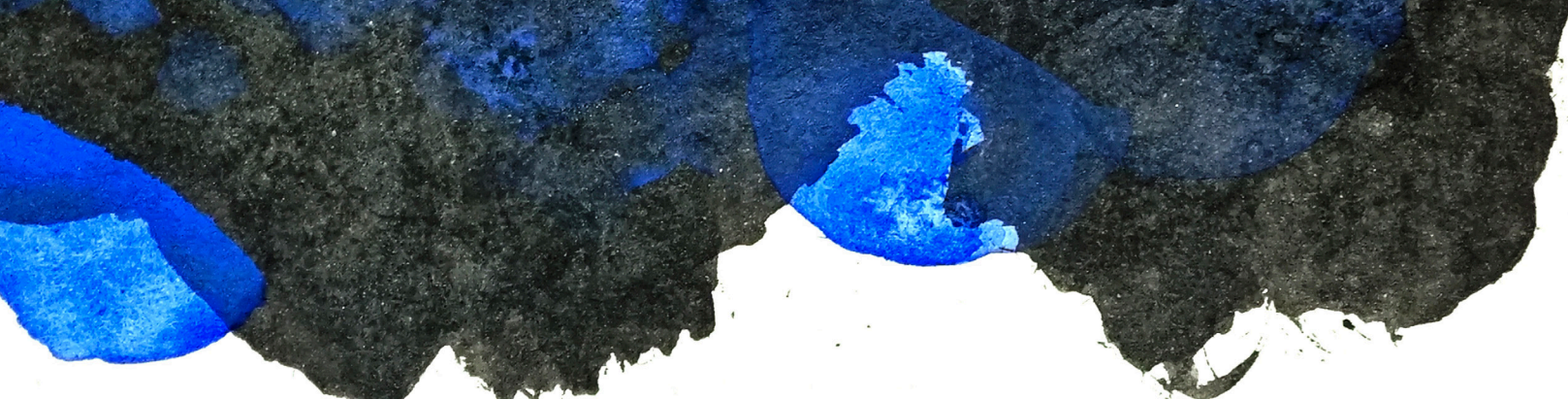




From Speculation to Immersive Space:

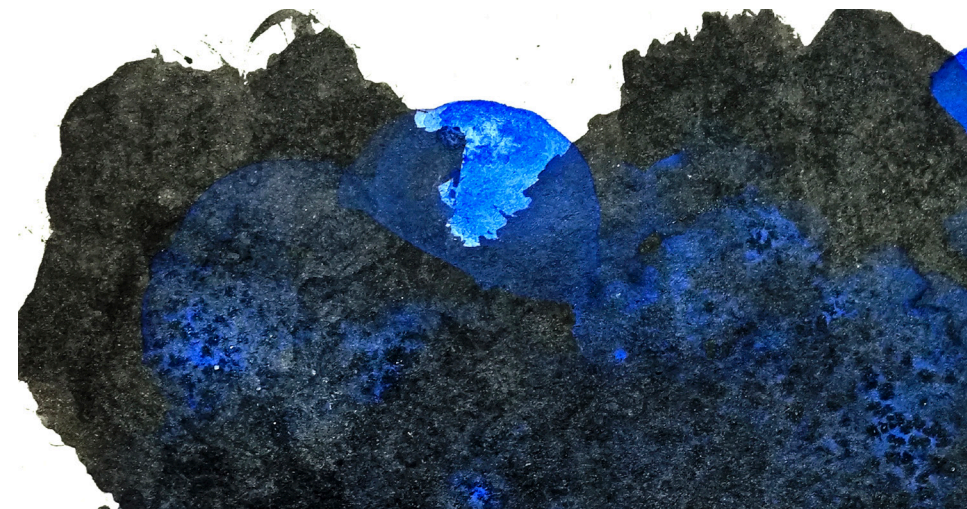
Designing Narratives about Emotionally Diminished Futures

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Exegesis in support of practice-based thesis

Master of Design

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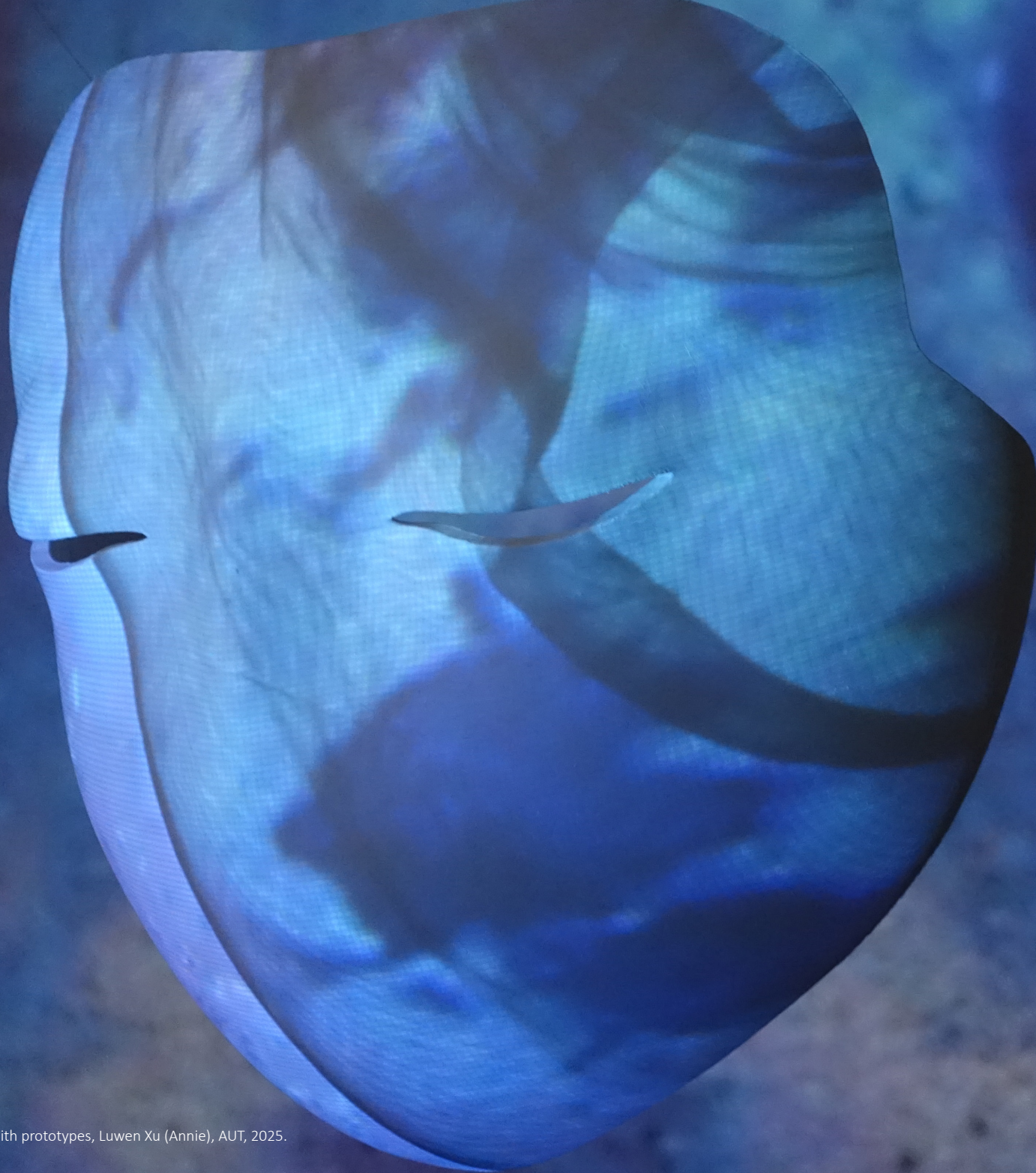


Figure 1. Projection testing with prototypes, Luwen Xu (Annie), AUT, 2025.

Abstract

This practice-based research explores how speculative performance design, developed through hybrid scenographic practices, can create immersive narrative spaces that prompt emotional and critical reflection on imagined futures of emotional diminishment. This speculative premise forms the core of the project, envisioning a distant civilisation that has lost empathy, creativity, and emotional depth and fails to reclaim these qualities. The scenario provides a lens through which to reconsider the vulnerability of human experience in technologically accelerated societies. Rather than providing a linear narrative, the research translates speculative ideas into spatial, sensory, and performative experiences.

Methodologically, the research adopts a hybrid scenographic approach that combines virtual production and physical fabrication. Digital modelling, VR testing, animation, and material experimentation are used to explore spatial scale, atmosphere, and embodied experience. This dual-pathway process creates a feedback loop between virtual and physical experimentation, positioning making and testing as forms of inquiry.

Through performative elements such as light, sound, projection, and large-scale installation, the project invites visitors to construct meaning through movement, perception, and interpretation. The resulting installation creates a speculative scenographic environment that challenges the conventional boundary between audience and stage. Chinese bronze script (Jinwen, 金文) is also used as a semiotic and performative element. Its pictographic qualities and varying degrees of legibility transform language into spatial form, allowing meaning to emerge through perception and interpretation rather than direct communication.

This research brings speculative design and performance design together through hybrid scenographic practice to explore how imagined futures can be encountered through embodied spatial experience. Rather than providing solutions, the project uses immersive speculation to question what might be lost, and what may remain valuable, in futures shaped by technological acceleration and emotional diminishment.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the Acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

April 27, 2026

Acknowledgement

I would like to express my sincere gratitude to my supervisors, Nooroa Tapuni and Dafydd Sills-Jones, for their continuous support throughout this research. Their insightful feedback, encouragement, and guidance have been invaluable in shaping both the direction and development of this project. They provided not only critical perspectives but also the freedom to explore and grow, making this a deeply meaningful and rewarding journey.

I would also like to thank all the technicians at the AUT 3D Lab, especially Glenn Maxwell, for their generous assistance and technical expertise. Glenn's ability to solve complex challenges with clarity and ease greatly supported the realisation of this project, enabling ideas that once seemed difficult to become achievable.

My sincere thanks also go to my peers, Paul, Bryre, Emma, Julian, Jasmine, Alfred and others, for their companionship, encouragement, and countless helpful suggestions. Their presence and support have made this experience far more enriching and collaborative.

Finally, I am deeply grateful to my family, my mother, my sister, my partner, and my parents-in-law, for their unwavering emotional and financial support. Their trust and encouragement have been the foundation that made this research possible.



Figure 2. Projection testing with textile sample, Luwen Xu (Annie), AUT, 2025.

Positioning the Research

My research inquiry is about performance design and immersive storytelling, and I have been interested in that from a very young age. When I was ten, my mother took me to watch my first musical, *The Lion King*¹. We were sitting quite close to the stage, and I recall the extreme sensual impression from that experience. The size of the staging, the details of the props and costume, the performance and the sound occupying the space. But more importantly, the realisation that emotion could be shaped through spatial and performance design. It was the start of the long-standing interest in live performance. During the subsequent years, I watched a lot of stage performances, including musicals and choreodramas, such as *Les Misérables*², *The Phantom Of the Opera*³, *Swan Lake*⁴ and *The Peacock*⁵ by Yang. I gradually developed a deep fascination with the theatrical space as a place of emotional experience.

My knowledge of performance changed substantially once I was introduced to immersive theatre. Works like *Sleep No More*⁶ and Wang Chaoge's *Unique Dream of Red Mansion*⁷ have shown me that the traditional format of the theatre, where people sit and watch the action, was not the only approach to experiencing stories. I was no longer observing from a fixed viewpoint. Rather, I was physically engaged in the unfolding of the work, moving in space, making decisions and creating my own direction in the story. These reminiscent experiences have a deeper impact on me than the conventional theatre. I became increasingly drawn to this form of engagement because of its potential to create richer and more embodied memories.

1 'Disney THE LION KING | The Award-Winning Best Musical', accessed 9 February 2026, <https://lionking.com/>.

2 'Les Misérables | The Official Global Website', <https://lesmis.com/>, accessed 9 February 2026.

3 'The Phantom of the Opera', accessed 9 February 2026, <https://www.thephantomoftheopera.com/>.

4 'Swan Lake', accessed 12 August 2026, <https://www.rbo.org.uk/production/swan-lake-marius-petipa>.

5 'Dance Drama The Peacock', accessed 9 February 2026, <https://chaoyang.wufoo.com/forms/z1hcq1zd1j1eknl/>.

6 'Sleep No More by Punchdrunk | Immersive Live Shows Experience', accessed 9 February 2026, <https://www.punchdrunk.com/work/sleep-no-more-shanghai/>.

7 'Unique Dream of Red Mansion', BaiduWiki, accessed 26 April 2026, <https://baike.baidu.com/en/item/Unique-Dream-of-Red-Mansion/665580>.

This realisation shaped my inquiry into research. During my undergraduate studies in themed environment design, I started to consider how stories can be told using spatial layout, interaction planning, ambience building, and material fabrication instead of text only. The environment was turned into a narrative medium. This line of thinking still supports the current effort of research, which examines the possible way performance design can function as a tool for storytelling and emotional engagement in immersive space settings. I became more charmed by how designed spaces could empower meaningful and engaging experiences. I also started to notice a concerning change in my daily life, where interactions became more virtual, passive, and divided.

Thus, one of the crucial questions raised in this project is what kinds of emotions, humanness and knowledge might be depleted in technologically fastened futures? My concern about this issue is based on my personal experience. I have grown up in an age where technology was very basic in its function, and screen time was minimal. In comparison to it, my current life is overpowered by screens. Though the information seems more accessible and learning seems to be more efficient, I have increasingly felt a rise a sense of numbness and passivity. The bar of enjoyment has steadily been elevated by being used to shorter types of media content. As a consequence, it's more difficult to tolerate slower and more contemplative forms of interaction. I tend to absorb information quickly rather than critically learning it, even in educational content.

The tension has also been enhanced by the rapid development of artificial intelligence. To exemplify, when my plant gets sick, I do not bother to research what could be causing it and study plant care; instead, I just upload a picture to an artificial intelligence system and request it to provide me with the information on what to purchase. Although AI offered an effective remedy, it also circumvented the process of observation, learning and critical understanding. This increasingly depends on automated knowledge prompts, raising questions about what sort of experience, knowledge and emotion can be erased in the technologically accelerated futures.

These experiences did not lead me to reject technology itself. Instead, they prompted a critical concern about what may be displaced when efficiency replaces slower processes of observation, learning, and emotional engagement.

Drawing on these concerns, I resonate strongly with Liu Cixin's short novel *Taking Care of Gods*⁸, where an alien civilisation was destroyed by entrusting everything to technology. Their abilities to work and learn are gradually lost in the story, and the society is left with no sustainability. I found the tragedy of destruction is not the most striking, but the belated desire of the aliens towards the simplicity and vitality of human life. This speculative narrative made me think about the vulnerability and dependency of the human spirits that are taken for granted.

These reflections were further expanded through personal experience during a period of enforced isolation, when my city went through a COVID lockdown. Spending several months living alone, without working and social contact, my life had become a routine list of actions and survival on the level of basic needs. It was at this period that I learned more clearly how meaning is produced through labour, learning, and interaction with other people. The lack of these factors created a strange feeling of emptiness and increased loneliness, which reinforced my interest in emotional connection as a fundamental condition of being human.

Another personal experience of loss came from my relationship with Chinese characters. Through learning Chinese calligraphy in high school, I was introduced to traditional characters, historical scripts, and the evolution of Chinese writing. While I recognise the practical advantages of simplified Chinese for communication and education, I also became aware of the visual and narrative qualities that can become less visible through simplification. For example, the traditional character '樂' (lè, joy) developed from an earlier pictographic form associated with music, depicting a stringed instrument constructed on a wooden frame, together with a plectrum used to play it. The association between music and pleasure gradually extended

the character's meaning from music to joy and happiness. In its simplified form, '乐', much of this visual structure is no longer immediately visible. This became an initial experience of cultural loss for the project: the character remains functional and readable, while part of its visual history becomes harder to perceive. My previous study of calligraphy also gave me the ability to recognise historical scripts, which later became an important personal reason for working with Jinwen as a visual and narrative form.

All these experiences, the initial exposure to theatrical spectacle, the sense of immersion, digital oversaturation, speculative fiction, and isolation, all come together to ground the personal and conceptual standpoint this research will develop. This project understands emotional diminishment not only as the loss of feeling but also as the erosion of curiosity, embodied learning, cultural memory, and the capacity to interpret inherited forms. 下、Also aims to create speculative narrative spaces that invite reflection, asking questions about what is lost, what persists, and what might still be worth protecting in the future. Building on that, performance design plays a core role in exploring how emotion, imagination, and compassion can be represented through designed experiences.

⁸ Cixin Liu, *Taking Care of Gods*, trans. Ken Liu, with Han Zhang (Beijing Qingse Media Co., Ltd., 2012).

Introduction

This study is based on the personal, cultural and experiential background described above to examine how speculative⁹ performance design¹⁰ can be employed to create immersive narrative spaces¹¹ that encourage emotional and critical thinking about an assumption of an imagined future of emotional diminishment. Here, the term describes a hypothetical future whereby technological acceleration is slowly demolishing curiosity, empathy and emotional richness, which are attributes that are normally perceived to be at the core of human experience. Instead of using science fiction as a source of narratives to be retold, the project uses speculation as a design approach that establishes some distance from the present, in order to re-examine what is often taken for granted in daily life.

9 Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming* (MIT Press, 2013).

10 Dorita Hannah and Harsløf Olav, eds, *Performance Design* (Museum Tusculanum Press, 2008).

11 Josephine Machon, *Immersive Theatres: Intimacy and Immediacy in Contemporary Performance* (Bloomsbury Publishing, 2017).

The project takes the framework of a hypothetical narrative: a distant alien civilisation does not view humanity as an enemy, but as something vulnerable, confusing, and filled with emotions. The alien species in this imagined future is deprived of the ability to feel, to be creative and empathetic. Similar framing is informed by the science fiction novel of Liu Cixin¹², especially how he uses external perspectives by creating alien races, in order to reflect on the vulnerability of human beings. His work, however, serves here as a conceptual point of departure rather than a narrative to be illustrated. The project transcends literary adaptation, where performance design and spatial experience transform speculative questions into embodied experiences. Narrative is then not delivered by written texts; it is conveyed by atmosphere, material, performance and by the journey of the visitors.

In this context, performance design can be regarded as a form of thinking through space. Using immersive installation and virtual production, the study examines how scenography can work as an active storytelling tool, instead of a passive container. Visitors are not simply spectators of a finished work; their movement, attention, and sensory perception shape how the narrative is encountered and interpreted. Participation, therefore, occurs through embodied experience and individual meaning-making. This approach questions traditional boundaries between stage and audience, representation and experience.

The overarching research question guiding this study is:

'How can speculative performance design, developed through hybrid scenographic practices, construct a narrative space that invites emotional and critical reflection on imagined futures of emotional diminishment?'

¹² Liu, *Taking Care of Gods*.

Three sub-questions guide the project:

- **Sub-question 1:** 'How can spatial design dissolve the stage–audience divide and encourage embodied participation?'
- **Sub-question 2:** 'In what ways can Chinese characters act as performative devices within immersive installations?'
- **Sub-question 3:** 'How can the layering of digital and physical scenography extend current practice in performance design?'

The methodology of the research is practice-based, where making is a form of inquiry, not only to visualise the results, but also to test ideas, expose constraints, and pose additional questions. In the meantime, immersive installation, material prototyping, digital modelling, animation, sound design, and virtual production are used as methods.

Ultimately, the project aims to decelerate perception, increase sensory awareness, and generate space to reflect through speculative performance design. Developed through a hybrid approach that moves between physical fabrication and virtual spatial visualisation, enabling each to inform and challenge the other in an iterative process. The research contemplates what might be irreducibly human amid a technological acceleration, outsourcing of emotions and a loss of embodied experience by simulating the imagined futures via the use of immersive environments.

Literature Review

This literature review brings together speculative design and performance design as the primary conceptual frameworks of the project, supported by perspectives on narrative, scenography, and cultural symbolism. Their convergence forms what I describe as speculative performance design, using imagined futures to raise critical questions and translating them into embodied spatial and sensory experiences. These perspectives are further developed through the literature and precedents discussed below.

At the conceptual direction level, the *Speculative Everything*¹³ by Dunne and Raby offers a valuable platform for the comprehension of design as a medium of inquiry, as opposed to a clear definition of defined problems¹⁴. Their work positions speculative design as a practice that constructs hypothetical scenarios, using imagined futures to prompt reflection on the present¹⁵. This has had a direct impact on the conceptual direction of my project, as my intention is not to offer practical solutions to technological acceleration, but rather to construct a fictional scenario through which the audience can re-examine the value of emotion, imagination and human vulnerability. What I gained from Dunn and Rabin was not only the 'what if...' approach, but also their emphasis on ambiguity, provocation and open-ended reflection¹⁶. This has influenced my choice not to use a didactic narrative. Simultaneously, this has made me realise a challenge: while openness allows for multiple interpretations, excessive ambiguity may make it difficult for the audience to form a meaningful connection with the work. Rather than clarifying the content to the audience, I would want to create a speculative atmosphere that would allow room for uncertainty, interpretation and emotional reflection. In this sense, speculation also establishes the conditions for critical reflection within the project. By creating distance from the present through an imagined future, the

fictional alien civilisation allows familiar assumptions about technological development, emotional experience and human values to be reconsidered from an unfamiliar perspective. Rather than establishing a fixed critical position in advance, this speculative framework provides a starting point from which critical questions can emerge and develop through practice.

The work of Liu Cixin, especially *Taking Care of Gods*¹⁷, inspired me to adopt a narrative structure designed to reduce ambiguity and present these concepts in a more tangible and emotionally relatable way. In *Society and Utopia in Liu Cixin*¹⁸, Adrian Tillet points out that Liu Cixin's narratives reveal the contradictions of civilisation, showcasing both its potential and its fragility. His works do not focus on isolated events, but rather reflect broader issues related to technological development, global inequality and the state of modern society.

In *Taking Care of Gods*¹⁹, Liu depicts a once-powerful alien civilisation that, having given up its autonomy to a technological system, becomes completely reliant on machines. Notably, this decline does not appear to be a sudden collapse, but rather manifests as a gradual loss of purpose and vitality. Through this portrayal, the story brings out how vulnerable even the most highly developed civilisations become once they lose the ability to sustain themselves. This storytelling logic guides my project as it hints at how to ground speculative and abstract concepts in an organised fictional scenario. Although speculative design stimulates open-ended questioning, my project does not leave interpretation entirely unrestricted. Rather, it adopts the perspective of an alien civilisation attempting to comprehend human emotions, creating a context that is unfamiliar yet accessible.

¹⁷ Liu, *Taking Care of Gods*.

¹⁸ Adrian Thieret, 'Society and Utopia in Liu Cixin', *China Perspectives* 2015, no. 1 (2015): 1, <https://doi.org/10.4000/chinapersonpectives.6643>.

¹⁹ Liu, *Taking Care of Gods*.

¹³ Dunne, *Speculative Everything*.

¹⁴ Dunne, *Speculative Everything*, 57.

¹⁵ Dunne, *Speculative Everything*, 33–36.

¹⁶ Dunne, *Speculative Everything*, 102.

In this way, the project aims at achieving a balance between openness and accessibility. Though the speculative framework encourages it to remain ambiguous and open to interpretation, the narrative structure offers a means of entry through which the audience can engage with the work. With this approach, the work by Liu aids in the resolution of the aforementioned challenges, allowing the project to be conceptually open and allowing meaningful interaction with the audience.

This project is also influenced by the *Performance Design*²⁰ by Hannah and Harsløf. They describe 'performance design' as a fluid and emerging field, and note a shift from the static principle of the autonomous art object towards the dynamic principle of creating an embodied spatio-temporal event. Building on that, 'performance design' in this project is understood as crafting a narrative through multiple disciplines, positioning design itself as part of the performative event. It therefore involves not only spatial design, but also the construction of narrative through spatial and sensory elements such as environment, lighting, atmosphere, projected imagery, and sound. Together, these elements shape how the audience perceives and experiences the narrative.

In terms of spatial strategy, space is therefore not considered simply as a container, but as an element that can actively shape the experience of performance. Hannah & Harsløf emphasise the connection between performance, spectator and site as key to the process of creating meaning, and that space is not only functional, but carries meaning in itself²¹. In this context, meaning is not predetermined, but it is created as a result of the interaction of visitors, materials and particular conditions of a site. Spatial dynamics of a place are critical, and the relationships between performers and spectators are continually changing. This implies that the audience is not just observing, but they are actively engaged in the interpretation of the experience and in realising their own position within the space. Within this project, the organisation of movement, position and perception allows the visitor's bodily journey to become part of how the narrative unfolds.

²⁰ Hannah and Olav, *Performance Design*.

²¹ Hannah and Olav, *Performance Design*, 39-45.

As a supporting perspective, Pine and Gilmore's concept of *The Experience Economy*²², is useful for considering how experiences can be deliberately staged. They position the development from delivering goods to staging experiences as a new form of economic offering²³. They define the 'experience economy' as one in which value is created through immersive and memorable engagement. They further argue that, as goods and services are no longer sufficient to generate value, experiences must be deliberately staged as a distinct form of economic offering. This suggests that environments can be designed as performative settings in which audiences are immersed and actively involved²⁴.

However, while Pine and Gilmore frame experience primarily in economic and commercial terms, where experiences are deliberately staged to generate value, this also reveals a limitation: experience risks becoming instrumentalised as a tool for consumption rather than for critical reflection. In contrast, performance design proposes a more open-ended and interpretive approach, in which meaning is not pre-determined but emerges through the interaction between space, material, and participant. This distinction is important for my project, which seeks not to optimise engagement as a measurable outcome, but to create conditions for reflection and emotional response.

In response, my project adopts only the idea of staging experience, repositioning it within a speculative and narrative context rather than an economic one. Space is created as an experiential domain and not a predetermined extravagance where visitors create meaning by moving and engaging with the installation. Space, perception, and materials, light, and the composition are used to form perception and atmosphere, helping to create an immersive and affective experience, opposed to a single or predefined narrative.

²² B. Joseph Pine II and James H. Gilmore, *The Experience Economy*, Updated Edition (Harvard Business Press, 2011).

²³ Pine and Gilmore, *The Experience Economy*, Updated Edition, ix-x, 45-47.

²⁴ Pine and Gilmore, *The Experience Economy*, Updated Edition, xviii.

In this way, the project will translate the concepts of speculation to a lived experience by letting the meaning emerge in the process of participation, rather than explanation. In doing so, it maintains a balance between openness and accessibility, offering a structured yet indeterminate experience. In this sense, performance design provides the primary framework for understanding how meaning is produced spatially, while the experience economy offers a secondary critical lens through which the staging of experience can be reconsidered.

Following the earlier discussion of narrative framework and spatial form, this project develops a series of installations to materialise the constructed narrative environment. In attempting to simulate how an alien civilisation might learn and interpret human emotions, I encountered a key difficulty: how to visualise something that is inherently abstract, culturally embedded, and not fully translatable into a stable visual language.

Accordingly, in *Masterpieces on Japan by Foreign Authors*²⁵, Yasuo Kobayashi's view on Roland Barthes' *L'empire des signes* (1970)²⁶ is particularly influential at this point. As Kobayashi emphasises, Barthes does not attempt to produce a coherent analysis or fixed interpretation of Japanese culture; rather, he approaches it as 'a centre of endless fascination', resisting any effort to fully understand or stabilise its meaning. Within this framework, signs are not treated as carriers of fixed meaning, but as phenomena that can be encountered and engaged with without being fully comprehended. Kobayashi highlights that Barthes tries to read Japan as something that cannot be read,²⁷ suggesting that incomprehensibility does not prevent interpretation, but instead sustains it. In this sense, signs do not need to be decoded in order to operate; their opacity can itself become a source of fascination and engagement.

²⁵ Shōichi Saeki and Tōru Haga, eds, *Masterpieces on Japan by Foreign Authors: From Goncharov to Pinguet* (Springer Nature, 2023), <https://doi.org/10.1007/978-981-19-9853-9>. pp. 195-198

²⁶ Elizabeth Frick and Roland Barthes, 'L'empire des signes', *Books Abroad* 45, no. 2 (1971): 369, <https://doi.org/10.2307/40125458>.

²⁷ Yasuo Kobayashi, 'Roland Barthes L'empire Des Signes (1970)', in *Masterpieces on Japan by Foreign Authors: From Goncharov to Pinguet*, ed. Shōichi Saeki and Tōru Haga (Springer Nature, 2023), https://doi.org/10.1007/978-981-19-9853-9_35.

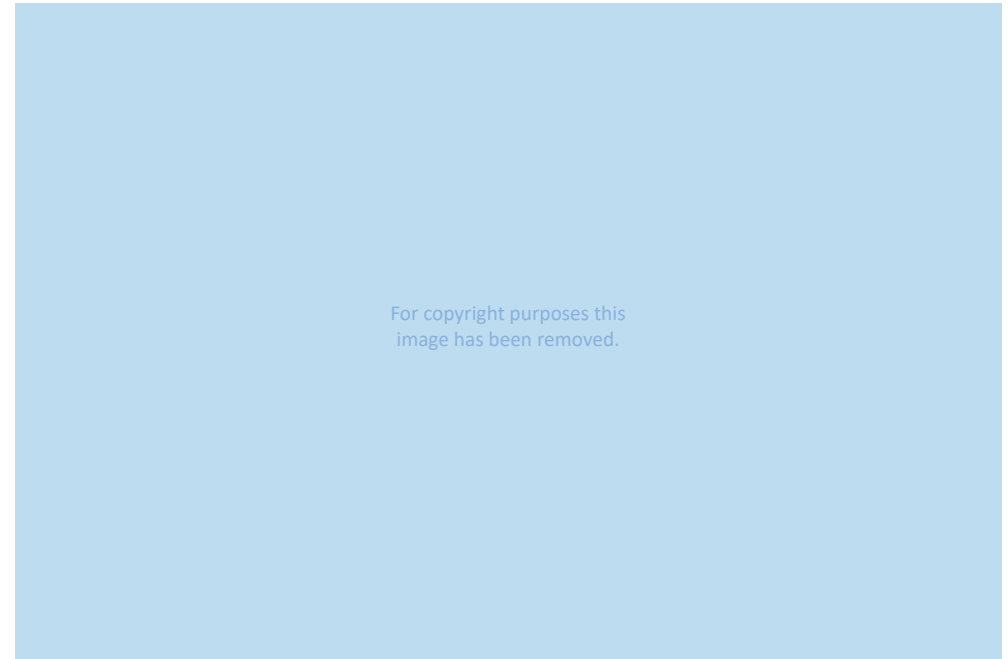


Figure 3. *Din blinde passager*, Studio Olafur Eliasson, Photo by Thilo Frank / Studio Olafur Eliasson, ARKEN Museum of Modern Art, Copenhagen, 2010.

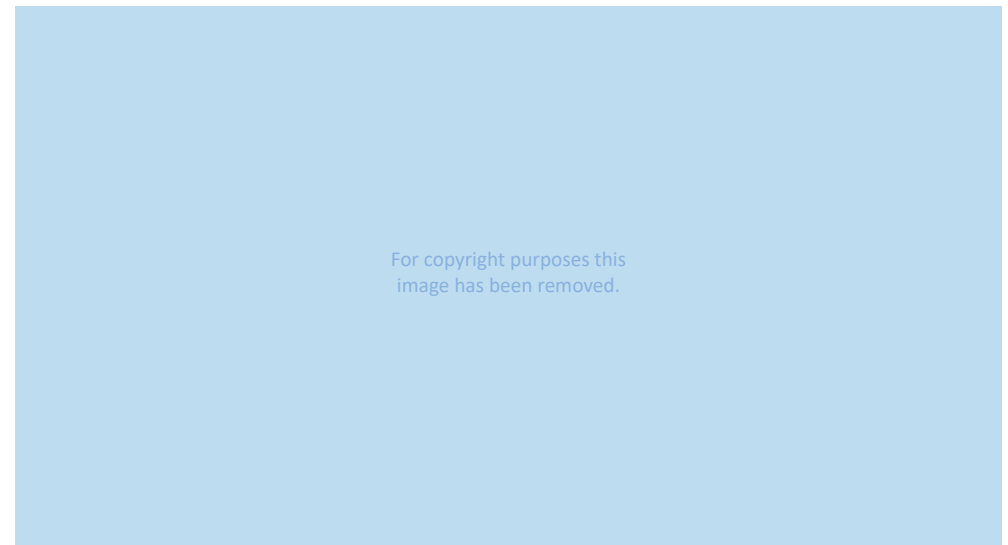


Figure 4. *Din blinde passager*, Exterior, Studio Olafur Eliasson, Photo by Thilo Frank / Studio Olafur Eliasson, ARKEN Museum of Modern Art, Copenhagen, 2010.

This perspective reframes my approach to visualisation. Instead of attempting to clearly represent or explain emotional concepts, the project embraces partial legibility and interpretive uncertainty. Bronze-script Chinese characters (Jinwen, 金文)²⁸ are therefore not used as readable text or as direct cultural representation, but as fragmented signifiers that remain only partially accessible. Their function is not to communicate meaning transparently, but to evoke a condition in which meaning is continuously deferred and reconstructed through encounter.

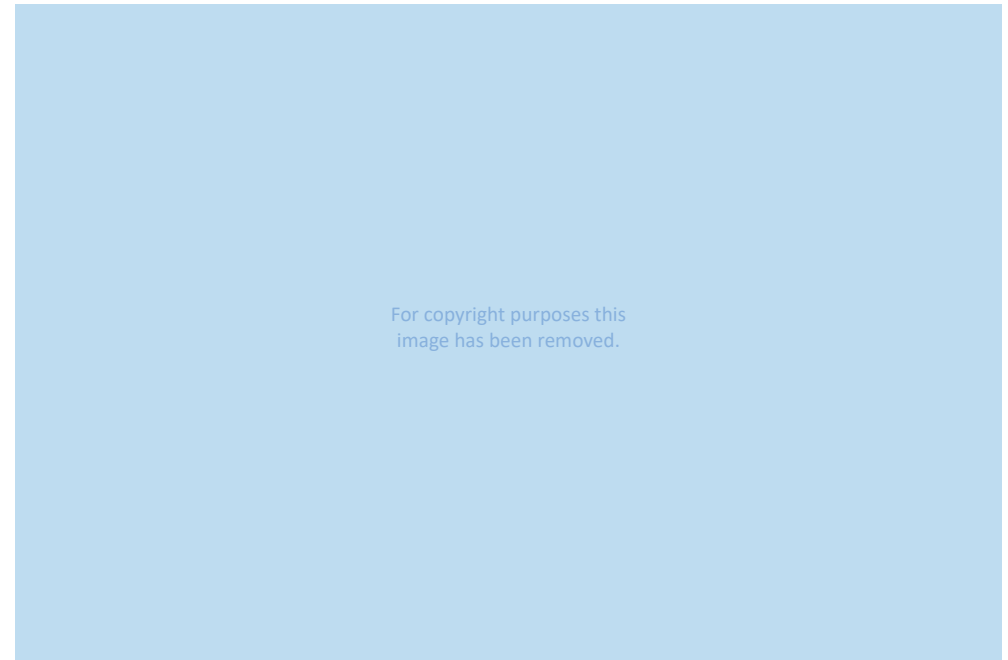
In design terms, Jinwen are treated as a spatial element rather than readable text. Their fragmented and partially legible forms create a sense of uncertainty, reflecting an alien attempt to interpret human emotion. Ambiguity here becomes a deliberate strategy, shifting the work from explanation to experience.

Building on the previous discussion of symbolic ambiguity, Olafur Elíasson's²⁹ installations offer useful precedents for exploring how immersive environments can trigger self-directed, perceptual engagement. The viewer transforms from a passive observer to an embodied participant thanks to his use of colour, light, and atmospheric conditions like fog, humidity, and refraction. For instance, Elíasson constructs a 90-meter fog-filled corridor in *Din Blinde Passager* (see Figures 3-4)³⁰, where visibility is practically nonexistent. Visitors who lack visual clarity may depend on other senses to navigate uncertainty and increase attention.

28 'Jinwen (Chinese Bronze Inscriptions)', ULearning Labs, University Museum and Art Gallery, The University of Hong Kong, n.d., accessed 14 August 2026, <https://ulearninglabs.umag.hku.hk/en/dictionaries/jinwen-chinese-bronze-inscriptions/>.

29 'Studio Olafur Eliasson', accessed 26 March 2025, <https://olafureliasson.net/>.

30 'Din Blinde Passager • Artwork • Studio Olafur Eliasson', accessed 2 April 2025, <https://olafureliasson.net/artwork/din-blinde-passager-2010/image/19631>.



For copyright purposes this image has been removed.

Figure 5. *Qi Wen Ruo He*, Wang Chaoq (Director), Photo by Pan Jianxun, *Unique Dream of Red Mansion*, Langfang, Hebei Province, 2023.

This visual confusion echoes the theatrical value of space described by Hannah and Harsløf³¹ and the open-ended symbolism in Barthes' linguistic model³². Elíasson avoids administering meaning; he stages spatial situations that prompt personal reflection. According to him, museums and installations 'enhance customers' awareness, focus, and openness'³³, creating the circumstances for cognitive and emotional shifts. Material contrasts, changing light, and metaphorical voids are all valued methods that I incorporated into my design, which encourage inquiry and reflection. I construct environments that require visitors to find their own path through narrative cues. The result is a narrative experience that is

31 Hannah and Olav, *Performance Design*.

32 Kobayashi, 'Roland Barthes L'empire Des Signes (1970)'.

33 'Din Blinde Passager • Artwork • Studio Olafur Eliasson'.

both reflective and immersive. These concepts inspired my illumination and materials tests, which aim to trigger changes in perception through simple changes, more than visual spectacle. I want to create a non-ending narrative that demands agency, similar to Elíasson's design of ambiguity as a situation of active perception.

Building upon explorations of performance design and cultural symbolism, artistic director Wang Chaoge's³⁴ work demonstrates how narrative, space and cultural classics can be integrated into an immersive environment. As a leading figure in China's large-scale live performance industry, Wang Chaoge's project, *Unique Dream of Red Mansion*³⁵, transforms the classical novel *Dream of the Red Chamber*³⁶ into a system of spaces and experiences. Rather than attempting to define the story itself, the project constructs a multi-layered theatrical environment comprising multiple indoor theatres and hundreds of scenic spaces, within which audiences encounter fragments of the narrative as they move and transition between spaces.

A striking example is the installation space titled *Qi Wen Ruo He* ('How Is the Writing?') as Figure 5. In that space, the text here serves both as structure and as performance. The ceiling is covered with cut-out Chinese characters, with two layers of text superimposed upon one another. In natural light, the projected text appears fragmented and illegible, scattered across the floor like abstract visual traces. However, at specific moments, these fragments rearrange themselves to form complete passages from the novel. Audiences standing in the centre of the space thus become part of this shifting perceptual system. Each individual's interpretation of the text varies according to the time, light and perspective.

34 Wang Chaoge, 'Unique Dream of Red Mansion', BaiduWiki, accessed 26 April 2026, https://baike.baidu.com/en/item/Wang_Chaoge/15068.

35 BaiduWiki, 'Unique Dream of Red Mansion'.

36 Cao Xueqin and Gao E, *Dream of the Red Chamber*, trans. David Hawkes (Harmondsworth: Penguin Books, 1973).

For copyright purposes this image has been removed.

Figure 6. *Gravitational Arena*, Mixed media installation, Xu Bing (Artist), Museum of Art, Pudong, Shanghai, 2021.

This spatial strategy strongly embodies the mentioned principles of performance design, wherein space is no longer a passive container but becomes an active narrative agent. As Hannah and Harsløf describe, meaning arises from the interactive relationship between performance, audience and venue, rather than from fixed representations³⁷. In Wang Chaoge's work, the text is no longer confined to the page but extends into the environment, to be experienced through movement and perception. At the same time, the fragmentation and reorganisation of language echo Barthes's understanding of the sign, that it is an open and unstable system whose meaning is not entirely fixed but is generated through interpretation³⁸. The audience does not merely read the text but navigates through it, reconstructs it, and ultimately participates in the process of meaning-making.

Wang Chaoge demonstrates how literary content is transformed into spatial design, wherein ambiguity, fragmentation and temporality allow meaning to unfold gradually rather than being conveyed directly. This approach has inspired my own design, particularly in the use of Chinese characters as spatial and symbolic elements. Nevertheless, unlike Wang Chaoge's work, using original text passages, allowing the words to fulfil their textual function, the Chinese characters in my installation remain partially illegible, existing as cultural symbols representing abstract concepts. This shift reinforces the project's speculative nature; meaning is not reduced, but rather invites interpretation. Within this framework, language, emotion and understanding remain in a state of incompleteness, requiring the visitor's perception and experience to bring them to fruition.

Following Wang Chaoge's exploration of spatialised text, the famous Chinese contemporary artist Xu Bing has put forward a more radical conception of language and legibility. Known for his conceptual explorations of linguistics and cultural symbols, Xu Bing has devised *Square Word Calligraphy*³⁹, a new form of writing that resembles Chinese characters but is in fact written in English, making it difficult to comprehend.

³⁷ Hannah and Olav, *Performance Design*. 39-45.

³⁸ Kobayashi, 'Roland Barthes L'empire Des Signes (1970)'.

³⁹ 'XU BING- ARTWORK- Square Word Calligraphy', accessed 26 April 2026, <https://www.xubing.com/en/work/details/198?year=1994&type=year>.

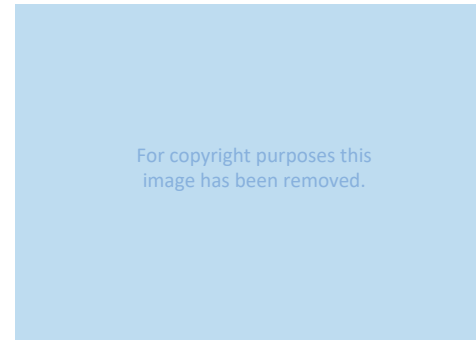


Figure 7. Peking Opera's Colorful Masks, *Chinese Opera Mask Colors and Their Symbolic Meanings*, Color Meanings.

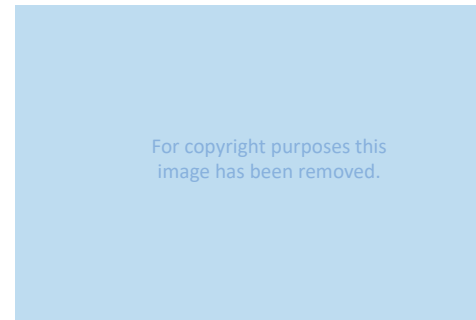


Figure 8. Performance teams performing the Nuo dance in household, UserAlbert, *Wikimedia Commons*, Jiangxi, 2024.

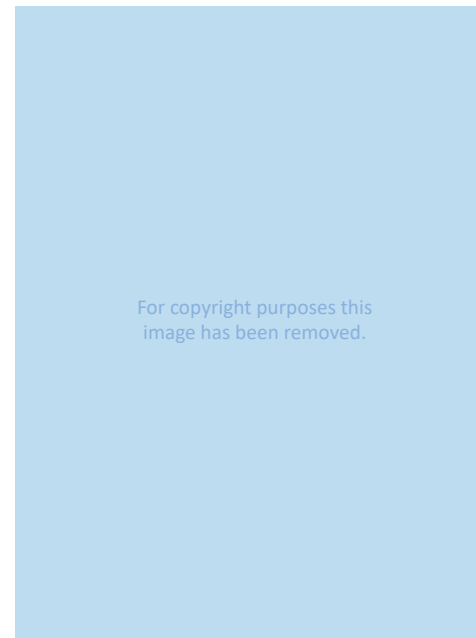


Figure 9. Bodhisattva Guanyin, Porcelain with ivory glaze (Dehua ware), made in Qing dynasty (1644–1911), Bequest of Mary Clark Thompson, 1923, to The Met Fifth Avenue, New York.

In *Gravitational Arena*⁴⁰ (see Figure 6), a massive vortex composed of distorted characters descends from above the gallery space; the *Square Word Calligraphy* writing is stretched and scattered through mirrored reflections. These characters, which resemble language yet remain indistinct, create a sense of cognitive dissonance for the visitors. This design approach aligns with Barthes's view that a sign does not need to be fully understood to generate meaning. In Xu Bing's work, illegibility generates cognitive tension, transforming the audience from readers into interpreters and forcing them to confront the limitations of their own comprehension.

This approach inspired me to employ Chinese characters as fragmented and partially illegible forms. However, my project does not focus solely on linguistic critique; rather, it places this illegibility within a speculative narrative context. These characters become traces left by aliens attempting to reconstruct human emotions, allowing visitors to intuitively empathise with the sense of frustration encountered by aliens as they strive to learn about emotions.

Building upon discussions of cultural symbolism, traditional Chinese mythology and performance forms, such as Peking Opera⁴¹, Nuo Opera⁴², and the mythical figure of Guanyin⁴³, have had a profound influence on me, offering valuable insights into how to express emotion and identity through abstraction rather than direct depiction.

40 'XU BING- ARTWORK- *Gravitational Arena*', accessed 26 April 2026, <https://www.xubing.com/en/work/details/686?classID=1&type=class#686>.

41 'Peking Opera', accessed 14 August 2026, https://english.beijing.gov.cn/beijinginfo/culture/culturecalendar/information/202401/t20240112_3534072.html.

42 Yuan-feng Liu et al., 'Research on the Symbolic Value of Nuo Masks in the Context of Contemporary Intangible Cultural Heritage Preservation', *Journal of Literature and Art Studies* 16, no. 1 (2026): 67, <https://doi.org/10.17265/2159-5836/2026.01.012>.

43 'Goddess of Compassion: Bodhisattva Guan Yin - Learn- Shen Yun Performing Arts', accessed 14 August 2026, <https://www.shenyunperformingarts.org/explore/view/article/e/0wa16QyYWM/bodhisattva-guan-yin>.

As one of the representative forms of traditional Chinese theatre, Peking Opera relies on masks and facial make-up, like Figure 7⁴⁴, that are abstract rather than realistic. Through simplified colours and patterns, they suggest a character's personality or emotional state⁴⁵. Although this system does not fully elucidate meaning, it provides the audience with sufficient visual clues for interpretation and understanding.

This approach is further exemplified in ritual practices such as Nuo Opera (see Figure 8⁴⁶). In Nuo Opera, masks serve not merely as visual elements, but as tools of transformation. Upon donning a mask, the performer assumes a different identity, shifting from an individual physical form to a symbolic or spiritual presence⁴⁷. In this context, the mask does not represent a character in a literal sense, but acts as a medium through which meaning is embodied.

Turning to a specific figure, the image of Guanyin appears extensively in mythological narratives, such as Figure 9⁴⁸. In many stories, attaining divinity requires the renunciation of emotions. Yet Guanyin's essence lies in compassion; despite her emotional detachment, she continues to show mercy to all beings, often depicted with a serene countenance that nonetheless radiates compassion and sadness⁴⁹. This emotional restraint, combined with inner sensitivity, creates a subtle tension; although the emotions are not explicitly expressed, they are still clearly perceptible.

44 'Chinese Opera Mask Colors and Their Symbolic Meanings', *Color Meanings*, 8 December 2020, <https://www.color-meanings.com/chinese-opera-mask-colors-symbolic-meanings/>.

45 Ding Wang et al., 'The Significance of Information Visualisation Based on the Symbolic Semantics of Peking Opera Painted Faces (POPF)', 2014 20th International Conference on Automation and Computing, September 2014, 83–87, <https://doi.org/10.1109/IconAC.2014.6935465>.

46 UserAlbert, English: During the Chinese Lunar New Year, Teams Visit Every Household in Villages near Nanfeng, Jiangxi to Perform the Nuo Dance. The Performers Wear Carefully Carved Masks Representing Mythological or Legendary Historical Characters; the Masks Have Intentionally Exaggerated Facial Features to Scare Away Phantoms. Nuo Dance Dates Back to the Shang Dynasty More than 3000 Years Ago., 13 February 2024, Own work, https://commons.wikimedia.org/wiki/File:Nuo_dance.jpg.

47 Liu et al., 'Research on the Symbolic Value of Nuo Masks'.

48 *Bodhisattva Guanyin*, 18th century, Porcelain with ivory glaze (Dehua ware), H. 16 1/4 in. (41.3 cm), <https://www.metmuseum.org/art/collection/search/51236>.

49 *Guanyin in Chinese Art* | Timothy Langston Fine Art & Antiques, News, 25 April 2016, <https://www.timothylangston.com/blog/guanyin-chinese-art/>.

These practices demonstrate how meaning can be conveyed through partial visibility, abstraction and symbolic forms. Rather than presenting emotions directly, they allow them to emerge naturally through perception and interpretation. This understanding guided my decision to use masks to represent the identity of the alien beings, rather than designing complete forms. Furthermore, all facial features on the masks, apart from the eyes, have been simplified; whilst conveying that the alien beings have lost their emotions, this approach maintains the presence of a sense of sorrow. In this way, the masks are not merely vessels for the characters, but become props for perceiving emotion, using the simplified features to condense the transmission of emotion and open up space for interpretation.

Overall, these perspectives establish the project's approach to speculative performance design, moving speculative inquiry from a hypothetical proposition towards an embodied spatial experience. The research, instead of considering design as a device to deliver predetermined meanings, places it as one of the ways to create circumstances in which a meaning can be explored, understood, and challenged. This is initially influenced by the speculative design, which introduces the project as an open-ended question of what may happen, and is then anchored by a narrative structure informed by Liu Cixin, offering a more accessible point of entry for audiences. The discussion of performance design, supported by the experience economy, further shifts this inquiry into spatial terms, showing how meaning can emerge through movement, material, and interaction rather than through representation alone. This is extended through Barthes' understanding of signs as partially unreadable. The works mentioned above further illustrate this point, including Eliasson's approach to perceptual openness, Wang Chao's spatialisation of literary texts, Xu Bing's exploration of illegible language, and traditional Chinese performative practices such as mask-making and symbolic abstraction; all of these demonstrate how meaning is revealed through ambiguity, embodiment and interpretation.

Methodology

Taken together, these perspectives redefine the role of design within the project. Instead of communicating a single message, the work aims to create an environment in which audiences actively engage with uncertainty, constructing their own interpretations through experience. In this sense, the significance of the project lies in its attempt to explore how design can open up space for reflection, rather than resolve meaning.

This study adopts a practice-based methodology, in which making is a method of inquiry⁵⁰. Design practice is understood as a form of thinking through material, space, and experience, drawing on speculative design⁵¹ and performance design⁵². The project positions design not as a problem-solving tool, but as a catalyst for dialogue, one that opens questions, provokes reflection, and invites audiences to reconsider existing conditions rather than offering fixed solutions.

Within this framework, criticality is understood as something that develops through practice and reflection rather than as a position fully determined in advance. While the initial speculative premise establishes concerns around emotional diminishment and technological acceleration, making, testing, and reflecting on the work allow these concerns to be questioned and refined throughout the research. Critical reflection, therefore, becomes part of the iterative practice itself and continues through the exhibition and the responses generated by the work.

Value within this research is located in affective and memorable engagement. Sensory design theory⁵³ places a multisensory approach at

the centre of the composition. Cultural semiotics offers a culturally based narrative layer, exploring how Chinese cultural symbols can function as forms of interpretation in performance⁵⁴, as in the case of the *Unique Dream of Red Mansion*⁵⁵ by Wang Chaoge. Collectively, these positions create a structure in which speculative narrative, sensory engagement and spatial performance relate to each other.

If this research were compared to a climbing vine, the methodological foundation could be perceived as a complex of connected principles which support and guide this study. These principles function not as fixed rules, but as a conceptual framework shaping the direction of the project.

- **Speculative Design**⁵⁶ initiates dialogue by proposing alternative futures and encouraging critical reflection on present conditions.
- **Performance Design**⁵⁷ repositions spatial construction as an integral part of the performative act rather than a neutral container.
- **Practice-based Research**⁵⁸ operates as both a method of investigation and a mode of thinking within the research process.
- **Sensory Design**⁵⁹ supports a multisensory approach to spatial environments through senses such as sound, smell, and touch.

Just as a vine requires a trellis to guide its growth and prevent unrestrained sprawl, the research is further structured around three positioning principles, framed by anti-mood boarding, that challenge conventional performance paradigms and guide the development of the work:

⁵⁴ Kobayashi, 'Roland Barthes L'empire Des Signes (1970)'.

⁵⁵ BaiduWiki, 'Unique Dream of Red Mansion'.

⁵⁶ Dunne, *Speculative Everything*.

⁵⁷ Hannah and Olav, *Performance Design*.

⁵⁸ Bolt and Barrett, *Practice as Research*.

⁵⁹ Malnar and Vodvarka, *Sensory Design*.

⁵⁰ Barbara Bolt and Estelle Barrett, eds, *Practice as Research: Approaches to Creative Arts Enquiry, First edition* (I.B. Tauris & Co Ltd, 2019), <https://doi.org/10.5040/9780755604104>.

⁵¹ Dunne, *Speculative Everything*.

⁵² Hannah and Olav, *Performance Design*.

⁵³ Joy Monice Malnar and Frank Vodvarka, *Sensory Design* (U of Minnesota Press, 2004).

- **Dissolving the boundary between stage and audience** — The design aims to dissolve the conventional boundary between stage and audience, creating a shared space for participation and experience.
- **Transforming spectators into participants** — The work invites visitors to act rather than observe, shifting from passive consumption to embodied, emotionally engaged experience.
- **Opening meaning to interpretation** — The project encourages critical, multi-layered readings shaped by each visitor's encounter, more than providing fixed narratives or moral conclusions.

Method

Within this practice-based framework, the research adopts a dual-pathway design methodology⁶⁰, in which the project develops simultaneously through physical installation and virtual production. Instead of being sequential, the two modes operate in continuous conversation, creating a hybrid process of prototyping. These positions are outlined here in brief and will be critically discussed with examples in the *Journey of Research* section.

Physical experiments, such as prototyping, material testing, and projection testing, allow me to intuitively assess the sensory and atmosphere in the space, as well as the properties of different materials; information that is difficult to predict digitally. On the other hand, virtual modelling and VR practice enable rapid, iterative speculative exploration without being limited by time, budget, or physical feasibility, which is crucial for early-stage design exploration.

The continuous flow between these methods gives rise to a productive loop of feedback: Insights from material experiments are translated into digital refinement, while virtual simulations help guide and adjust decisions in fabrication. This cycle of exchange enhances scenographic judgment and reduces risk in the realisation of large-scale installations. The dual-pathway approach is thus not only seen as a technical convenience, but as a methodological stance, which places the hybridity as a crucial strategy in this research.

Collectively, These principles work together to serve as a framework and guidelines and making sure the research is conceptually grounded while allowing speculative exploration.

60 Bernard A. Nijstad et al., 'The Dual Pathway to Creativity Model: Creative Ideation as a Function of Flexibility and Persistence', *European Review of Social Psychology* 21, no. 1 (2010): 34–77, <https://doi.org/10.1080/10463281003765323>.

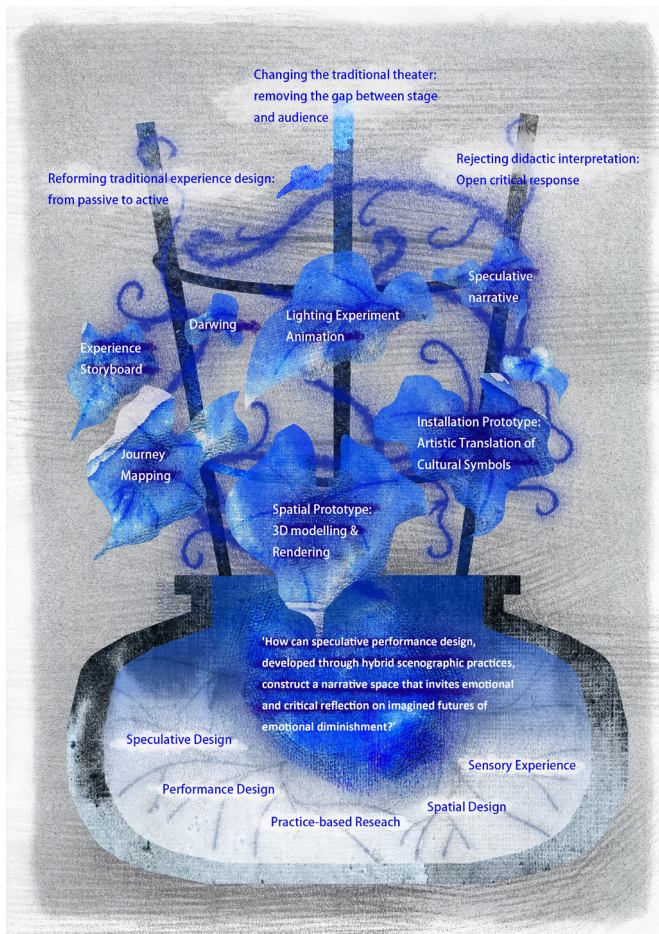


Figure 10. Methodology & Method Diagram, Luwen Xu (Annie), AUT, 2026.



Figure 11. Projection testing with textile sample, Luwen Xu (Annie), AUT, 2025.

Consequently, these three narrative stages are transformed into three spatial environments: 'First Encounter', 'The Anatomy Room' and 'Farewell'. Within these three spaces, Chinese characters are integrated as symbolic elements, translating language into spatial forms.

In 'First Encounter', the Chinese character '遇' (yù), meaning 'encounter', is abstracted into a series of curved forms and laid out on the floor using reflective materials (see Figure 13). This fragmented visual field disrupts the continuity of the space, heightening a sense of uncertainty and thereby intensifying the emotional tension arising from the initial encounter.

In 'Anatomy Room', multiple bronze script (jinwen, 金文)⁶⁴ characters are transformed into installations, while mirrored walls extend the spatial boundaries infinitely through reflection. This environment symbolises the process by which the alien repeatedly attempts to reconstruct human emotions; each attempt fails to bring understanding, but instead leads to a deeper sense of disorientation. Within this space, textual elements are particularly prominent, constituting the core of my exploration into the transformation of cultural symbols into spatial design; this will be discussed in detail in the following section, *Chinese Characters as Narrative and Emotional Form*.

In 'Farewell', the character '离' (lì), meaning 'separation', forms the core element of the space. Its bronze script form depicts a bird trapped in a net, symbolising a forced separation from the environment. This conceptual transformation is closely linked to the site selected for the virtual production, Silo 6⁶⁵ (the reasons for this choice will be elaborated upon later in Virtual Production Scenography for Immersive Design). The silo's enclosed cylindrical structure has been reinterpreted as a state of spatial confinement. Within this space, the alien figure is reduced in scale and rendered more transparent, and its interior contains a bird-shaped sculpture derived from the Chinese character.

⁶⁴ 'Jinwen (Chinese Bronze Inscriptions), University Museum and Art Gallery, The University of Hong Kong'.

⁶⁵ Silo 6 – Sarah Munro, n.d., accessed 2 June 2025, <https://sarahmunro.co.nz/silo-6/>.



Figure 13. Transforming '遇' (encounter) into spatial design, Luwen Xu (Annie), AUT, 2026.

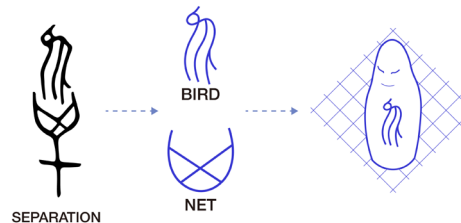
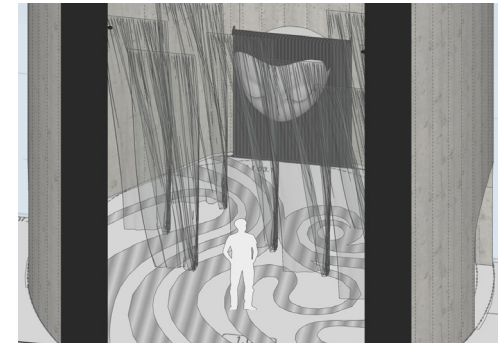


Figure 14. Transforming '离' (separation) into spatial design, Luwen Xu (Annie), AUT, 2026.



In contrast, a flock of birds is depicted flying through the walls from the interior of the space outwards, hinting at the possibility of escape (see Figure 14). This contrast creates a dual situation: while the alien civilisation remains trapped within, the visitor occupies a position from which they might transcend this limitation. Through this process, the narrative is no longer conveyed through text, but is constructed through spatial sequences, symbolic transformations and embodied movement. As visitors move through the spatial sequence, their changing positions and perspectives shape how these narrative and symbolic elements are perceived and interpreted. In this sense, participation occurs through embodied experience and individual meaning-making.

In the process of visualising the narrative, I employed watercolour (Figure 15), concept drawing (Figures 16-17), and collage-style journey maps (Figure 12) as a research method during the early design stages to explore how audiences navigate such imagined narrative environments on an emotional level. These methods not only visualise the atmosphere but also play an indispensable role in defining the design style and language. For instance, the watercolours created in the early design phase allowed me to intuitively experiment with atmosphere, emotion and tone. Cool blue tones and a hazy texture constitute the primary elements of the emotional palette, symbolising the melancholy and alienation within the fictional civilisation.

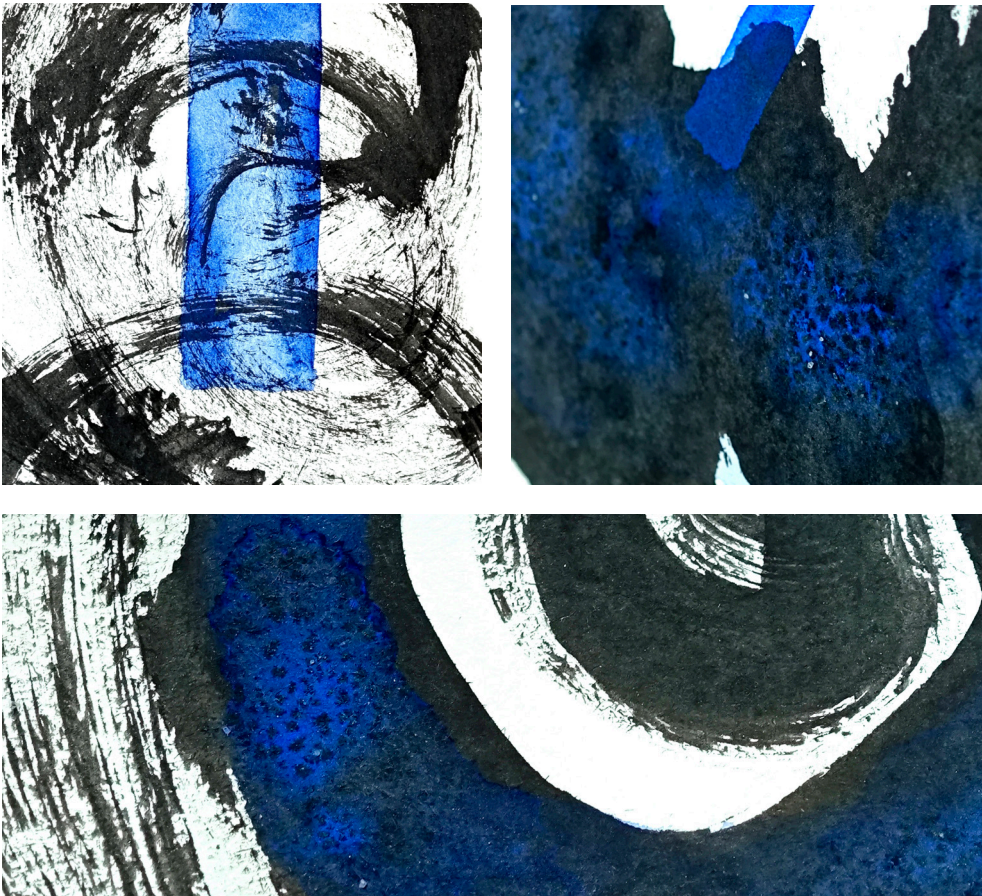


Figure 15. Watercolour Painting, Luwen Xu (Annie), AUT, 2025.



Figure 16. Concept drawing, 'First Encounter', Luwen Xu (Annie), AUT, 2025.

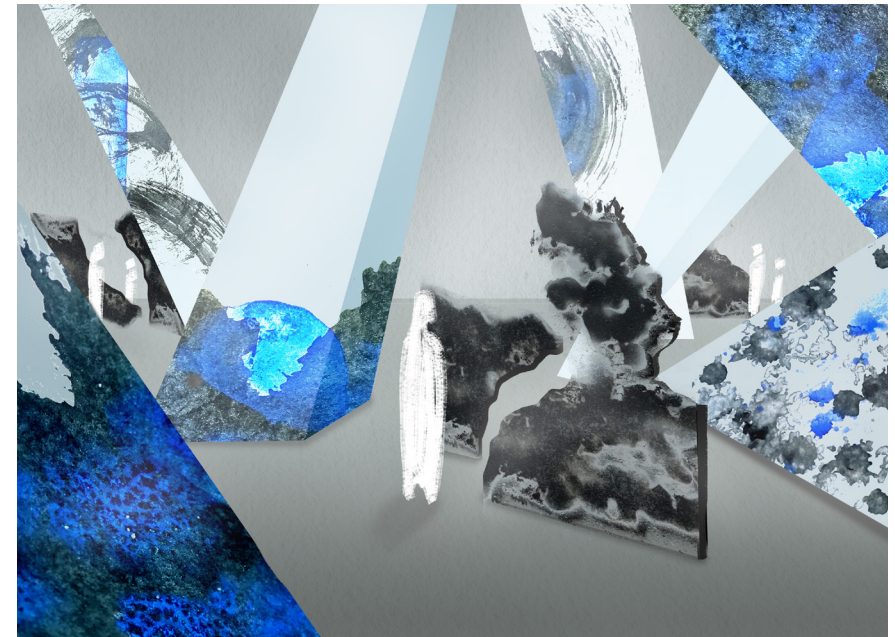


Figure 17. Concept drawing, Luwen Xu (Annie), AUT, 2025.

Furthermore, the visual and symbolic development of the alien figures draws directly from cultural references explored in the literature review, particularly imagery from Chinese mythology and theatrical traditions. For instance, in the scene titled 'First Encounter', rather than creating a fully realised character, I chose to present the alien creature as a mask, thereby emphasising its performative and symbolic functions. Most facial features on the mask have been simplified, retaining only the eyes as the primary vehicle for emotional expression. Through a series of clay experiments, I explored various variations of eye forms to evoke a sense of restrained sorrow, as in Figure 18. The intention is to present a creature that, whilst having lost the capacity to feel or weep, still bears the traces of sorrow. As embodied by the image of Guanyin⁶⁶ discussed earlier, emotion is not expressed directly but is perceived through subtle tension. The form of the mask is also influenced by the use of masks in Peking Opera⁶⁷ and Nuo⁶⁸ rituals, where the form serves as an abstract vehicle of meaning rather than a figurative representation. The masks are magnified into large-scale installations, creating a sense of grandeur and alienation. Although their size evokes a certain sense of oppression and strangeness, the simplified facial features soften their presence, shifting the focus from a sense of threat to one of ambiguity. In this way, the figure becomes a vessel for projection, representing a collective emotional void rather than an individual identity.

Ultimately, these speculative visualisations constitute flexible narrative structure. They enable me to assess the combination of the spatial composition, sensory pacing, and metaphor to provoke a response. This technique aids in bringing abstract concepts to emotionally legible spaces, placing the visitor at the centre of the experience rather than at its periphery. It responds to one of the sub-questions of the project: How can spatial design dissolve the stage–audience divide and encourage embodied participation? It is a manifestation of the methodological focus on the construction of the image of the future, the creation of experience and a new definition of the role of the audience.

⁶⁶ Bodhisattva Guanyin.

⁶⁷ Wang et al., 'The Significance of Information Visualisation Based on the Symbolic Semantics of Peking Opera Painted Faces (POPF)'.

⁶⁸ Liu et al., 'Research on the Symbolic Value of Nuo Masks in the Context of Contemporary Intangible Cultural Heritage Preservation'.



Figure 18. Process of prototyping the mask, Luwen Xu (Annie), AUT, 2025.



Figure 19. Prototype of the 'Love' bronze script installations with matte translucent material , Luwen Xu (Annie), AUT, 2025.

Chinese Characters as Narrative and Emotional Form

As outlined in 'Anatomy Room', Chinese characters have become central to the design elements of this space; this section will explore further how cultural symbols function as narrative and emotional forms within the project. Chinese characters have a history stretching back thousands of years. Although they have undergone several evolutions, most Chinese characters retain strong visual and pictographic qualities. Personally, Chinese characters not only serve as abstract elements of language but also as visual images that have a strong storytelling ability. To learn a character, it may be more than just to memorise how it is pronounced or written; Sometimes, it requires learning the story behind its structure, what it was originally illustrating and why it was created. An example is the character of love (愛), as in Figure 20, conceived as an image of a person who gives one's heart, and the other receives it and holds it with both arms, as the encapsulation of relational emotion in the visual composition. This visual narrative nature prompted me to consider Chinese characters as an emotional image-creation, and not only as textual information.

On this knowledge, I therefore considered the use of ancient Chinese characters in my design, particularly bronze script (jinwen, 金文)⁶⁹, as an approach to visualise emotion in the speculative narrative. Bronze script is one of the earliest forms of Chinese writing, used from the Shang dynasty through the Western Zhou period and commonly inscribed on ritual bronzeware. Retaining great pictographic qualities, which allow meaning to be approached through form and gesture, rather than through linguistic decoding alone. Bronze script, in contrast to the simplified Chinese characters that are widely used today throughout mainland China, leaves visual traces that reveal how meaning was constructed in the past.

⁶⁹ National Palace Museum, 'Rituals Cast in Brilliance: Masterpieces of Bronzes in the Museum Collection_The Elaborate Textual Repertoire: Bronze Inscriptions from Western Zhou to the Spring and Autumn Period', Exhibits, National Palace Museum, National Palace Museum, 20 May 2010, <https://www.npm.edu.tw/exh99/bronzes/>.

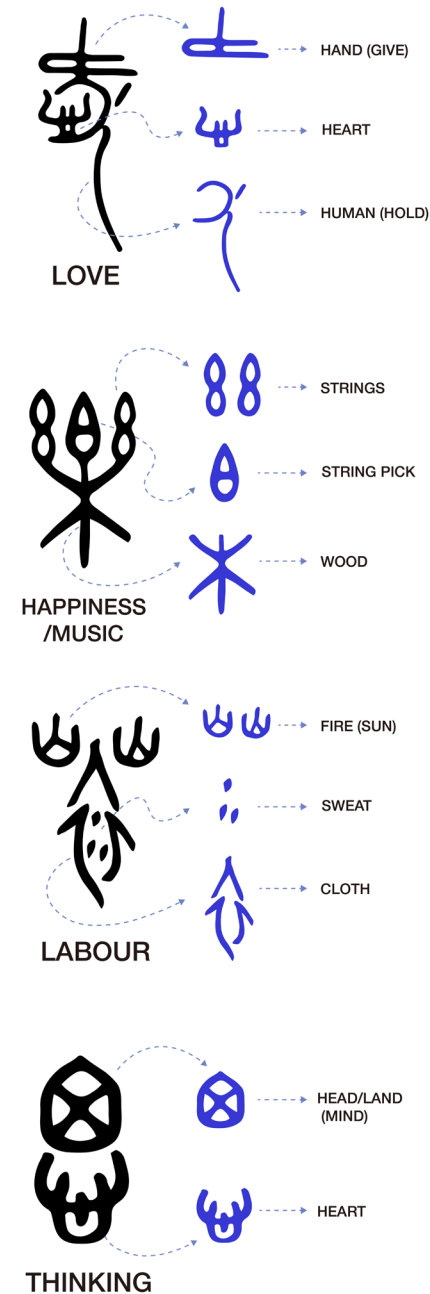


Figure 20. Diagram of the bronze script(愛, 樂, 勞, 思), Luwen Xu (Annie), AUT, 2025.

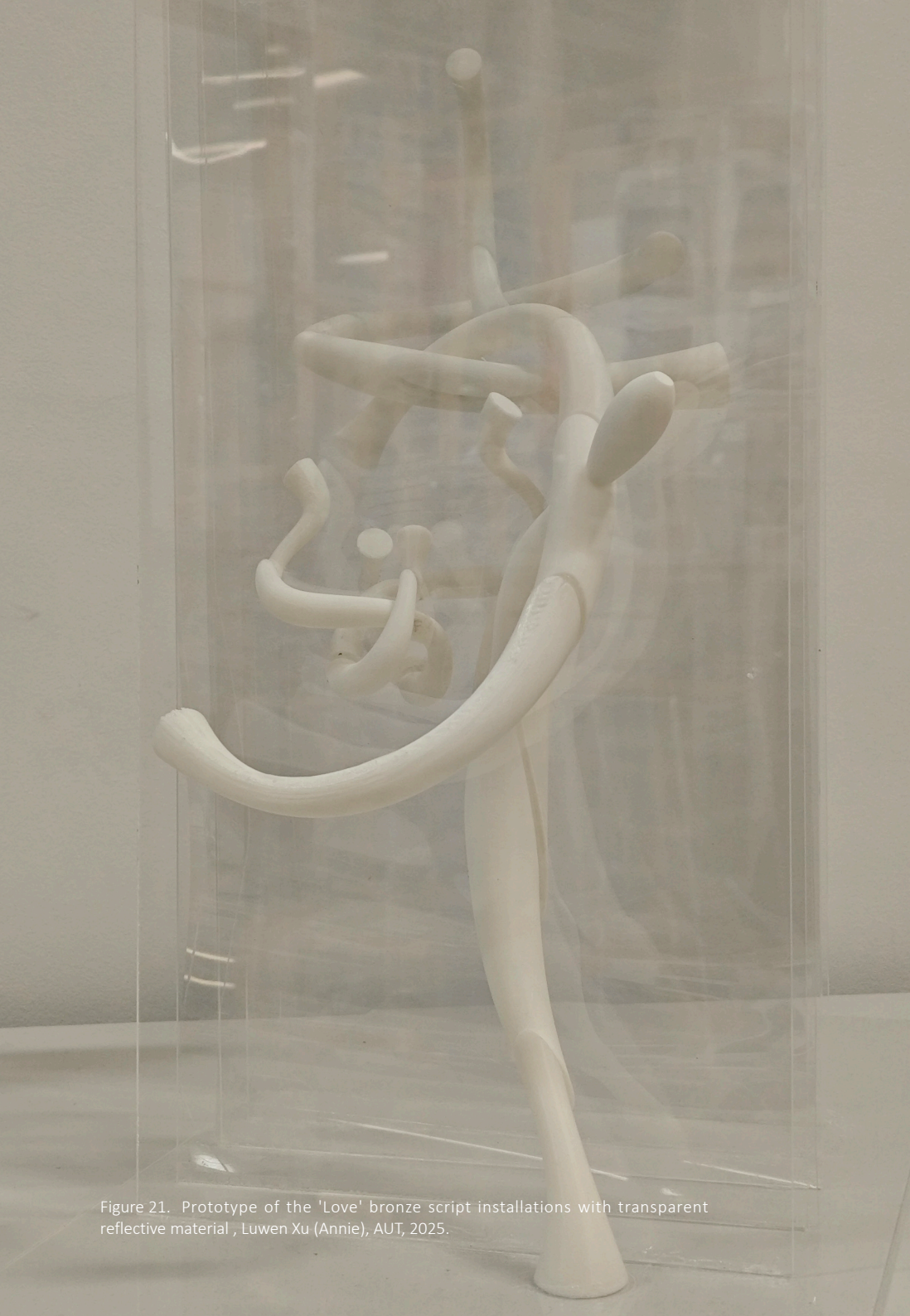


Figure 21. Prototype of the 'Love' bronze script installations with transparent reflective material , Luwen Xu (Annie), AUT, 2025.

This design decision not only reflects a cultural inquiry but also a personal engagement with Chinese writing systems.

When these ancient characters are converted into components of an installation, it allows me to experiment with the possibility that language could be functioning spatially, also as an object, presence and emotional trigger.

However, even for Chinese readers, these characters are very difficult to recognise unless they have studied the bronze script of calligraphy. This challenge raised a key question that became central to this project: What happens when understanding is no longer possible? The varying legibility of Jinwen became part of the speculative experience, creating three possible states of encounter. Visitors familiar with historical Chinese scripts may interpret the characters; other Chinese readers may recognise them without understanding their specific meanings, while those unfamiliar with Chinese writing may encounter them primarily as visual forms. These three states: readable, recognisable but unreadable, and unfamiliar; parallel the project's gradual process of loss, as meaning shifts from accessible to partially retained and eventually inaccessible. Having learned these scripts myself, I began to imagine what it would mean to lose the ability to decode and engage with them. As a reaction, I imagined an alien civilisation trying to retrieve their humanity by dissecting emotions encoded in Chinese characters, treating language and emotions as an experimental object. In order to recover their feelings, empathy, and creativity.

This exploration of cultural illegibility also resonates with Barthes's understanding of the sign⁷⁰; as mentioned earlier, he believed that the sign, as a system, can generate meaning without needing to be fully understood, and can operate in an open-ended manner through ambiguity, emotion, and subjective interpretation. This conceptual expression is realised through an installation within the space. Thus, I analysed the bronze scripts as shown in Figure 20, designed them into a 3D model, and then cut the model into sections and combined the model with transparent materials to create a prototype, as shown in Figure 21. In order to simulate an alien's attempt to dissect and deconstruct emotions.

⁷⁰ Kobayashi, 'Roland Barthes *L'empire Des Signes* (1970)'.

Through 3D printing prototypes of selected bronze-script characters (see Figure 22), I tested how line, mass, texture, and fragmentation could function as performative devices. Building on this, as shown in Figures 23-24, I continued developing the virtual model, designing the walls of the space to be mirrored surfaces. In the mirror reflection, space is infinitely extended, intensifying that sense of alienation and disorientation. Characters are shattered, transforming them into symbols scattered throughout the space; the reading, comprehension, and learning of information are all disrupted, visually evoking the frustration of the alien being unable to reconnect with its emotions.

Methodologically speaking, this approach draws on concepts from *Performance Design*⁷¹; Meaning is revealed not through linear narration, but through spatial composition, material presentation, and embodied interaction. Instead of trying to express messages directly through words, these experiments deliberately create ambiguity, keeping the meaning of cultural symbols unstable and subject to constant reinterpretation with each encounter. This once again aligns with Barthes's⁷² view that signs, especially within unfamiliar or decontextualised systems, can extend beyond their original cultural context, generating additional meanings through association and conjecture. At the same time, the meanings of selected characters are grounded in authoritative sources, including the dictionaries *Jinwen Changyong Zidian*⁷³ and *Jinwen Zidian*⁷⁴, ensuring cultural integrity. While meanings might be acknowledged in materials such as the exhibition guide, interpretation remains open, as the project draws from personal and philosophical perspectives rather than asserting fixed cultural claims.

Through this, Chinese characters are no longer viewed merely as linguistic tools, but as anchors for emotion and narrative. They invite reflection and interpretation, transforming visitors from passive readers into active interpreters.

71 Hannah and Olav, *Performance Design*.

72 Kobayashi, 'Roland Barthes L'empire Des Signes (1970)'.

73 陈初生, 《金文常用字典》, 陕西人民出版社, 2004.

74 王本兴, 《金文字典》, 北京工艺美术出版社, 2016.

This approach aims to bridge the gap between narrative and spatial representation, thereby supporting the project's broader goal: to explore how the meaning-making process itself, through immersive design, can embody emotional loss and cultural absence.

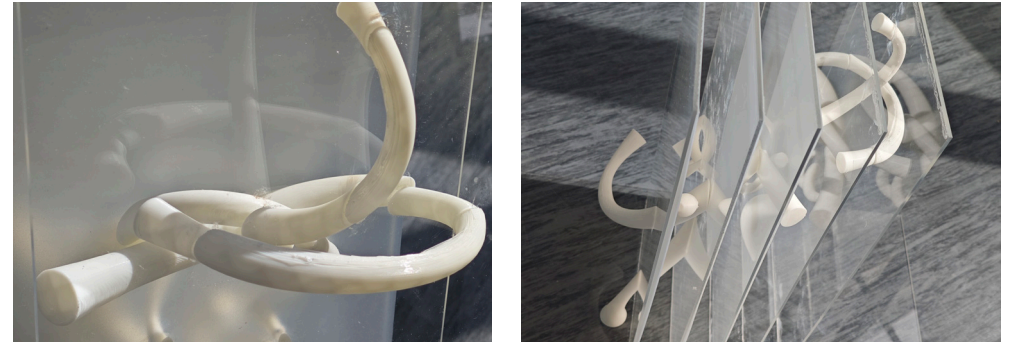


Figure 22. 3D-printed prototype of the 'Love' bronze-script installation with acrylic sheets, Luwen Xu (Annie), AUT, 2025.



Figure 23. Visualisation of the bronze-script installation in 'Anatomy Room' visual in UE5, Luwen Xu (Annie), AUT, 2025.



Figure 24. Bronze script installation room 'Anatomy Room' visual in Blender, Luwen Xu (Annie), AUT, 2025.

Virtual Production Scenography for Immersive Design

Following the development of narrative structure and symbolic spatial elements in the previous sections, this stage focuses on how these ideas are tested and refined through virtual production and physical fabrication. To explore how to design immersive environments from an emotional and sensory perspective, this phase integrates several research methods, such as virtual modelling and rendering, prototyping, projection tests, and VR design. These methods are not only used to refine the spatial design but also to explore how visitors' perceptions and movements shape their experience of the space.

Initially, the installation was created in a neutral virtual 'empty box' setting (see Figure 25), without selecting an actual site. Although it provided conceptual clarity and speculative freedom, feedback showed a fundamental drawback: with no particular architectural context, it was hard to envision how the visitors would physically and emotionally experience the space. This underscored an important principle I learned from *Performance Design*⁷⁵, which is that meaning is produced by the interplay of performance, audience and space. In response, I began exploring potential sites, looking for an architectural environment that could actively contribute to the narrative rather than simply contain the installation.

This led to the selection of Silo 6⁷⁶ as the site for virtual production, which was previously introduced as part of the narrative spatial framework. Silo 6 was built in 1961 and consists of six 35-metre-high concrete silos. It was originally used to store cement unloaded from ships, which was then transported by rail. The site was later repurposed as an exhibition and event space during the redevelopment of Wynyard Quarter.

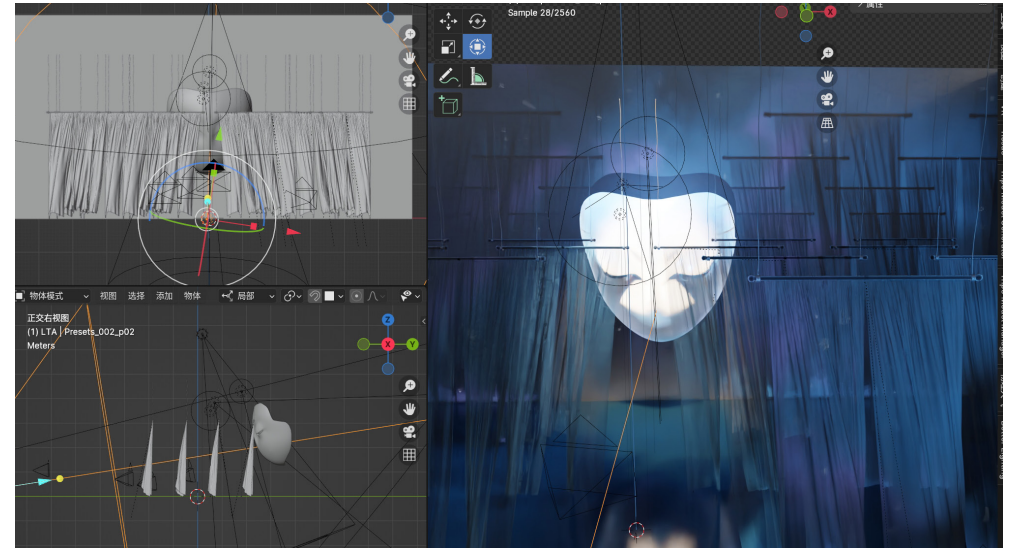


Figure 25. Concept modeling in Blender, Luwen Xu (Annie), AUT, 2025.



Figure 26. Left, Silo 6, Photo by Luwen Xu, Silo Park, Auckland, 2026.

Figure 27. Right, Mask installation room 'First Encounter', virtual concept in Photoshop, Luwen Xu (Annie), AUT, 2025.

⁷⁵ Hannah and Olav, *Performance Design*.

⁷⁶ Auckland Council, 'A Walk down Memory Lane in Silo Park', Auckland Council, accessed 11 August 2026, <https://www.audo.co.nz/news/a-walk-down-memory-lane-in-silo-park/>.



Figure 28. Projection testing with prototypes, Luwen Xu (Annie), AUT, 2025.



Figure 29. Room 'Anatomy Room' visual in Blender, Luwen Xu (Annie), AUT, 2026.



Figure 30. Projection testing with prototypes, Luwen Xu (Annie), AUT, 2025.

As shown in Figure 26, the monumental scale, rough concrete surfaces, enclosed cylindrical spaces, and acoustic reverberations give Silo 6 a cold and isolated atmosphere. At first glance, it may seem unrelated to aliens and the future, but it is precisely this sense of contrast that highlights the characteristics of a fallen alien civilisation (see Figure 27). By creating a sense of incongruity, the alien beings appear out of place in the surroundings, suggesting a once-powerful civilisation now facing decline and extinction. Thus, the site serves as an active scenographic element and becomes an integral part of the narrative and performance.

After selecting the site, Silo 6 was digitally reconstructed in Blender (see Figure 29), allowing for a comprehensive exploration of spatial dimensions, material relationships, lighting conditions, and visitor movement. Building on the small prototype created earlier, I was able to adjust their spatial presentation within the virtual model without size constraints. I then experimented with various combinations of materials and lighting. This allowed me to refine the project through virtual modelling and identify suitable materials and lighting techniques. Based on these concepts, I was able to determine which textiles to purchase and developed a clear plan for the fabrication of the physical installation.



Figure 31. Projection testing with prototypes, Luwen Xu (Annie), AUT, 2025.



Figure 32. Mask installation room 'First Encounter' visualisation in UE5, Luwen Xu (Annie), AUT, 2026.

But this digital phase also demonstrated the shortcomings of virtual simulation. Some of the effects, especially the interaction between the projected light and the silk textiles, could not be fully predictable in the virtual model. This led to a return to physical testing (see Figures 30,31, and 39), where the prototype of the mask, a full-size printed mask and several textile samples were used for projection tests. Such experiments created surprisingly intense visual and emotional results, creating an impression of quiet intensity and melancholy. This reinforces the significance of embodied testing in performance design, as sensory experience cannot be fully predicted through virtual representation.

Simultaneously, the project was extended to Unreal Engine 5 for VR practise (see Figures 32 and 35–38). The transition into UE5 allowed the environment to be explored through an immersive walkthrough, providing a closer understanding of the relationship between the space and visitors. Even though the technical constraints did not allow for the full reproduction of the material and lighting effects observed during physical experiments, the VR experience highly reinforced the spatial presence, which allowed the design to be experienced as part of the interior, instead of being observed as an exterior. This transformation indicates the project's focus on audience experience as a situated and embodied experience. This phase aided quick iteration, speculative testing, and low-cost modification of intricate spatial situations that would be difficult or costly to test physically.



Figure 33. Projection testing with prototypes, Luwen Xu (Annie), AUT, 2025.



Figure 34. Prototype of the mask installation room '*First Encounter*', Luwen Xu (Annie), AUT, 2025.

More importantly, these digital and physical strategies were not divided into discrete stages, but were part of a feedback loop. This iterative process combined two complementary modes of working: flexible exploration of different possibilities and continuous refinement of selected ideas. Lessons learned through material experiments were used to make changes to the digital models, and virtual experiments were used to make decisions on the placement of light, projection angles and spatial sequencing in physical prototypes. This iterative exchange gradually became a crucial methodological approach, strengthening scenographic decision-making through both embodied testing and speculative virtual production.

Finally, the hybrid approach illustrates how virtual scenography can go beyond representation to become a performative research device, one that does not prescribe visitors' movement but creates conditions for emotional and spatial responses. The project therefore combines affective testing and spatial simulation, allowing speculative flexibility while remaining grounded in embodied experience.



Figure 35. Mask installation room '*First Encounter*' visual in Blender, Luwen Xu (Annie), AUT, 2026.



Figure 36. Room '*The Farewell*' visual in UE5, Luwen Xu (Annie), AUT, 2026.



Figure 37. Room '*Farewell*' visual in Blender, Luwen Xu (Annie), AUT, 2026.



Figure 38. Bronze script installation room '*Anatomy Room*' visual in UE5, Luwen Xu (Annie), AUT, 2026.



Figure 39. Projection testing with the full scale printed mask and textile sample, Luwen Xu (Annie), AUT, 2025.

Large-scale Installation Production Research

Building on the virtual production and prototype testing in the previous section, the full-size installation translates the hybrid scenographic approach into physical fabrication. In this respect, fabrication is not considered a purely technical phase, but rather an extension of the performance design process, where material choices have a direct impact on the experience of the work. Several rounds of preliminary testing assisted in deciding the size of the mask sculpture, the structural requirements for suspension and the necessity of having a smooth and matte white finish that could be projected upon.

Considering both budget constraints and the structural demands of a suspended object, polystyrene foam⁷⁷ was selected as the primary material. This material is commonly used in large-scale foam sculpture due to its light weight and machinability. Its selection is therefore not only practical, but also scenographic, as the material's lightness enables suspension and contributes to the perception of fragility within the installation. With the assistance of technicians at the AUT 3D Lab, the digital model was accurately translated into physical form using computer numerical control (CNC) machining⁷⁸. Due to the size limitations of both the CNC machine and the available raw material blocks, the digital model was divided into ten separate sections. A nesting strategy was then developed within the modelling software to optimise cutting layouts and minimise material waste during fabrication (see Figure 40).

⁷⁷ John Scheirs and Duane B. Priddy, *Modern Styrenic Polymers: Polystyrenes and Styrenic Copolymers* (John Wiley & Sons, Ltd, 2003).

⁷⁸ 'What Is A CNC Machine?' | CNC Machines', accessed 16 August 2026, <https://cncmachines.com/what-is-a-cnc-machine>.

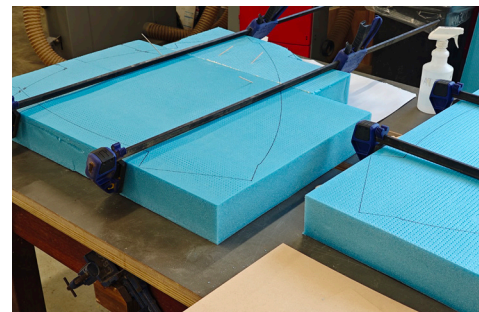
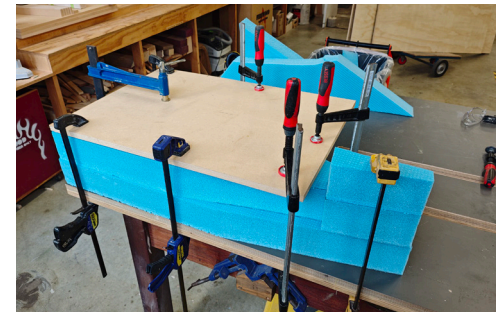
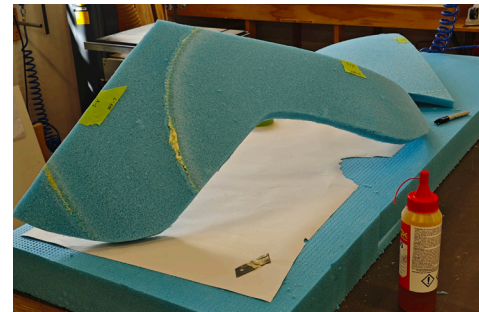
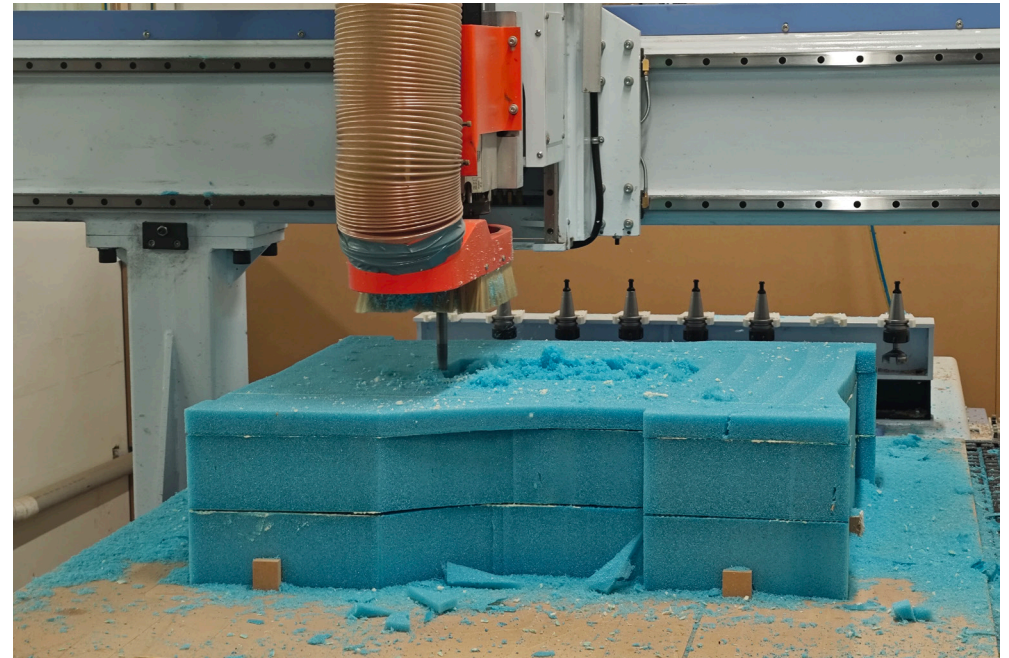


Figure 40. Fabrication process of the full-size mask, Luwen Xu (Annie), AUT, 2026.

Material testing revealed several limitations of this approach. Polystyrene is relatively fragile and prone to breakage during handling and machining. More significantly, the material is easily corroded by spray paint, which poses a problem for achieving the white projection-ready surface as required. To address this issue, I added a surface-hardening process prior to finishing. A protective layer was applied to reinforce the material and protect it from chemical damage caused by spray paint. This procedure demonstrates how material constraints shaped scenographic decisions, requiring adjustments that balanced structural necessity with visual and perceptual intentions. This treatment not only strengthened the surface but also provided additional structural support for suspension.

The other technical difficulty was in assembling the sculptural components. The thickness of the polystyrene sheets was limited to about 10 cm, and as such, each sculptural piece would have to be made out of two or three laminated sheets (see Figure 40). Since CNC machine milling removes material with rotating drill bits gradually, a lack of bonding between the layers may cause cracks or severe structural damage during machining. The liquid polyurethane adhesive⁷⁹ (see Figure 43) was chosen to address this problem. When it is exposed to moisture, this adhesive swells into a foam form, filling the gaps between the surrounding material, and the bonded layers act as a single block during CNC carving.

Nevertheless, during the manual sanding process, another complication was noticed. The polystyrene had a much lower density than the expanded polyurethane foam, and thus the two materials abraded at varying rates when sanding. Consequently, the polystyrene was removed more rapidly than the adhesive, resulting in uneven surfaces.

⁷⁹ 'WOODLOK 3500 Liquid Polyurethane Glue', Glue Guru, accessed 16 August 2026, <https://www.glueguru.co.nz/products/woodlok-3500-liquid-polyurethane-glue>.



Figure 41. Wall filler covering the defect, Luwen Xu (Annie), AUT, 2026.

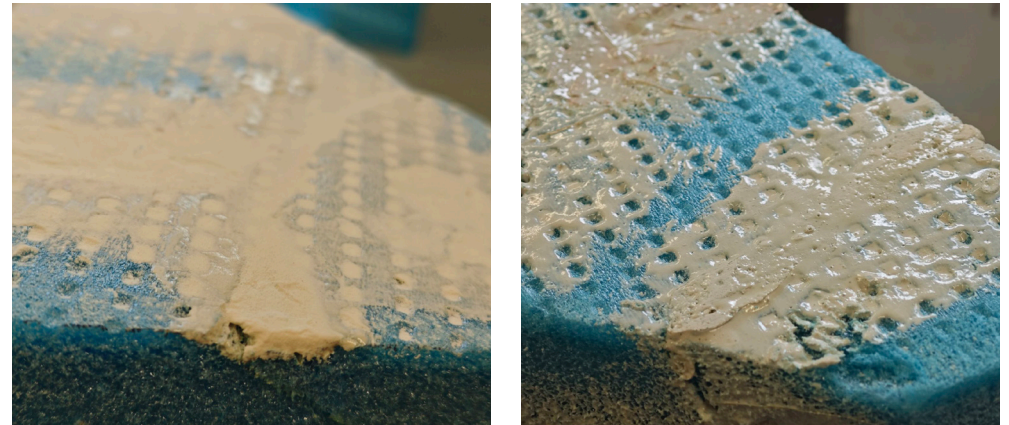


Figure 42. left, the hardener under the spackling filler, opposite on the right, Luwen Xu (Annie), AUT, 2026.

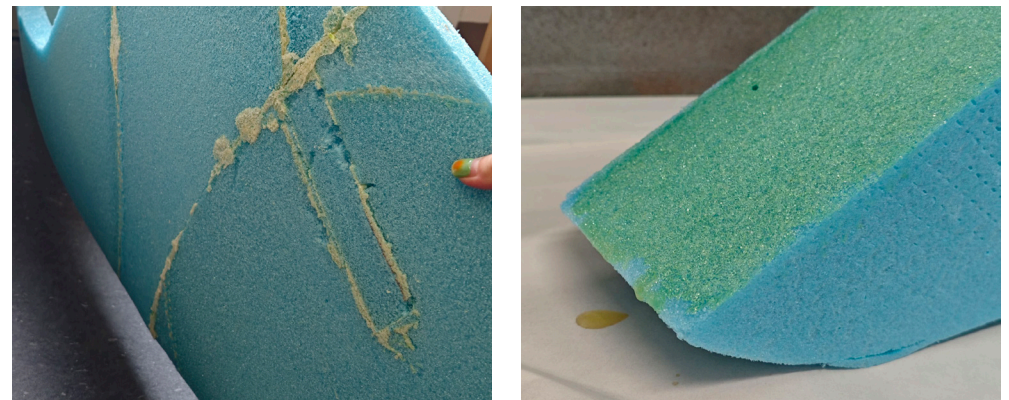


Figure 43. left, part of the mask glued using liquid polyurethane adhesive, Luwen Xu (Annie), AUT, 2026.

Figure 44. Right, testing West System's epoxy resin on polystyrene foam, Luwen Xu (Annie), AUT, 2026.



Figure 45: Process document fabricating the mask in full scale (1.5*1.5m), Luwen Xu (Annie), AUT, 2026.

To solve this issue, additional material tests were done with various wall filler types and application methods. In preliminary experiments, it was found that applying filler and sanding the seams alone was not sufficient since surface irregularities were still observed on the polystyrene-adhesive foam interface. Consequently, a complete surface coverage scheme was adopted. A comparative test was conducted to identify a suitable filler, and water-based spackling filler was selected because it is flexible, spreads smoothly, and is chemically compatible with polystyrene. The water-based filler offered a smoother application compared to solvent-based alternatives and did not corrode the foam, thus enabling the whole mask surface to be covered uniformly.

In order to create a smoother and steadier finish, a layered process was created. Before applying the hardening coat, I first applied a full layer of spackling filler. After the hardening coat, wall filler was used to fill any remaining uneven areas. Following several rounds of sanding, a primer was sprayed on to achieve the smoothest possible finish, followed by spray paint as the final coating (see Figure 45). However, the choice of hardening coat appeared as a challenge. I needed to consider whether it would corrode the foam, whether it could produce a smooth finish, and whether it was affordable. Thus, I conducted extensive experiments (see Figures 41-42) regarding the sequence of applying the hardening layer and putty, as well as the selection of hardening layer materials.

Ultimately, I concluded that West System's epoxy resin⁸⁰ (see Figure 44) offered the most cost-effective solution for this fabrication process, as it did not corrode the foam while providing both hardness and a smooth surface. The main drawback was its high flowability, which required multiple thin coats to achieve the desired result (see Figure 47).



Figure 46. Process of fabricating the mask in full scale (1.5*1.5m), one layer of spackling, Luwen Xu (Annie), AUT, 2026.

⁸⁰ '105 West System Resin', accessed 28 April 2026, <https://roweadvanced.co.nz/105-west-system-epoxy-resin>.

This iterative material investigation reflects the practice-based nature of the project, where problems encountered during fabrication directly informed subsequent design decisions. Rather than working towards a predetermined material solution, knowledge emerged through testing, failure, adjustment, and further making.

Instead of serving as an entirely technical process, the development of the layered filler and hardening strategy became part of realising both the structural and performative requirements of the installation. The reinforced and smoother surface enabled the mask to be safely suspended while also providing a more suitable surface for projection, which was necessary for integrating digital imagery with the physical installation. This demonstrates how material construction functions within a hybrid scenographic system, where physical form and projected image are mutually reliant in constructing the immersive experience. In this way, fabrication becomes part of the scenographic inquiry itself, rather than simply a means of realising a previously determined design.

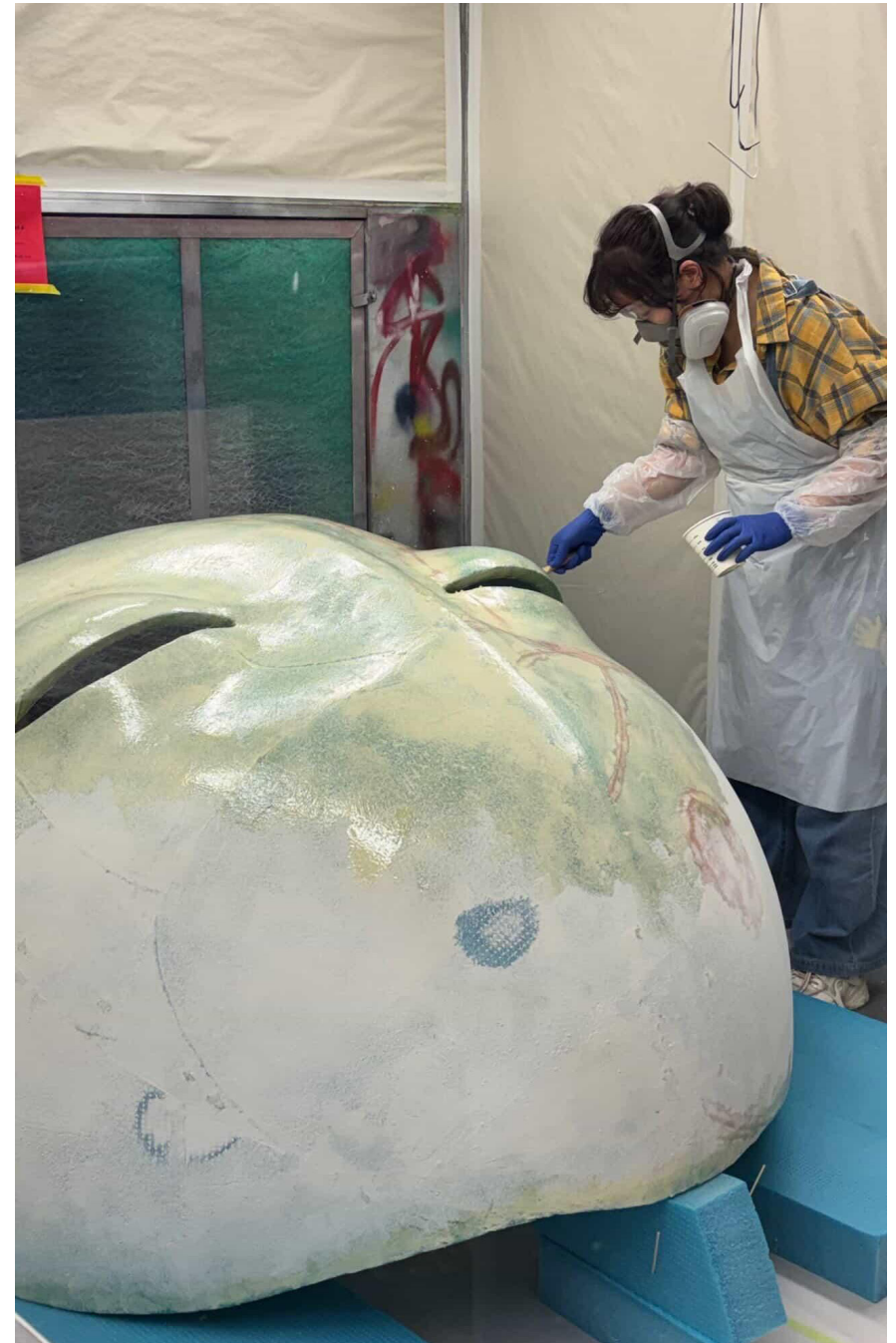


Figure 47. Right, Luwen Xu (Designer), Process of applying first layer of the resin on the mask, Photo by Jessica Zhang, AUT, 2026.



Figure 48. Process of fabricating the mask in full scale (1.5*1.5m), Three layers of resin, Luwen Xu (Annie), AUT, 2025.

Conclusion

This project demonstrates how speculative performance design can construct narrative spaces that invite emotional and critical reflection on imagined futures of emotional diminishment. By bringing speculative design and performance design together, the project translates a hypothetical future into an embodied spatial and sensory experience. The practice-led process shows how material experimentation and hybrid scenographic practices contribute to this aim.

First, the spatial design challenges the conventional division between audience and stage. Instead of providing a fixed perspective, the installation invites visitors to move through the space, allowing their position, attention, and sensory perception to shape how the narrative is encountered and interpreted. The suspended mask, projection and surrounding textiles create a performative environment in which participation occurs through embodied experience and individual meaning-making.

Second, the project translates abstract emotional ideas into a multisensory spatial experience. The speculative premise of an emotionally diminished civilisation is not communicated through explicit explanation or linear narrative, but through atmosphere, scale and materiality. Light, projection and surface texture work together to evoke fragility, distance and ambiguity. These sensory strategies allow visitors to encounter emotional loss spatially, supporting immersive scenography as a medium for embodied reflection.

Third, Chinese characters operate as semiotic and performative elements within the installation. Rather than functioning only as linguistic information, the characters are transformed into sculptural forms that carry symbolic meaning. Their different degrees of legibility, from readable to partially retained and eventually inaccessible, parallel the project's gradual process of emotional and cultural loss. Meaning, therefore, emerges through perception and interpretation rather than direct communication, allowing the characters to perform narratively through the visitor's encounter with them.

Finally, the integration of digital production and physical installation demonstrates the role of hybrid scenographic practices within speculative performance design. The project combines virtual modelling, VR, projection testing and large-scale fabrication to develop the experience across physical and virtual environments. Rather than functioning as separate processes, these methods continuously informed each other through testing and refinement. This hybrid approach enabled the speculative narrative to be explored through both virtual experimentation and material presence.

Rather than offering a conclusive statement, the project creates an open framework for interpretation. Its criticality developed through practice, testing and reflection, particularly as physical and virtual experiments revealed both possibilities and limitations in the design. Due to feasibility and budget constraints, the physical installation represents only part of the proposed experience, while the virtual environment allows the broader spatial narrative to be explored.

Future development could further explore the relationship between Jinwen and embodied participation. While the current project focuses mainly on how different degrees of legibility shape individual interpretation, future iterations could investigate how visitors' movement through space might create more direct encounters with these symbols, further connecting cultural interpretation with embodied experience.

Overall, the project demonstrates how speculative performance design can bring imagined futures into embodied experience through the convergence of speculative inquiry, performance design and hybrid scenographic practice. Rather than proposing solutions, it creates conditions for reflection, using ambiguity, sensory encounter and interpretation to question what may be lost through technological acceleration and emotional diminishment.

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Postscript

This postscript was written following the exhibition of my installation at Te Wai Ngutu Kākā Gallery 2, where this project was presented in its complete form for the first time. Spending three days beside the installation allowed me to directly observe how visitors experienced the work and offered an opportunity to reflect on aspects that only became apparent through the exhibition.

The gallery space successfully supported the immersive atmosphere I had intended during the design process. A large wall at the end of the room and the gallery's amazing projector created the visual scale I had envisioned, while the suspended mask, slightly tilted towards visitors, established a strong physical presence. Additionally, the speaker was placed inside the sculpture, concentrating the sound around the mask and enhancing its resonance. Together, these elements strengthened the relationship between the physical object, projected image, and sound effect.

Most visitors were immediately drawn towards the mask before exploring other parts of the installation. Some gently moved the silk curtain, unintentionally creating shifting shadows across the sculpture. Many described the figure as mysterious or quietly sorrowful and were curious about its identity and the story behind it. These reactions suggested that the installation established an emotional connection before its narrative was explained.

The VR experience became surprisingly popular. Despite occasional technical interruptions during the exhibition, many visitors commented that it allowed them to better understand the complete spatial environment, while the accompanying monitors enabled others to experience the virtual world without wearing the headset.

Figure 49. Right, Luwen Xu (Designer), 'First Encounter', Exhibition document, Photo by Jasmine Kuan, AUT, 2026.



Besides, I designed postcards explaining the four bronze script characters included in my design, which became conversation starters. They successfully encouraged discussions about Chinese culture, emotional loss, and the relationship between technology and humanity across different cultural perspectives.

Some conversations developed in directions I had not anticipated. One visitor questioned whether the increasing use of AI in design might itself contribute to a loss of creativity, while another discussed the differences between traditional craft and digital production, particularly how unpredictable traces of hand-making can carry the maker's thoughts and emotions. The bronze script characters also generated strong interest, leading to discussions about the visual and narrative qualities of Chinese writing, the cultural loss that may occur through language simplification, and the differences between Chinese characters and alphabetic writing systems.

Looking back, I realised that the installation continued to evolve through the participation of its audience. These conversations extended beyond my original intentions and generated new interpretations and questions. This reflected the speculative intention of the project: rather than providing a fixed conclusion, the installation became a starting point for reflection and dialogue. The exhibition, therefore, became not only the presentation of this research but also its final stage of reflection.



Figure 50. Top Right, VR station, Animation, Postcards, AUT, 2026.

Figure 51. Bottom Right, Postcards with characters 'Working', 'Thinking', 'Happiness', 'Love' in order, AUT, 2026.



Figure 52. *'First Encounter'*, Exhibition document, Photo by Jasmine Kuan, AUT, 2026.



Figure 53. 'First Encounter', Exhibition document, Photo by Jasmine Kuan, AUT, 2026.



Figure 54. 'First Encounter' , Exhibition document, Jiyuan Xin (Visitor) trying VR, Photo by Luwen Xu, AUT, 2026.



Figure 55. *'First Encounter'*, Exhibition document, Ludan Xu (Visitor) Moving silk curtain, Photo by Paul Chapman, AUT, 2026.



Figure 56. 'First Encounter', Exhibition document, Photo by Luwen Xu, AUT, 2026.



Figure 57. 'First Encounter', Exhibition document, Photo by Paul Chapman, AUT, 2026.



Figure 58. *'First Encounter'*, Exhibition document, Photo by Paul Chapman, AUT, 2026.



Figure 59. 'First Encounter', Exhibition document, Photo by Paul Chapman, AUT, 2026.



Figure 60. '*First Encounter*', Exhibition document, Photo by Paul Chapman, AUT, 2026.



Figure 61. *'First Encounter'*, Exhibition document, Photo by Paul Chapman, AUT, 2026.