±1.9	2.77 ±1.85	3.65 ±1.82	2.11 ±1.74	3.98 ±1.86	2.43 ±1.81	0.50±0.00	3.662	0.001

4.3. Correlation analysis

4.3.1. Correlation between years of music learning and Early Relationship Context

According to the findings, there is a notable inverse correlation between the Years of Music Study and Parental Empathy and Early Relationship Context. Table 8 lists the parameters.

Table 8. The inverse correlation between YMS, GTA, PE, and ERC

	YMS	GTA	PE	ERC
YMS	1			
GTA	-.129	1		
PE	-.148*	.880**	1	
ERC	-.143*	.969**	.970**	1

* indicate p＜0.05,** indicate p＜0.01,***indicate p＜0.001

4.3.2. Correlation between years of music learning and General Psychological Vulnerability

The findings indicate a substantial inverse relationship between the Years of Music Study and Controllability, Pervasive Performance Anxiety, and General Psychological Vulnerability. Table 9 lists the parameters.

Table 9. The inverse correlation between YMS, PV, Con, Tru, PPA, and GPV

	YMS	PV	Con	Tru	PPA	GPV
YMS	1					
PV	-.110	1				
Controllability	-.141*	.524**	1			
Trust	-.104	.464**	.462**	1		
PPA	-.165*	.419**	.440**	.743**	1	
GPV	-.146*	.940**	.726**	.663**	.626**	1

* indicate p＜0.05,** indicate p＜0.01,***indicate p＜0.001

4.3.3. Correlation between years of music learning and Commitment to Performance(CP)

The data indicates that there is no observed correlation between the Years of music study and the level of Commitment to Performance, as well as the secondary dimension.

Table 10. No observed correlation between YMS, PSA, NC, PR, SS, OC, Memory and CP

	YMS	PSA	NC	PR	SS	OC	Mem	CP
YMS	1							
PSA	-.131	1						
NC	-.069	.370**	1					
PR	.060	-.114	-.014	1				
SS	-.031	.338**	.289**	-.089	1			
OC	-.085	.310**	.419**	-.087	.333**	1		
Memory	-.101	.368**	.426**	-.057	.334**	.736**	1	
CP	-.122	.794**	.755**	-.011	.552**	.640**	.703**	1

* indicate p＜0.05,** indicate p＜0.01,***indicate p＜0.001

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5. Conclusion

In summary, the questionnaire data exhibits good credibility. Additionally, the analysis indicates no significant difference in the likelihood of gender-based music performance anxiety. However, there is a notable contrast in the incidence of music performance anxiety among college students based on their majors, ages, music experience, and personalities. Furthermore, the correlation analysis reveals a negative correlation between the Years of music study and general psychological vulnerability. However, no significant correlation is found between the Years of music study and Commitment to performance.

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