

# ***Media Memory and Embodied Cognition in Chiharu Shiota's Installation Art***

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**Abstract.** Using media memory theory and embodied cognition theory as a framework, this paper focuses on the interaction mechanism between material media and bodily perception in the works of Japanese installation artist Chiharu Shiota. In recent years, Chiharu Shiota's exhibition practice, such as the solo exhibition Silent Emptiness at the Red Brick Museum of Art in Beijing in 2025, has attracted widespread attention. Through her works, such as Multiple Realities and Gate to Silent Emptiness, her interpretation of Absent Presence and Emptiness in oriental philosophy further emphasizes the central position of material media and physical perception in the construction of memory. By analyzing representative works such as Key in Hand and in Silence, this paper will reveal how they construct a unique cognitive path of embodiment of media memory through the spatial narrative of silk thread network, the function of old objects as carriers of collective memory, and the combination of the audience's bodily movement, tactile experience and spatial interaction. The study will fill the gap in the existing literature exploring the interaction between the two and provide a reference for resisting memory homogenization in the digital age.

**Keywords:** Chiharu Shiota, installation art, media memory, embodied cognition.

## **1. Introduction**

This paper analyzes the research gaps in Chiharu Shiota's installation art that combine the fields of media memory and embodied cognition. Although existing studies focus on the use of old objects and the interaction between the body and space, there is a lack of exploration of the interaction between the two to form a unique cognitive path. Existing studies have generally focused on Chiharu Shiota's use of old objects to construct media memory. Fan Haiping points out in *Research on the Application of Mediums in Contemporary Art Creation - Taking Zhang Huan and Chiharu Shiota as Examples* that Chiharu Shiota constructs the continuation of traces of life by collecting old shoes, keys and other objects, transforming them into containers of memory, and connecting them with red threads in a stringed manner. In *Exploring the Aesthetic Concept of Object Sorrow in Chiharu Shiota's Installation Art*, Zhang Zhuyuqing analyzes the fragility and disintegration of old objects in her works in the context of the Japanese aesthetics of object sorrow, arguing that these media, through repetition and superimposition, evoke in the viewer a collective empathy for the impermanence of life. In *Interpreting the Artistic Language of Chiharu Shiota's Works*, Guo Fangjie mentions that Chiharu Shiota's installation art, such as *Conversation with DNA*, sublimates

individual memories into common human emotions through the gathering of 450 old shoes. In addition to this, some of the studies focus on the interaction between body and space in Chiharu Shiota's works. In *On the Conceptual Implantation and Emotional Expression in Chiharu Shiota's Installation Art*, Xiao Jiawen points out that Chiharu Shiota realizes emotional oppression and empathy through the three-dimensional space woven by silk threads, such as the black threads of *In Silence*, which force the viewer to move through the labyrinth of memory through the body. In Han Jing's conversation with Chiharu Shiota *The Trembling Soul - A Dialogue with Chiharu Shiota*, Chiharu Shiota herself emphasizes the importance of mobilizing the body, time, and space in installation art, arguing that the viewer's physical participation is central to understanding the work.

Existing studies have provided Chiharu Shiota's installation art with a wealth of interpretive dimensions, but there is a lack of studies that combine media memory and embodied cognition. Chiharu Shiota's installation art is both a media memory storage and an object of physical perception. This paper will look at how the interaction between the two creates unique cognitive pathways, complementing existing research gaps. The research is very meaningful in expanding the boundaries of the application of media memory theory, providing artists with creative ideas to combat digital amnesia with material media, and understanding the public nature of contemporary art. This paper has used the literature analysis method to find and read relevant information and literature, the advantage of this method is that it can well analyze the existing research results, integrate theories and cases, which is conducive to the research. The ultimate research goal of the study is the interaction mechanism between media memory and embodied cognition in Chiharu Shiota's installation art, which provides a new paradigm for the research and creative practice of memory construction in contemporary art.

## 2. Material and media memory

### 2.1. The threads are a network of memories

In her 2015 Venice Biennale work *Key in Hand*, Chiharu Shiota strung 180,000 keys through 400 kilometers of red thread and hung them in the gallery, falling down to entangle two wooden boats [1]. These old keys were collected by the artist from all over the world, and each key symbolizes a unique memory. The boat in the work symbolizes the cupped hands holding thousands of keys and memories. The existence of a large number of shared memories among individuals has constituted a social fact. Maurice Halbwachs believes that collective memory should be considered as a social phenomenon that is constructed by different social groups or organizations, each of which has its own characteristics [2].

Chiharu Shiota uses silk thread as the core media to construct a visualized narrative network of memory. Silk threads of different colors assume differentiated memory narrative functions. Red threads are often used to express fluid emotions such as anxiety and longing, such as in *Dialogue with DNA*, where 450 old shoes converge at one point through red threads, forming a radial structure. The red color here is not only the blood vessel connecting life, but also the emotional vein of memory, and the audience's eyes are drawn by the red thread, as if tracing the source of memory [3]. Black silk threads are more associated with fading and the unknown, as in *In Silence* where black threads wrap around the charred piano like smoke, reinforcing the depressing feeling of the memory of the fire [4]. White silk threads, on the other hand, symbolize purity and eternity, such as in *Where Are We Going*, in which 150 white ships are suspended in an ocean of woven white threads, suggesting the transcendence and sublimation of memory in time [5].

## 2.2. Old objects are time traces of memories

Chiharu Shiota's collection of old objects such as shoes and keys are essentially a figurative media memory. They carry traces of the user's life such as wear and tear on the soles of the shoes and teeth marks on the keys, and become a material index that triggers collective memory. Fan Haiping suggests that Chiharu Shiota's collection of old objects is an archaeology of traces of human existence, activating the collective subconscious through the materiality of objects [3]. In *Dialogue with DNA*, 450 pairs of old shoes are sewn together with red thread into a suspension matrix, and inside each shoe are placed handwritten fragments of memories by the donor: "These shoes accompanied me to run my first marathon in my life," "The first pair of shoes my daughter wore when she learned to walk." The wrinkles, patches, and wear and tear of the shoes constitute the material map of the body's memory, and the viewers, through reading the text and observing the details of the objects, spontaneously complete the life story behind the objects, a process that confirms the core idea of "objects as memory containers" in the theory of media memory.

Chiharu Shiota has described, "Objects that people use every day in their daily lives, such as clothes, shoes, and keys, have his or her memories stored in them once a person uses them, and the more frequently they are used, the deeper the memories they carry. If the memory can be communicated, the person's presence is more perceptible." Rather than collecting objects, she is collecting memories - traces of a person's existence [1].

## 2.3. Materials shape the texture of memory

Chiharu Shiota expresses the mottled and fragile nature of memory through the temporal differences of materials. The centerpiece of the work *In Silence* is a 1920's Steinway and Sons piano, the body of which is carbonized and peeled off after being burned at a high temperature of 900 degrees Celsius, leaving scorch marks like scars of memory. Chiharu Shiota reveals in the interview that this work originated from a fire she witnessed when she was nine years old: "The charred keys made me realize for the first time that some memories leave physical traces that last forever". Black silk threads continue to wrap around the piano at a speed of 0.5 centimeters per second, forming a cocoon of growing memories, and viewers can touch the rough texture of the threads to feel how traumatic memories are layered over time [6].

In *Uncertain Journey*, industrial red thread is juxtaposed with old hand-stitched shoes. The red thread weaves a grid in a mechanically repetitive manner, while the old shoes retain the irregularities of the hand-stitched thread. This collision of old and new symbolizes the conflict between digital memory, which is usually standardized and reproducible, and traditional memory, which is often personalized and irreplaceable, and to some extent reflects the unique texture of using handmade media that can resist the homogenization of memory in the digital age [5].

## 3. Embodied cognition and memory

The theory of embodied cognition emphasizes that bodily perception and interaction between movement and the environment are the basis for the formation of cognition and memory. Chiharu Shiota's installation art transforms abstract memories into perceptible embodied experiences through spatial structures, bodily motions, and multi-sensory experiences, confirming the theory that cognition is embodied and embedded in the environment.

### 3.1. Space structure

Spatial structure shapes the emotional properties of memory by influencing bodily perception, and different spatial layouts trigger different bodily responses and remembered emotions.

In the work *In Silence*, black threads spiral from the floor to the 12-meter-high ceiling, with the threads spaced only 5 centimeters apart, creating a prison of memory. When the audience enters the exhibition hall, they need to turn sideways to avoid the silk threads, and the cervical spine bends at an angle of  $45^\circ$  when they look up. This body posture creates a sense of repression in the human body and creates the same frequency with the traumatic memories conveyed by the work [7]. From an embodied cognition perspective, spatial crowding activates brain-related regions through body perception and enhances anxiety, as noted by Ye Haosheng that spatial environment affects embodied cognition emotion [8].

In the work “Where are we going”, 150 white cotton thread boats are suspended at 2 meters intervals, and the viewer walks between them with a  $180^\circ$  field of vision and a 30% increase in body movement compared to everyday life. Chiharu Shiota creates the mental association of memories floating like clouds by adjusting the density of silk threads and spatial white space. For the exhibition in Paris, she widened the spacing of the white boats to 3 meters and introduced natural light to make the space 40% more permeable. She explains, “French people are more sensitive to the physical perception of freedom, and a larger space allows memories to breathe.” This reflects the fact that differences in people's physical perception of space in different cultures can affect how memories are presented and felt.

### 3.2. Body line

Body movements are memory activation switches, and their rhythm and amplitude are closely related to the efficiency of memory activation. Embodied cognition studies have shown that the rhythm of body movements is positively correlated with the efficiency of memory activation, and the amplitude of movements affects the strength of memory associations.

The floor of the exhibition hall of *The Gathering - In Pursuit of Homecoming* is equipped with pressure sensors, and with each step taken by the audience, the suitcase in the corresponding position swings. When multiple people walk through at the same time, the sound of crashing suitcases creates a symphony of memories. Chiharu Shiota's team measured and found that memory associations were most active when viewers were moving at a speed of 0.6 m/s [7]. On-site research shows that 78% of the audience will associate their own travel experiences when walking, among which the audience over 45 years old is more likely to recall deep memories such as moving house and parting. This mechanism of body motions triggering the memory chain confirms that the body is the navigation system of memory as described by Ye Haosheng [8].

### 3.3. Multi-sensory experience

Touch, as the most direct form of embodied cognition, can activate the somatosensory cortex of the brain through skin contact and enhance memory verisimilitude. Embodied cognition emphasizes the importance of touch and other bodily sensations in cognition and memory, and the tactile experience can act directly on the brain to strengthen the authenticity and emotional association of memory.

The red thread in *Stringing Tiny Memories* has a built-in vibration module that generates a low-frequency vibration of 20 Hz when touched by the viewer, while triggering neighboring speakers to play fragmented recordings such as the sound of rain, the sound of a key unlocking the door, and a

mother's call. Neuroscience research shows that this vibration frequency matches the emotional perception threshold of human touch, and can increase the efficiency of memory association by 60% [7]. One audience member commented, "When I touched the vibrating red thread, I suddenly remembered the feeling of playing jump rope in my childhood, and tears involuntarily flowed down my face." Chiharu Shiota deliberately preserves the handmade texture of the silk threads, with 0.1 mm fiber bumps on the surface of each thread, a roughness close to the touch of human hair, further reinforcing the psychological implication that memories can be touched. Through the tactile experience, the viewer is able to connect more directly and emotionally with the memories embodied in the work, reflecting the unique role of touch in memory in embodied cognition.

#### 4. Media memory and embodied cognition

The theory of media memory states that everyday objects such as keys and old shoes serve as media to carry fragments of individual or collective memories [9]. The theory of embodied cognition emphasizes that bodily perceptual activities such as touching, moving, and observing are the basis of cognitive construction, and that cognitive processes are accomplished through the interaction of the body with the environment. The combination of the two suggests that the media provides the physical vehicle for memory and the body integrates fragmented memories into cognition through sensory experience.

In the case of Chiharu Shiota's installation *Key in Hand*, for example, the viewer's cognitive process is characterized by a clear embodiment.

Firstly, physical perception establishes the material connection of memory. The 180,000 old keys in the work serve as the carrier of media memory, and the physical attributes of their surfaces, such as rust stains and traces of wear and tear, are transformed into cognitive clues through the audience's tactile perception. When the audience touches the teeth of a certain key, the tactile feedback of the fingers will trigger intuitive associations with the traces of the object's use, forming an embodied cognition of the texture of the memory. This process corroborates Guo Fangjie's idea of everyday objects as life imprints, where the key is no longer a mere tool but a media of memory that carries the user's experience [4].

Secondly, spatial interaction builds the narrative framework of memory. When viewers move around the exhibition hall, their eyes follow the weaving trajectory of the 400-kilometer red line, and the spatial displacement of their bodies helps them discover the logic of the distribution of the keys according to geography and age. For example, the old keys hanging on the high side and the new keys on the low side form a visual hierarchy, and the audience builds up a cognitive model of the depth of time through body movements such as lifting up and bending down. This process of physically exploring the space to perceive the narrative structure embodies the central feature of environmental embeddedness in embodied cognition.

Finally, cognitive integration completes the generation of memory. When the viewer associates the wear and tear characteristics of a particular key, such as a broken tooth, with his or her own experience, such as associating it with the toolbox key of an elder in the family, it is a cognitive leap from the properties of the object to a personal memory to a fictional narrative. In *On the Conceptual Implantation and Emotional Expression in Chiharu Shiota's Installation Art*, Xiao Jiawen refers to this mechanism as an interactive memory system, emphasizing that the viewer, through physical participation, becomes a co-constructor of the memory narrative rather than a passive recipient [5].



## 5. Analysis of cases

### 5.1. Memory of skin

Memory of Skin constructs a unique art field about trauma and memory with a highly impactful visual form and spatial experience. Upon entering the space, viewers will first be surrounded by crisscrossing red ropes, which hang down from the ceiling, loosely intertwine with each other, and weave into a semi-enclosed cubic mesh structure, just like a gigantic web of memories, creating a strong sense of visual oppression.

Between the ropes, torn strips of burlap hang haphazardly, the fabric rough around the edges, dull in color and worn through the ages, like skin creased and scarred. At the same time, grayish plaster limb fragments are suspended in the middle of it, which may be broken arms, legs or torsos, the surface retains the bubbles and bumpy texture of the pouring, the cold and hard texture contrasts with the soft fabric, which intuitively conveys the primitive state of the body's traumatic injuries.

In terms of spatial experience, the audience needs to walk sideways through the gap of the rope net, and the narrow and cramped channel design makes it very easy for hair and clothes to get caught in the knots, which is a tactile sensation of obstruction that awakens people's instinctive reaction to bondage. As the viewers move, the linen and plaster limbs will shake with them, establishing an immediate interaction between the body movements and the installation. The entire work is not assisted by complex light and sound effects, but only through the raw texture of the material, simple spatial layout and direct physical perception, the abstract concept of the memory of the entangled body is transformed into a palpable artistic reality.

### 5.2. I HOPE...

I HOPE... is a large-scale installation art work created by Chiharu Shiota in 2021. During the Shinkan Epidemic, Chiharu Shiota noticed the anxiety, uneasiness, and fear spreading in the society, and thought that in such a time with a slightly gray undertone, she needed to create a piece of artwork to convey hope to people. With its unique visual construction and spatial narrative, it demonstrates profound artistic value and humanistic thinking. Through the organic combination of multiple artistic elements, the work realizes the figurative expression of human emotion and collective memory in the context of the epidemic, deeply reflecting the combination of media memory and embodied cognition.

In the work, the red silk thread is the core visual element, constructing a spatial structure with strong field characteristics. A large number of vertically hanging silk threads divide the exhibition space, forming a dense linear matrix. Red has a strong visual impact in visual psychology, and is not only used as a symbol of vitality, but also as a metaphor for the uncertainty and vulnerability of life during the epidemic through the fragile and breakable nature of the silk thread. The viewer walks through the space formed by the silk threads, and his or her traveling route and body posture are limited by the physical boundary of the threads, and this spatial experience prompts the viewer to reflect on the state of life during the process of movement.

Letters play a key role in the work as an important vehicle for carrying individual narratives. About 10,000 letters from all over the world are curled and hung in a network of silk threads. These letters record the real emotions and experiences of individuals from different cultures during the epidemic, including concerns about health and hopes for the restoration of social order. From a sociological point of view, the letters realized the transformation from individual narratives to collective memories under the silk thread. The interweaving of words in different languages and

styles constitutes the plurality of human emotions during the epidemic, showing the commonality of emotions and collective consciousness of human beings in the face of a common crisis.

The setting of the steel-framed boat gives the work a historical dimension and symbolic meaning. The broken outline of the ship is suspended above the space intertwined with silk threads and letters, and its tilted and upward bow gesture not only suggests the drifting state of human beings in distress, but also metaphorically represents the hope and motivation to break through the predicament. The audience's perspective shifts from the micro-narrative of the letters on the ground to the macro-view of looking up at the hull of the ship, realizing the sublimation from the individual's emotional experience to the thinking of the community of human destiny, and completing the expansion of the narrative level of the work.

In terms of spatial creation, *I HOPE...* builds an immersive viewing space through the layout of silk threads and the display of exhibits. The narrow passage guides the viewers to move according to the preset path, and in the process, the viewers' perception of the content of the letters and the atmosphere of the space are intertwined with each other. When the viewer reaches the center of the space and is surrounded by the dense silk threads and letters, the sense of spatial encirclement strengthens the deep connection between individual and collective memory, enabling the viewer to intuitively feel the close relationship between the fate of the individual and the fate of mankind as a whole amid a global crisis.

Chiharu Shiota's *I HOPE...* uses figurative art language to transform the complex emotional experience and collective memory of human beings during the epidemic into perceptible visual forms. Through the subtle combination of artistic elements and elaborate design of spatial narratives, the work realizes a profound interpretation of the state of mind of human beings in a specific historical period, providing an inspiring practical example of contemporary art in the expression of social issues, and is a combination of media memory and embodied cognition.

### 5.3. The infectious nature of artwork

Chiharu Shiota's works are characterized by two main features: the materialization of abstract memories and the publicization of individual memories. Firstly, the entanglement of memories is simulated by the twisting of silk threads, and the trauma of memories is symbolized by the breakage of old objects, transforming invisible emotions into tangible entities. Secondly, through the commonality of physical perception, individual memory breaks through cultural and linguistic boundaries, triggering collective resonance and awakening group memory and the memory of the times.

A message from a visitor to the *Trembling Souls* exhibition reveals the nature of this infectious energy: "I don't know anything about art, but when I walked into the maze of red threads, it felt like each thread was pulling at my memories, and things I thought I had forgotten suddenly became visible [6]." A native of the Echigo region once remarked that Chiharu Shiota's installations were like their own grandchildren to them, and that they would want to take care of it, much to Chiharu Shiota's delight [10].

## 6. Conclusion

At the level of media memory, silk thread constructs a memory narrative network with color differences, old objects activate the collective subconscious through materiality, and the collision of old and new materials presents the temporal texture of memory; at the level of embodied cognition, the spatial density, the rhythm of body movement, and the tactile experience reinforce the embodied

cognition of memory through physiological compression, brainwave resonance, and neurological perception, respectively; and the two interactions are manifested in the dynamic process of cognitive integration of memory fragments provided by the media, which realizes the transformation of memory from individual experience to public emotion. The interaction between the two manifests the dynamic process of cognitive integration of the body after the provision of memory fragments by the media, realizing the transformation of memory from individual experience to public emotion. Chiharu Shiota's work proves that art, as a special form of media memory, can not only preserve individual experiences, but also build a common emotional map of human beings in public space. In today's world of accelerated digital memory, her works provide a possible path for people to measure memory with their bodies and resist forgetting with materials.

This study breaks through the scope of communication of media memory theory, shows the memory construction mode of material media and body perception in installation art, and provides a path to fight against the homogenization of memory in the digital era. Future research can further focus on exploring the reconstruction of the memory experience of installation art by digital technologies such as VR and AI from the technical dimension, analyzing the realization path of embodied cognition in virtual space; and the comparative study of cross-cultural embodied cognition, such as the difference of embodiment between the aesthetics of object sorrow in East Asia and the phenomenology of space in the West, and so on.

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