

Study on the Spatialized Expression of East Asian Women's Identity Narratives: A Cross-Boundary Practice Based on New Media Images and Interactive Installations

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Keywords: East Asian Women; Identity Narration; Spatial Expression; Interactive Device; New Media Image

Abstract: This article focuses on the narrative of women's identity in East Asia, taking it as the object of spatial expression, and explores the practical ways of constructing immersive artistic experience with new media images and interactive devices. Based on interdisciplinary creative practice, the study transforms women's memory, depression and looseness of subjectivity under social discipline into perceptual spatial structure. Through the integration of modeling, rendering, visual design and basic interaction technology, the transformation from text narration to personal participation is achieved. The work uses nonlinear moving lines to organize the progression of emotions, and with the help of projection, material and sensor feedback, it creates the triple fields of depression, struggle and release, so that the audience can trigger the perceptual cognition of gender experience in the process of body movement. Research shows that space, as a narrative medium, can bear unspeakable private experiences to a certain extent, and the interactive mechanism with low technical threshold can also convey meaning under limited conditions.

1. Introduction

In the cultural context of East Asian society, women's identity has long been framed by family structure, social expectation and gender norms. From the traditional role of "wife and mother" to the "balance problem" in the modern workplace, women's self-expression is often compressed in the private field, making it difficult to enter the center of public discourse [1]. Their experiences often exist in the form of silence, forbearance or fragmentation, and are rarely systematically described, and there is less chance to be presented and perceived in a tangible and perceptual way [2]. This lack of expression is not only related to the repression of individual memory, but also reflects the structural power relationship [3]. Art, especially contemporary art, is gradually becoming a medium to break the silence. It does not rely on logical argument, but evokes resonance and reflection through atmosphere, senses and participation.

The development of new media art provides new possibilities for the expression of such social issues. Images are no longer limited to screens, and devices are no longer just static displays; Space itself began to become the carrier of narrative. The audience is no longer a bystander, but a participant who can walk in, touch and trigger the story. Especially when dealing with those unspeakable emotions and memories, the immersive and interactive space experience is more penetrating than words.

This article attempts to explore how to transform East Asian women's narrative into an immersive space experience through new media art, so that repressed memories can reappear in the three-dimensional field. This space is not a copy of reality, but a poetic reconstruction. It extracts the common psychological states of East Asian women in the stages of growth, marriage and childbearing, and the workplace, and transforms these abstract emotions into concrete materials, light and shadow and interaction mechanisms. For example, a wall covered with fabric will play a whispering sound clip when touched; A narrow passage, the projection constantly flashes the social evaluation sentences of women, and gradually breaks down as the audience moves forward. These

designs do not pursue straightforward preaching, but try to create a perceptual process of "body comes before consciousness".

The significance of this practice lies not only in the innovation of artistic form, but also in providing an alternative path for the publicity of female experience. When the audience bends down through the low structure symbolizing depression, or sees themselves overlapping with the female figure in the image in the mirror device, the narrative is no longer the story of the "other", but may cause some empathy tremor.

2. Theoretical basis and research perspective

To understand the expression of female identity in space, we need to admit that identity is not a fixed essence, but a dynamic process of continuous consultation between social structure and individual experience. In the context of East Asia, female identity is often shaped by family ethics, Confucian tradition and the pressure of modernity [4]. They switch between the roles of "daughter", "wife", "mother" and "employee", and their self is diluted in multiple expectations. The fluidity and contradiction of identity make it difficult for traditional linear narrative to present its complex experience completely [5]. Therefore, the research turned to spatial expression, so that identity was not only "told" but also "experienced".

The theory of this turn began with the feminist scholar Chizuko Ueno's criticism of Japanese family system and gender division of labor. She pointed out that women's unpaid labor and emotional contribution have been naturalized and invisible for a long time and become the "background sound" of social operation. This "invisible oppression" shows that it is difficult to completely reveal its existence only by words [6]. The art space provides the possibility of "making the invisible visible". This means that the experience of female identity contains many unnamed and recorded "tiny moments", such as ducking one's head and hesitating to speak in the meeting. These details constitute the true texture of identity, but it is difficult to enter the mainstream narrative. Immersive space can just hold these fragments, and arouse the audience's physical memory of "daily oppression" through atmosphere, materials and interaction.

Space is not a neutral container. In daily life, the layout of buildings, the setting of public facilities, and even the lighting are all invisibly disciplining behavior and identity [7]. When female narratives are placed in art galleries, corridors, corners or passages, the spatial form itself is a gesture. It may be oppressive and narrow, or it may be open and penetrating, guiding the audience to perceive the distribution of power in body movement. The rise of new media art provides technical support and aesthetic language for "spatial narrative" [8]. Different from traditional sculpture or painting, new media devices have the characteristics of timeliness, interactivity and multi-senses. Instead of asking the audience to "wait and see", it invites them to "enter" and "trigger".

This study integrates the feminist identity theory, the concept of space production and the participatory characteristics of new media art, and constructs an "accessible narrative model", which regards space as a memory field, technology as an emotional amplifier, and the audience as a narrative conspirator. This cross-border perspective does not seek grand and complete theory, but aims to make the compressed female experience emerge and resonate in a specific space moment through concrete creation, and trigger reflection through interaction. This is not only an exploration of art form, but also an attempt to redistribute the right to speak.

3. Creative concept and theme construction

In the social and cultural context of East Asia, the construction of female identity has long been disciplined by family ethics, gender norms and modernization process. This kind of discipline often does not appear in the form of explicit coercion, but is internalized into individual behavioral inertia and self-cognition through the continuous infiltration of daily practice, emotional expectation and social evaluation. Because of this, many women's experiences present a "silent structure". Traditional narrative methods, such as text records or linear images, are often difficult to fully bear

this complex and hidden psychological state. For this reason, this study attempts to break through the limitations of language and print media, turn to space as an expression carrier, and explore the non-verbal and embodied presentation path of female identity experience.

This creative practice takes "memory", "gaze", "discipline" and "looseness" as the core themes, and constructs a nonlinear narrative structure with multi-sensory participation. Different from the traditional exhibition logic which takes time or events as the clue, this space adopts emotional moving line as the organizing principle, and guides the audience to experience the tension between identity depression and self-awareness in body movement through the synergy of spatial form, material language, light and shadow changes and interaction mechanism. The whole space is divided into three progressive areas: in the first area, a closed and low structure is used to create a sense of oppression, and the walls are made of light-absorbing fabrics and frosted glass, so the light is weak, and the projected content focuses on the disciplined words of society to women, such as labels such as "sensible", "gentle" and "caring for the family" appearing repeatedly in whispers, forming a continuous psychological oppression; In the second area, the inclined structure and mirror material are introduced, and the space begins to be distorted and fractured. The image content turns to the individual's inner struggle and self-censorship, and the projection screen switches between real recording and abstract animation to strengthen the visual expression of psychological conflict. The space of the third area is gradually opening up, using translucent materials and natural pneumatic devices. The images show non-functional postures such as women's solitude, walking and staring into the distance, which no longer emphasizes the role performance, but implies the slow emergence of some subjectivity.

On the technical realization level, the spatial layout is modeled and scrutinized for several rounds based on SketchUp, and the channel width, line-of-sight height and spatial proportion are mainly controlled to ensure the matching of physical perception and psychological atmosphere. In the rendering stage, Enscape is used to simulate light and shadow, pursuing a visual texture between reality and dreams, and avoiding over-dramatization and weakening the sense of reality. The design of vision system is based on PS and AI. Symbolic image elements such as high heels, stitching symbols and calendar fragments are extracted, and images and devices are embedded in a fragmented and intermittent way to avoid straightforward symbolic expression. The interaction mechanism adopts infrared sensor and basic Arduino control system to realize the linkage between audience behavior and image/sound feedback, such as approaching a specific area to trigger the play of memory fragments and touching the surface of the device to trigger the change of sound frequency, so as to establish the participatory narrative logic of "behavior-response".

The work does not attempt to provide a complete or universal female narrative, but focuses on some common emotional structures and physical experiences in the East Asian context, and externalizes them into perceptual fields through the spatial artistic language. Its core creative idea is that identity is not only the result of social construction, but also a continuous physical practice. For this reason, the expression of identity should also go beyond language and visual representation and enter the dimensions of space, material and interaction, so that the audience can trigger the potential cognitive and emotional resonance of gender discipline in the embodied participation.

4. Practice process and presentation of works

The practical process of this project revolves around the construction logic of "space-image-interaction", aiming at transforming the identity experience of East Asian women into an immersive field that can be perceived and participated. The whole creative cycle lasted for three months, covering concept deduction, spatial modeling, visual design, device production, system integration and field debugging. The work was finally presented in the form of a small interactive installation exhibition, which lasted for seven days. The exhibition was held in the experimental exhibition hall of an art college, with a total space of about 25 square meters. The audience could freely enter and trigger multi-modal feedback.

The spatial layout adopts asymmetric loop moving line design to guide the audience to experience the emotional progression of "repression-oppression-loosening". The whole structure is

composed of light wood frame and detachable plate, which is convenient for on-site assembly and light and shadow control. In the early design stage, a three-dimensional model was established by SketchUp, and the channel width (from 80cm to 150cm), the top height (from 1.8m to 1.6m and then back to 2.4m) and the line of sight guidance angle were repeatedly adjusted to strengthen the body's direct experience of spatial oppression. Figure 1 shows the final spatial modeling scheme, which clearly shows the division of three functional areas and the audience's travel path.

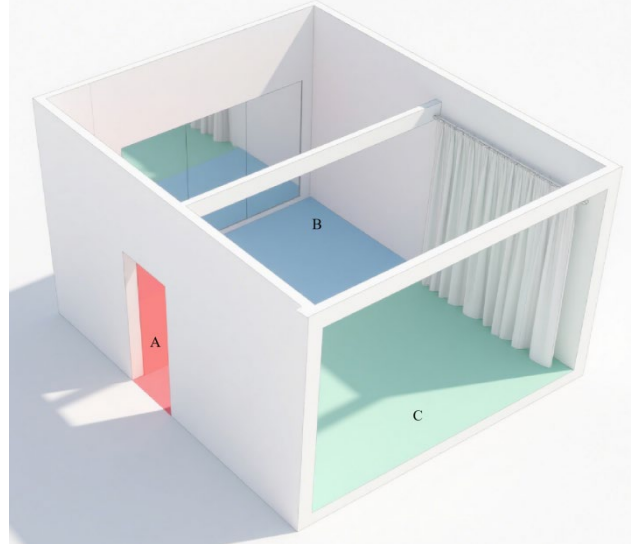


Figure 1 Schematic diagram of spatial modeling

The video content consists of real shot material and digital composite picture, focusing on the "tiny moments" of women in daily life: collaring, avoiding eyes, sitting alone in the middle of the night, repeatedly checking tone, etc. These fragments are not dramatic scenes, but capture and amplify inertial behavior. All images are processed by PS and AE, with low saturation blue-gray tone and hand-painted texture superimposed on some images, so as to weaken the "documentary sense" and enhance psychological metaphor. Projection adopts two short-focus projectors, which are projected on the wall and the ground respectively, forming an enclosed visual environment. Table 1 lists the technical parameters and narrative functions of the main video clips.

Table 1 Technical Parameters and Narrative Functions of Key Video Clips

Clip No.	Content Description	Duration (sec)	Projection Surface	Trigger Method	Narrative Function
V01	Adjusting expression in mirror	42	Front wall	Infrared sensor	Illustrates everyday self-regulation
V02	Hands repeatedly folding paper	35	Floor	Static loop	Metaphor for emotional repression and repetitive labor
V03	Lips moving silently	28	Side wall	Touch sensor	Symbolizes suppressed speech
V04	Distant figure walking alone	60	Rear wall	Automatic loop	Suggests slow emergence of subjectivity

Interactive mechanism is the key to realize "participatory narrative". An interactive wall covered with linen is set up in area B, and a plurality of micro vibration motors are embedded in the surface, and Arduino control module and infrared sensor are connected behind it. When the audience approaches within 50cm, the system automatically plays the whispering recording (collected from the real interview segment), and at the same time, the motor produces a slight tremor to simulate "heartbeat" or "tension". Another interaction point is the semi-transparent gauze curtain hanging in Area C. When the audience reaches through the fabric, they touch the hidden pressure sensor, which triggers the original static picture in the wall projection to slowly break, symbolizing the looseness of the depressed structure.

In the process of field implementation, lighting control has become a key variable affecting the atmosphere. Originally planned to use intelligent dimming system, due to budget constraints, LED

strip color temperature (2700 K-4000 K) and brightness were manually adjusted. After many tests, it is found that too bright environment will weaken the immersion of projection, while complete darkness will cause the audience to hesitate to act. Finally, the segmented lighting strategy is adopted: area A only retains the weak light guidance on the ground, area B relies on the projection light source, and area C introduces the soft top light to form the visual rhythm.

On the whole, although the practice is limited by technical conditions and exhibition scale, it initially verifies the effectiveness of spatial narration in expressing female identity issues. Although the technical means are basic, they are strongly coupled with the theme and have not fallen into the formal trap of "interacting for the sake of interaction". The synergistic effect of space, image and device makes abstract social experience obtain an embodied perceptual path.

5. Conclusions

This study attempts to respond to a structural problem through a specific artistic practice: when language can't bear the complex experience of women in East Asian society, can space and technology be used to make those emotions that are erased by daily life reappear? By changing the narrative of identity from linear narration to spatial experience, the work creates an immersive field with emotional movement as the core, so that the audience is no longer just a bystander who listens to the story, but a participant who feels depressed, hesitant and weakly released by the body. The significance of this transformation is not to provide a clear criticism or solution, but to create a "pause"-a moment when people have to face some familiar but long-neglected psychological States in the light, sound and touch.

In this process, technology does not pursue cutting-edge complexity, but serves the actual needs of expression. Of course, there are some limitations in the works, such as short exhibition period, single interactive form and lack of systematic records of audience feedback. In the future, if we can introduce richer perceptual techniques or make cross-cultural comparisons, this kind of practice may further expand the depth and breadth of its social dialogue.

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