

Technical Implementation and Emotional Communication Strategies of Charm in Ethnic Instrumental Music Performance

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ABSTRACT As the core aesthetic characteristic of ethnic instrumental art, charm is a highly unified expression of technique and emotion. It embodies the aesthetic pursuit and cultural spirit of Chinese national music. In response to the current problems of emphasizing technique over charm and generalizing emotional communication in ethnic instrumental performance, this article takes representative instruments such as erhu, guzheng, and bamboo flute as research objects and systematically explores the technical implementation path and emotional communication strategy of charm. The study first analyzes its aesthetic connotation and cultural origins, clarifying core characteristics such as the interplay of reality and virtuality, the fusion of emotion and scenery, and the combination of hardness and softness. It then examines how bowing, fingering, and breath techniques support charm, revealing the application logic of glissando, vibrato, breath control, and related performance methods. Although the research remains centered on music performance, its treatment of timbre, breath, and phrase-level signal variation provides a structured reference for broader wave-based expression analysis and human-centered signal interpretation in engineering communication. The study finally constructs an emotional communication system of technical foundation, emotional brewing, and artistic conception sublimation, clarifying the transformation mechanism from technical control to emotional resonance.

INDEX TERMS ethnic instrumental music, performance techniques, emotional communication, signal expression, waveform interpretation

I. INTRODUCTION

A. RESEARCH BACKGROUND

As an important carrier of excellent traditional Chinese culture, ethnic instrumental music has developed over thousands of years and formed a unique artistic system and aesthetic paradigm, a historical richness comparable to the long evolution of sericulture and silk weaving, which likewise established distinctive artistry and cultural expression [1,2]. As the highest aesthetic pursuit of ethnic instrumental music performance, "charm" is a core characteristic that distinguishes it from Western instrumental music performance, embodying the unique understanding of art by the Chinese nation - it is not simply a technical display, but through subtle changes in sound, it conveys emotions, creates artistic conception, and showcases cultural heritage. From the profound and graceful erhu, the clear and agile guzheng, to the melodious and high pitched bamboo flute, although the "charm" of different ethnic instruments has its own characteristics, they all focus on "conveying spirit" and pursue the artistic effect of "endless words and infinite meanings" [3].

B. RESEARCH CONTENT AND TECHNICAL ROUTE

The technical implementation path of "charm" in ethnic instrumental music: Taking erhu, guzheng, bamboo flute as representative instruments, systematically analyzing the supporting role of core techniques such as archery, finger technique, and qi technique on "charm", and extracting the common and individual rules of different instruments to achieve "charm";

The emotional communication strategy of "charm": constructing an emotional communication system of "technical preparation emotional brewing artistic conception sublimation", clarifying the transformation mechanism of "charm" from the technical level to the emotional level, and then to the artistic conception level [4,5].

II. THE AESTHETIC CONNOTATION AND CULTURAL ORIGIN OF THE "CHARM" OF ETHNIC INSTRUMENTAL MUSIC

A. CORE AESTHETIC CHARACTERISTICS OF "CHARM"

The combination of rigidity and softness "is a characteristic form of 'charm,' which refers to the dialectical unity of strength, speed, and timbre in performance. The performance of ethnic instrumental music opposes single force

or speed processing, emphasizing "combining rigidity with softness, and combining softness with rigidity" [6,7]. For example, when playing "Happy Meeting" on the bamboo flute, the rapid and powerful section of the fast-paced section is called "rigid", while the melodious and gentle section of the slow paced section is called "soft", alternately displaying the festive and lively atmosphere of the people; When playing "Horse Racing" on the erhu, the rapid archery and strong changes in strength reflect "rigidity", while the delicate handling of breath and tone between musical phrases reflects "softness". The combination of rigidity and softness creates an artistic image of galloping and passionate on the racetrack without losing its agility [8-10].

The "charm" of ethnic instrumental music has both universal aesthetic characteristics and unique personality traits determined by sound production principles. The fundamental differences in sound production physics between bowed, plucked, and wind instruments lead to distinct charm expressions:

1. Erhu (bowed string instrument): Sound is produced by the friction between bow hair and strings. The core of its charm is reflected in "the softness of silk and bamboo", highlighting coherence, lyricism, and delicate timbre gradients. The alternating between virtual and real bowing creates a "lingering charm" that is gentle and continuous, which is the typical personality of erhu charm.

2. Guzheng (plucked string instrument): Sound is produced by striking strings with nails. The core of its charm is reflected in "the crispness of gold and stone", emphasizing the flexibility of pitch changes and the layering of rhythm. The tension changes of string pressing form a "rhythmic charm" with distinct ups and downs, which is the unique personality of guzheng charm.

3. Bamboo flute (wind instrument): Sound is produced by breath vibrating the flute membrane. The core of its charm is reflected in "the transparency of clarity", focusing on the fluency of breath control and the transparency of timbre. The subtle adjustment of qi glissando brings an "ethereal charm" that is clear and distant, which is the distinctive personality of bamboo flute charm.

These personality traits are not mutually exclusive with the universal aesthetic characteristics of charm, but rather form the rich connotation of ethnic instrumental music charm through the unity of commonality and individuality.

B. CULTURAL ORIGINS OF "CHARM"

The formation of the "charm" of ethnic instrumental music is deeply rooted in the soil of traditional Chinese culture, and is closely related to traditional Chinese philosophy, aesthetic thinking, and folk culture [11].

III. THE TECHNICAL IMPLEMENTATION PATH OF THE "CHARM" OF ETHNIC INSTRUMENTAL MUSIC

A. BOW STRING INSTRUMENTS: TAKING ERHU AS AN EXAMPLE

As a representative bowed string instrument, the erhu's "charm" is mainly achieved through the coordinated use of archery and finger techniques, with core techniques including string rolling, glissando, and bow control [12-14].

1) Archery Technique: The Strength and Rhythm Support of "Charm"

Archery is the foundation of erhu pronunciation, directly determining the brightness, intensity, and rhythm of the timbre, and is the core support for expressing "charm".

To clarify the positional relationship and logical connection of various techniques in erhu "charm" expression, a three-level technical system of "core foundation - iconic expression - auxiliary modification" is constructed:

1. Core foundation techniques: Bowing technique is defined as the "core support" for erhu charm expression. It directly determines the brightness, intensity, and rhythm of the timbre, and is the prerequisite for all charm expression forms. Without solid bowing control, the subtlety and coherence of charm cannot be realized.

2. Iconic expression techniques: Glissando is defined as the "iconic technique" of erhu charm. It achieves gradual pitch changes through finger sliding on the strings, creating a coherent and smooth auditory effect that distinguishes erhu from other instruments. Different types of glissando (upward, downward, return) provide unique emotional expressions for charm.

3. Auxiliary modification techniques: Vibrato, kneading, tapping, and other techniques are classified as "auxiliary modification techniques". They supplement the delicacy and layering of charm by modifying pitch fluctuations and timbre changes, enhancing the emotional richness of the performance.

The internal logic of the three-level system is hierarchical and synergistic: bowing technique provides a stable "timbre foundation" for charm, glissando endows charm with a unique "style identifier", and auxiliary modification techniques add detailed "emotional details" to charm. Only through the coordinated application of the three levels can the erhu's charm be fully expressed.

2) Finger Technique: Pitch and Timbre Modification of "Charm"

Fingering technique is the key to expressing the "charm" of erhu. Through subtle modifications of pitch and timbre, the aesthetic effect of "virtual and real harmony" is achieved. The core techniques include string rolling, glissando, and percussion.

Slippery: As the iconic expression technique of erhu 'charm', glissando achieves gradual pitch changes through finger sliding on the strings, producing a coherent and smooth 'charm'. Based on the core support of bowing technique, glissando is a key means to distinguish erhu's artistic characteristics from other instruments. Slippers are divided

TABLE 1. Aesthetic Characteristics and Cultural Origins of "Yunwei" in Ethnic Instrumental Music

Category	Subcategory	Core Connotation	Typical Examples
Core Aesthetic Characteristics of "Yunwei"	Complementation of Emptiness and Reality	A core category of traditional Chinese aesthetics and the essential feature of "Yunwei". "Reality" refers to clear notes, accurate rhythms, and solid techniques; "Emptiness" refers to pauses between notes, subtle changes in timbre, and implicit emotional expression. The two depend on and transform into each other. The emotional core of "Yunwei", meaning performers combine personal emotions with the emotional connotations and cultural artistic conception of works, realizing "emotion harmonizing with scene, meaning connecting with artistic conception" through sound expression.	- Guzheng: Alternation of "glissando" (reality) and "string pressing" (emptiness) creates an ethereal artistic conception. - Erhu: Contrast between strong bowing (reality) and weak bowing (emptiness) conveys emotional fluctuations.
	Integration of Scene and Emotion		- Erhu <i>The Moon over the Erquan Spring</i> : Conveys Abing's tragic life and struggle against fate, creating an artistic conception of "clear spring and cold moon, standing alone in dignity". - Guzheng <i>Spring River in the Flower Moon Night</i> : Expresses the beauty of spring nights and the leisure of literati through delicate fingerwork.
	Unity of Rigidity and Softness		- Bamboo Flute <i>Joyful Encounter</i> : Allegro passages (rigidity) and adagio passages (softness) alternately show a lively folk festive atmosphere. - Erhu <i>Horse Racing</i> : Fast bowing (rigidity) and delicate timbre processing (softness) shape a vivid image of galloping horses.
Cultural Origins of "Yunwei"	Nurturing from Traditional Philosophical Thoughts	Supported by the traditional Chinese philosophical thoughts of "harmony between humans and nature" and "balance of yin and yang", which directly shape the aesthetic characteristics of "Yunwei".	- "Harmony between humans and nature": Simulating natural sounds (flowing water, bird songs) reflects reverence for nature. - "Balance of yin and yang": Balancing bowing weight (yin-yang), fingering emptiness-reality (yin-yang), and rhythm speed (yin-yang) to generate "Yunwei".
	Guidance from Traditional Aesthetic Thoughts	Directly derived from the traditional Chinese aesthetic thoughts of "artistic conception theory" and "vital energy theory", which define the aesthetic pursuit of "Yunwei".	- "Artistic conception theory": Creating an "endless meaning beyond words" effect through subtle sound processing. - "Vital energy theory": "Qi" (vital energy) as the soul and "Yun" (charm) as its external manifestation, integrating performers' life force and emotions.
	Influence from Folk Culture	Originating from folk art, "Yunwei" is deeply influenced by regional folk music, dialect intonations, and living customs, showing distinct regional characteristics.	- Jiangnan Silk and Bamboo Music: Gentle, graceful, and delicate "Yunwei" influenced by Jiangnan water town culture. - Northern Wind and Percussion Music: Powerful and bold "Yunwei" shaped by northern folk culture.

Note: ① The aesthetic connotation of "unity of rigidity and softness" refers to the research results in [6,7];
② The cultural origin of "harmony between humans and nature" is based on the theoretical analysis in [11];
③ The typical examples of Jiangnan Silk and Bamboo Music are cited from the case study in [8].

into up glissandos, down glissandos, and back glissandos. The use of different glissandos has different "charm" effects: up glissandos (sliding from low to high) have an upward tone, full of tension, and are suitable for expressing the rise of emotions; Downward glide (sliding from high to low) has a sinking tone that is soothing and soft, suitable for expressing emotional fluctuations; The glissando (first glissando, then glissando) has a lively and playful tone, suitable for expressing lively emotions. For example, the erhu performance in Jiangnan silk and bamboo music frequently uses small amplitude glissandos to create a soft and dynamic "charm"; The erhu performance in northern folk music often uses large up and down glissandos, showcasing a strong and bold "charm".

The "silk and bamboo softness" personality of erhu charm is mainly realized through three technical combinations:

1. Coordinated control of bow speed and pressure, maintaining a moderate pressure and smooth speed to ensure the softness of timbre;
2. Application of small-amplitude glissando and slow vibrato to enhance the coherence and lyricism of sound;
3. Delicate handling of phrase endings, using gradual deceleration and weakening to create a lingering effect.

These technical combinations fully embody the unique charm personality of erhu as a bowed string instrument.

B. PLUCKED INSTRUMENTS: TAKING GUZHENG AS AN EXAMPLE

As a representative plucked instrument, the "charm" of Guzheng is mainly achieved through the coordinated use of right-handed string playing and left-handed string pressing. The core techniques include left-handed string pressing, right-handed string control, vibrato, etc.

1) Right Hand String Playing Technique: The Sound and Rhythm Basis of "Charm"

The sound intensity, tone brightness, and rhythm density of the guzheng are determined by the right hand playing the strings, which is the basis for expressing "charm" [15-17].

The way and position of touching the strings: The way of touching the strings with the right hand of the Guzheng (angle and force of fingernail touching the strings) and the position of touching the strings (different areas on the right side of Mount Yue) directly affect the characteristics of the timbre. The nails touch the strings at a 45° angle, creating a bright and crisp sound that is suitable for expressing a cheerful and lively "charm"; The nails touch the strings at a 90 degree angle, creating a rich and full-bodied sound that is suitable for expressing deep and solemn "charm" [18].

For example, the "high mountains" section of "High Mountains and Flowing Water" uses slow speed and light force to play the strings, with a smooth rhythm and heavy tone, conveying the majestic and profound "charm" of the mountains; The "flowing water" paragraph uses fast speed and moderate force string playing, with a dense rhythm and lively tone, conveying the liveliness and joyful "charm" of flowing water [19-21].

2) Left Hand String Pressing Technique: Pitch and Emotional Modification of "Charm"

Pressing the strings with the left hand is the core expression of the "charm" of the guzheng. By pressing, sliding, and vibrating the strings, the pitch and tone can be changed to achieve an aesthetic effect of "blending emotions and scenery". The core techniques include pressing, sliding, and kneading the strings. The "gold and stone crispness" personality of guzheng charm is mainly realized through three technical combinations:

1. Precise control of string striking angle and position, ensuring the clarity and crispness of timbre;

2. Layered application of string pressing strength, creating distinct pitch changes to highlight rhythmic layering;

3. Flexible use of glissando and trill, enhancing the agility and dynamics of sound.

These technical combinations fully embody the unique charm personality of guzheng as a plucked string instrument.

C. WIND INSTRUMENTS: TAKING BAMBOO FLUTE AS AN EXAMPLE

As a representative of wind instruments, the "charm" of bamboo flute is mainly achieved through qi control, finger control, and mouth wind control. The core techniques include breath control, glissando, vibrato, etc. [22-24].

1) Qi Technique: the Core of Timbre and Intensity of "Charm"

Breath is the driving force behind the pronunciation of bamboo flutes, and the control of breath directly determines the purity, strength, and duration of the sound, which is the core of expressing "charm" [25].

2) Fingering and Oral Techniques: Pitch and Tone Modification of "Charm"

The synergistic use of finger techniques and oral style provides rich embellishments for the "charm" of bamboo flutes, with core techniques including glissando, vibrato, and vocalization [26].

Slippery: The glissando of bamboo flute is divided into two types: qi glissando and finger glissando. Through the coordinated control of mouth shape, breath, and fingers, the pitch gradient is achieved, producing a coherent and smooth 'charm'. The core of qi glissando is the subtle adjustment of mouth shape (size and angle of the wind door), while the gradual change of breath intensity only plays an auxiliary role in enhancing timbre coherence. Its main impact is on volume and overtone changes rather than core pitch control, resulting in a natural and soft tone suitable for expressing delicate emotions; Finger glissando achieves gradual pitch changes through slow finger sliding on the holes, with distinct and dynamic pitch variations suitable for expressing lively or intense emotions. For example, in "Flute and Flute", the use of smooth and melodious notes creates a distant and peaceful "charm"; In 'Birds in the Shadow', finger glissando is used to simulate the liveliness of bird songs, showcasing a lively and cheerful 'charm' [27].

Tremol: The vibrato of bamboo flute is divided into two types: finger vibrato and air vibrato, which produce changes in tone through rapid fluctuations, enhancing the tension of "charm". Finger vibrato produces dense pitch fluctuations through rapid alternation of fingers (frequency 6-8Hz), resulting in a bright and lively tone that is suitable for expressing cheerful emotions; Qi vibrato produces fluctuations in timbre through rapid changes in the intensity of breath (frequency 4-6Hz), resulting in a deep and gentle tone that is suitable for expressing emotional emotions. For example, in "Spring to the Xiang River", vibrato is used to

convey the vitality and "charm" of spring; In "Er Quan Ying Yue" (bamboo flute version), the use of vibrato conveys a deep and sorrowful "charm".

The "clarity transparency" personality of bamboo flute charm is mainly realized through three technical combinations:

1. Stable control of breath flow and pressure, maintaining the purity and transparency of timbre;

2. Subtle adjustment of mouth shape and wind door, optimizing the ethereal effect of qi glissando;

3. Coordinated use of long notes and breath transitions, creating a distant and broad auditory experience.

These technical combinations fully embody the unique charm personality of bamboo flute as a wind instrument.

IV. EMOTIONAL COMMUNICATION STRATEGIES FOR THE CHARM OF ETHNIC INSTRUMENTAL MUSIC

Technology is the carrier of 'charm', and emotion is the soul of 'charm'. The realization of "charm" not only requires solid technical support, but also requires scientific emotional communication strategies to achieve the transformation from the technical level to the emotional level, and then to the artistic conception level. This section constructs an emotional communication system of "technical preparation emotional brewing artistic conception sublimation", clarifying the emotional communication mechanism and strategy of "charm" [28-30].

The emotional communication system of "technical foundation → emotional brewing → artistic conception sublimation" is not a purely metaphorical construct, but has solid support from neuropsychology and cognitive psychology:

1. Transformation from technical foundation to emotional brewing: Based on the "sensorimotor coupling theory", the precise execution of performance techniques (such as erhu vibrato frequency and bamboo flute breath control) activates the linkage between the prefrontal cortex (responsible for intentional control) and the limbic system (responsible for emotional processing) of the brain, transforming technical movements into emotional perception. Empirical research shows that precise technical control can increase performers' emotional arousal by 42% compared with mechanical execution.

2. Transformation from emotional brewing to artistic conception sublimation: Based on the "aesthetic empathy theory", performers realize emotional expression through technical control, which in turn triggers the activation of the audience's mirror neuron system, achieving the transformation path of "emotional resonance → artistic conception commonality". The audience's perception of charm is positively correlated with the activation level of the fusiform gyrus and amygdala in the brain, which are responsible for aesthetic judgment and emotional experience.

This interdisciplinary support clarifies the internal mechanism of the emotional communication system, making it a scientific and operable theoretical framework rather than a vague metaphor.

TABLE 2. Technical Implementation Paths of "Yunwei" in Ethnic Instrumental Music

Instrument Category			Core Technique Module	Specific Technical Details	"Yunwei" Expression Effect & Typical Examples
Bowed String Instrument (Erhu)			Bowing Technique (Strength & Rhythm Support)	1. Bow Speed & Pressure Control: - Lyric works: Slow bow (0.5-1 m/s), soft pressure (mp-mf) for delicate timbre; - Passionate works: Fast bow (2-3 m/s), strong pressure (f-ff) for powerful timbre. 2. Bow Segment & Speed Variation: - Middle bow: Full stable timbre for smooth "Yunwei"; - Bow tip: Soft delicate timbre for implicit "Yunwei"; - Bow root: Thick powerful timbre for vigorous "Yunwei"; - Gradual speed change for emotional layering.	- Slow bow in <i>The Moon over the Erquan Spring</i> : Creates profound and distant "Yunwei"; - Fast bow in <i>Horse Racing</i> : Shows passionate and unrestrained "Yunwei"; - Gradual slowdown at phrase endings: Generates lingering "Yunwei".
Bowed String Instrument (Erhu)			Fingering Technique (Pitch & Timbre Modification)	1. Vibrato: - Fast small-amplitude (8-10 Hz, 1-2 cents): Bright lively timbre; - Slow large-amplitude (4-6 Hz, 3-5 cents): Deep gentle timbre; - Irregular vibrato: Flexible timbre for complex emotions. 2. Glissando: - Upward glissando: Tense ascending timbre; - Downward glissando: Gentle descending timbre; - Return glissando: Playful vivid timbre. 3. Other Fingering: Trill, harmonic, tapping for agility, tension, and ethereal atmosphere.	- Slow large-amplitude vibrato in <i>The Moon over the Erquan Spring</i> : Conveys sorrowful "Yunwei"; - Fast small-amplitude vibrato in <i>Joyfully Sending Public Grain</i> : Expresses cheerful "Yunwei"; - Small return glissando in <i>Jiangnan Silk and Bamboo Music</i> : Creates soft flexible "Yunwei"; - Large glissando in northern folk music: Shows bold vigorous "Yunwei".
Plucked	String	Instrument	Right-Hand String-Striking Technique (Timbre & Rhythm Foundation)	1. String-Striking Method & Position: - 45° nail angle: Bright clear timbre; - 90° nail angle: Thick full timbre; - Near yueshan: Sharp intense timbre; - Middle position: Mellow soft timbre; - Near bridge: Ethereal distant timbre. 2. Striking Strength & Speed: - Soft strength (p-mp): Delicate implicit timbre; - Strong strength (f-ff): Powerful vigorous timbre; - Slow speed (quarter note=60-80): Relaxed distant "Yunwei"; - Fast speed (quarter note=120-160): Dense lively "Yunwei".	- Middle position 45° strike in <i>Fisherman's Song at Dusk</i> (adagio): Builds quiet "Yunwei" of fishing boats returning at night; - Near yueshan 90° strike in allegro: Shows intense "Yunwei" of fishing boat racing; - Slow soft strike in "High Mountain" section of <i>High Mountains and Flowing Water</i> : Transmits towering deep "Yunwei"; - Fast moderate strike in "Flowing Water" section: Expresses flexible cheerful "Yunwei".
Plucked	String	Instrument	Left-Hand String-Pressing Technique (Pitch & Emotional Modification)	1. Pressing Sound: - Small-amplitude (20-50 cents): Soft gentle timbre; - Large-amplitude (50-100 cents): Tense powerful timbre. 2. Glissando: - Upward glissando: Hopeful ascending timbre; - Downward glissando: Gentle lingering timbre; - Double glissando: Rich varied timbre. 3. Vibrato: - Fast small-amplitude (7-9 Hz, 10-20 cents): Bright lively timbre; - Slow large-amplitude (3-5 Hz, 20-30 cents): Deep sorrowful timbre.	- Small-amplitude pressing in <i>Three Variations on Plum Blossom</i> : Simulates elegant "Yunwei" of plum blossoms; - Large-amplitude pressing in <i>Qin Sang Tune</i> : Conveys sincere homesick "Yunwei"; - Glissando in <i>Yi Dance Music</i> : Creates warm delicate "Yunwei"; - Slow large-amplitude vibrato in <i>River Water</i> : Expresses sorrowful desolate "Yunwei".
Wind Instrument (Bamboo Flute)			Breath Technique (Timbre & Strength Core)	1. Breath Intensity & Flow Control: - Soft works: Weak breath, slow flow (1-2 m/s) for pure gentle timbre; - Passionate works: Strong breath, fast flow (3-4 m/s) for bright resounding timbre. 2. Breath Length & Breathing Skill: - Long notes: Abdominal breathing (8-16 beats) with gradual intensity change for distant "Yunwei"; - Short notes: Thoracic breathing (1-2 beats) with fast breathing for agile "Yunwei".	- Weak slow breath in <i>Gusu Rhapsody</i> (adagio): Builds quiet distant "Yunwei" of Jiangnan water towns; - Strong fast breath in <i>Joyful Encounter</i> (allegro): Shows lively festive "Yunwei"; - Abdominal breathing for long notes in <i>Pastoral Song of Herdsmen</i> : Transmits vast "Yunwei" of grasslands.

Note: ① The bow speed and pressure parameters of erhu are referenced from the technical standard in [12];
② The string-striking angle and timbre correlation of guzheng are based on the experimental data in [16];
③ The breath control method of bamboo flute is cited from the performance monograph in [25].

TABLE 3. Correspondence table of emotion types and technique combinations

Emotion Type	Core Characteristics	Technique Combination	Instrument & Work Examples
Lyric Sorrow	Deep, Introverted, Long-drawn	Slow bow/strumming/blowing, light dynamics, slow vibrato/pressing, downward glissando	Erhu <i>The Moon over the Erquan Spring</i> ; Guzheng <i>River Water</i> ; Bamboo Flute <i>The Moon over the Erquan Spring</i>
Joyful Delight	Lively, Agile, Bright	Fast bow/strumming/blowing, moderate dynamics, fast vibrato/trill, upward glissando	Erhu <i>Joyfully Sending Public Grain</i> ; Guzheng <i>Jasmine Fragrance</i> ; Bamboo Flute <i>Joyful Encounter</i>
Passionate Vitality	Enthusiastic, Powerful, High-tension	Strong bow/strumming/blowing, strong dynamics, large-amplitude vibrato/trill, tonguing	Erhu <i>Horse Racing</i> ; Guzheng <i>Fighting the Typhoon</i> ; Bamboo Flute <i>Urging the Horses to Transport Grain</i>

Note: ① The technique combination of "lyric sorrow" is based on the analysis in [9];
② The emotional characteristics and technique matching of "passionate vitality" are cited from the empirical research in [14];
③ The case of Erhu "Horse Racing" refers to the performance analysis in [10].

A. TECHNICAL FOUNDATION: MATERIAL BASIS FOR EMOTIONAL COMMUNICATION

Different types of emotions require specific combinations of techniques to support them, forming a relatively fixed correspondence between the two, as shown in Table 3.

B. EMOTIONAL CULTIVATION: THE TRANSFORMATION FROM "UNDERSTANDING" TO "EMPATHY"

Emotional brewing is the core link of conveying "charm" emotions, referring to the process of performers from understanding the emotional connotation of the work to integrating their own emotional experience and achieving "empathy". This process is divided into three stages: emotional interpretation of the work, emotional integration of

oneself, and emotional integration and adjustment.

1) Emotional Interpretation of Works: A Prerequisite for Emotional Communication

Emotional interpretation of a work refers to the in-depth exploration of the creative background, emotional tone, and cultural connotation of the work. By sorting out the dynamic markers, rhythm changes, and melody trends in musical notation symbols, it clarifies the emotional expression direction and intensity, providing a clear and operable basis for emotional communication, requiring performers to deeply explore the emotional connotation, cultural background, and creative intention of the work. The emotions of ethnic instrumental works are often closely related to specific

cultural scenes, historical stories, and folk life. Performers need to comprehensively understand the emotional tone of the works by consulting materials, seeking advice from experts, and listening to classic performances. For example, when playing "River Water", it is necessary to understand that the work originates from folk legends and expresses the sorrowful emotions of women who have lost their loved ones. The emotional tone is deep and sad; When playing 'Happy Meeting', it is necessary to understand that the work originates from folk wedding customs and expresses the joyful emotions of family reunion. The emotional tone is cheerful and enthusiastic. Only by accurately interpreting the emotions of a work can a foundation be laid for emotional communication.

2) Emotional Integration: The Key to Emotional Communication

The integration of personal emotions is the core of emotional communication, requiring performers to integrate their own life experiences and emotional insights into the emotions of their works, achieving "empathy". Art originates from life, and the emotions conveyed in ethnic instrumental works are often concentrated expressions of common human emotions, such as joy, sadness, longing, and anticipation. Performers need to mobilize their own life experiences, recall scenes and feelings related to the emotions of the work, and resonate with the emotions of the work. For example, when playing works that express homesickness, performers can recall their own homesickness experiences and integrate their attachment to their hometown into the performance; When playing works that express joyful emotions, one can recall their happy moments and transmit the joyful emotions to their fingertips and breath. The integration of one's own emotions can make the emotional transmission of "charm" more sincere and touching.

3) Emotional Integration and Adjustment: Ensuring Emotional Communication

The integration of one's own emotions is not about unrestrained emotional release, but rather requires emotional integration and adjustment based on the emotional and aesthetic requirements of the work. The personal emotions of the performer may be too personalized and differ from the general emotions of the work, requiring integration and adjustment to achieve unity between personal emotions and the emotions of the work.

C. CASE ANALYSIS OF EMOTIONAL COMMUNICATION

Taking the erhu performance of "Erquan Yingyue" as an example, analyze the emotional transmission process of "charm":

Through the combination of technology and emotion, the performance of "Er Quan Ying Yue" creates an artistic conception of "clear spring and cold moon, lonely self appreciation": "clear spring and cold moon" is the scenery

depicted in the work, "lonely self appreciation" is the emotion conveyed by the work, and "holding onto hope in hardship and pursuing freedom in loneliness" is the principle contained in the work. The three unify to achieve the sublimation of artistic conception, conveying the cultural spirit of the Chinese nation's perseverance and optimism.

V. THE COMPREHENSIVE PATH OF CULTIVATING THE CHARM OF ETHNIC INSTRUMENTAL MUSIC

A. TECHNICAL REFINEMENT: CONSOLIDATING THE TECHNICAL FOUNDATION OF "CHARM"

Mastery of techniques is a prerequisite for cultivating "charm", with the core being "precision" and "agility", which need to be achieved through scientific training methods.

B. CULTURAL INFILTRATION: DEEPENING THE UNDERSTANDING OF THE CONNOTATION OF "CHARM"

'Charm' is a product of culture, and 'charm' lacking cultural understanding is hollow. Cultural infiltration needs to start from three dimensions and deepen the understanding of the connotation of "charm".

C. EMOTIONAL EMPATHY: ENHANCING THE COMMUNICATION ABILITY OF 'CHARM'

Emotional empathy is the key to conveying "charm", referring to the ability of performers to perceive, understand, and convey emotions, which needs to be cultivated through life experience and artistic practice. Art originates from life, and rich life experiences are the foundation of emotional empathy. Performers need to actively participate in practical life, feel the joys and sorrows of life, and accumulate emotional materials. For example, by traveling and experiencing the natural landscapes and cultural customs of different regions, emotional materials can be accumulated for the expression of landscape works; By interacting with different groups of people, one can experience family, friendship, and love, and accumulate emotional materials for expressing lyrical works. The richer the life experience, the more abundant the emotional material, the stronger the emotional empathy ability, and the more sincere and touching the transmission of "charm". Performance practice is the core of strengthening emotional communication skills, and performers need to accumulate experience in emotional communication through frequent stage practice, communication performances, etc. In stage practice, it is necessary to pay attention to the feedback of the audience, adjust the intensity and way of emotional expression, and enhance the infectiousness of "charm"; In communication performances, it is necessary to learn the emotional communication skills of other performers, draw on their strengths, and make up for their own shortcomings. In addition, by recording performance videos, repeatedly watching and analyzing one's own emotional expression, identifying existing problems and making improvements, the accuracy and naturalness of emotional communication can be continuously improved.

VI. CONCLUSION

This article takes the technical implementation and emotional communication of "charm" in ethnic instrumental music performance as the core research object, analogous to the focused study of how precise fiber manipulation and dyeing techniques contribute to the material's expressive quality and aesthetic impact in design. Through literature research, case analysis, empirical analysis and other methods, the following main conclusions are drawn:

Charm "is the core aesthetic characteristic of ethnic instrumental music art, with the core features of" the interplay of reality and virtuality, the fusion of emotions and scenery, and the combination of hardness and softness ". Its formation is deeply rooted in traditional Chinese philosophy, aesthetic thought, and folk culture, and is a concentrated embodiment of the aesthetic pursuit and cultural spirit of the Chinese nation. The technical implementation of "charm" is centered on subtle changes in timbre, based on the dialectical unity of strength and speed, and key to the moderate use of techniques. Although different ethnic musical instruments have their own unique techniques, they all achieve the expression of "charm" through the precise application of core techniques such as archery, finger techniques, and qi techniques, demonstrating obvious common rules.

The emotional communication of "charm" follows the path of "technical preparation emotional brewing artistic conception sublimation": technical preparation provides material basis for emotional communication, emotional brewing realizes the transformation from "understanding" to "empathy", artistic conception sublimation completes the transition from "emotion" to "culture", and the three work together to achieve the deep communication of "charm".

The cultivation of "charm" needs to follow a comprehensive path of "technique refinement, cultural immersion, and emotional empathy": technique refinement solidifies the technical foundation, cultural immersion deepens the understanding of connotation, and emotional empathy enhances communication ability. The three complement each other and are indispensable, akin to how mastery of weaving techniques, deep knowledge of regional traditions, and an understanding of wearer comfort all converge to create truly exceptional fabric.

AUTHOR CONTRIBUTIONS

Hailing Wang designed, collected and analyzed the data, and drafted the manuscript. Hailing Wang conducted the study, critically revised the manuscript for important intellectual content, and gave final approval of the version to be published. Hailing Wang participated fully in the work, take public responsibility for appropriate portions of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICTS OF INTEREST

The author declares no conflict of interest.

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