

Critical Research Paper

Calculation Is Slow // Space Between Words Is Infinite:

Possibilities for the separation of human-AI robot relationships in
future contexts

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MA Graphic Design Communication 2020/2021

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1. Initial Question / Provocation

In 2020, the sudden COVID-19 outbreak swept the world. The vulnerability of intimate human relationships is highlighted in the face of an irresistible disaster. In the months of 'social isolation', our closeness to the internet, media and electronics was brought to an unprecedented level. It is no coincidence that, with the third technological revolution, electronic and information technology, Internet technology, artificial intelligence, etc., have become ubiquitous in people's daily lives. Our interdependent relationship with 'technology' has long been at an all-time high.

An exploration of the interdependence and resistance of humans and technological devices begins as early as Fritz Lang's film *Metropolis* (1927). The workers of the dungeon toil to operate the great machine on which they depend, only to rise up and destroy it under the spell of evil robots used by mad scientists. As seen in this science fiction piece, the relationship between humans and technology is a complex and unstable process of change, which we fear and desire.

Based on the trends now, what different forms of human-technology relationships can we expect looking forward? In today's highly technologically advanced world, 'technology' has long been more than just cold tools and means for humans; it has been wishfully imbued with emotions, moral constraints, religious beliefs, etc. The border between 'humanity' and 'mechanicality' begins to blur, as if there is a fragile and delicate 'grey area'. The fragility of 'technology' has opened up richer possibilities for their relationship with humans.

Based on this premise, I pose the research question: If humans are building relationships with technology or object, what different types of separation can we expect? I will use this as the thematic direction for my project and work on both theoretical and practical aspects to try to find the proper answers.

2. Theoretical Overview

Returning to the starting point of this relationship, why are humans capable of becoming attached to 'inanimate' technologies or artefacts? According to child psychologist Jean Piaget's theory, children have a tendency to perceive inanimate objects as animate. In the preoperational stage, between the ages of two and seven, children see everything as a living, conscious object like a human being, often treating toys as friends, playing and talking with them. As they get older, the scope of their 'animism' gradually narrows.

Some researchers have argued that the child's animism cognitive tendencies are only temporary and unstable. The perception of toys as living things produces corresponding emotional experiences, for example, whispering to a teddy bear, feeding a doll, etc. From this perspective, it seems that 'animism' is not only reserved for children. Some people hear the wind blowing the leaves and feel the trees talking, others can not bear to throw away old things when they move for fear that they will be upset by being left behind. The animism of adults with a comprehensive and mature perception is more akin to an autonomous choice. As a result, the emotional experience of interacting with electronic devices, AI, robots, etc., is amplified, making it easier to establish an intimate relationship with 'technology'.

Then, what forms of human-technology relationships are proven to be highly likely to occur in the near future? Relationship coach and neuroscientist Bobbi Banks suggests that forming romantic and sexual relationships with robots will be widespread by 2050. No coincidence, in his book *Love and Sex with Robots*, artificial intelligence expert David Levy suggests that humans will fall in love with and even marry robots in the near future. In 2017, Abyss Creations, a Californian toy manufacturing company, announced that Harmory, a companion and sexual female robot, had been successfully developed and was available for sale.

In addition to satisfying the most basic physical needs, the pursuit of human-technical relationships on a spiritual level is constantly being challenged and validated. The general consensus among social psychologists is that the main factors for people to have intimacy include similarity, exclusivity, satisfying needs and unusual circumstances, among others.

So can 'technology' fill these reasons for human love? Greg Nichols, an American author and journalist, gives the affirmative answer, explaining that at some point people transfer their attachment to others to 'objects'. One of the most important objects that people attach themselves to is electronic devices, which are portable, exploratory, communicative and comforting. This is similar to the reasons why humans fall in love with other people. If a day goes by without the use of smart devices, many people may feel insecure, strange, uncomfortable and other lonely feelings. Back to the robots, artificial intelligence-equipped machines are now used in some hospitals or advanced care facilities to accompany care recipients, caring for their mental health while meeting general care needs. In short, the role of intelligent robots is moving towards a more advanced and comprehensive mainstream trend, both in terms of physical satisfaction and psychological companionship.

Of course, the 'realness' of robots also needs to be improved, and the part of their 'realism' that is most lacking is emotion. People need an object that understands them and responds to them, but will they accept the same level of care from a non-living machine as they would from a human being? Opposing voices point out that the relationship between humans and technology is unreal in terms of the ethical character of human society. Artificial intelligence is a human creation, the product of a string of digital programming that does not correspond to the uniquely human nature, the social nature, and the imprint of the evolution of social civilisation over millions of years. For example, artificial intelligence, with its powerful learning, computing and processing capabilities, connects with tens of millions of users other than you, which goes against the 'exclusivity' and 'loyalty' of human love. Ethics is a complex issue and human beings have diverse moral and ethical views due to national, regional, historical, cultural and religious differences, so how do we program the moral theories of AI? This negative attitude assumes that AI are simply programmed to do what they are instructed to do and that unlike humans who are born with emotions such as empathy, compassion, attachment and jealousy, if humans become attached to them, such emotions can only be one-dimensional.

3. Context - Specific Debates

As researcher and educator Lee Mackinnon suggests, our relationship to devices, media, and materiality changes when once-passively-consumed media now facilitate interactivity. Clearly drawn divisions separating humans from non-humans are no longer suited to the task of describing a machine or a technical system of apparatus. The blurred boundaries of human-technological relations and the notion of fluidity provide space for reflection and speculation on future models.

If one were simply to explore the possibility of the beginnings of a human-technological relationship, the answer must be yes. What about looking further afield, at its development, process and ending? In Spike Jonze's film *Her* (2013), programmer Theodore falls in love with his artificially intelligent voice assistant, Samantha. Like most human romances, they go from initial curiosity, filled with sweet fantasies, to reading each other hungrily and experiencing a passionate good time. Then their relationship hit a rough patch and they began to aspect their feet, pulling their thoughts from each other back to themselves. Man is selfish and his possessiveness does not allow for the 'fraternity' of the AI, which learns and develops at a rapid pace as it expands and grows in the infinite world of the internet. In this unbalanced rhythm, the relationship drifted apart until it was finally separated. As Samantha would say, 'I am writing this story between us but really slowly. Spaces between words are almost infinite.' The separation in *Her* may not be a grievous loss. They have shared a journey together, gradually finding their souls and farewell with memories in regret.

As the research progresses, there is a wealth of theoretical and practical evidence to suggest that the relationship between humans and technology will become a mainstream trend in the near future. However, most of the discussion so far has been limited to the 'possibilities' and, in other words, the 'beginnings' of the relationship. As a speculative design-based research, I tend to look at the longer term with bold assumptions and speculations - where does the process, the journey and the end of the human-technology relationship lead?

The romantic love aspect of human-technological intimacy is discussed here. Families,

friendships, and many more relationship categories could be delved into. Different separation situations can be discussed under different relationship models. Like with our mothers, we go through different stages of life where we descend into each other's lives, but feel a little bit more apart; or we have close friends back home and when we go away we make new friends, just like I left a piece of myself and started a new relationship; or in some unhappily married relationships, we are physically together but my mind is no longer here, etc. In this way, 'separation' is not a single ending 'end', it can be a process, a state, or even a story. Love is no longer a human, finite calculation but a nonhuman, infinite computation that is also incomputable (Mackinnon, 2016). Human-technology relationships are a fluid and subtle state of instability, and I hope that my research topic will lead to future-based reflections.

4. Analysis of Design Examples

4.1. On (Speculative) Anachronistic Design - Article

In the foregoing, the 'intertwined relationship between humans and technology' seems to have been placed in complete isolation in a 'nebulous' future context that we can expect but hardly foresee. Did my project go astray in the early stages of speculative design and its 'limitations'? In *Futuristic Gizmos, Conservative Ideals: On (Speculative) Anachronistic Design*, the author suggests that speculative design, under the guise of 'exploring scientific research and futuristic technology', is in fact a superficial social discussion without a more considered cognitive analysis of the world.

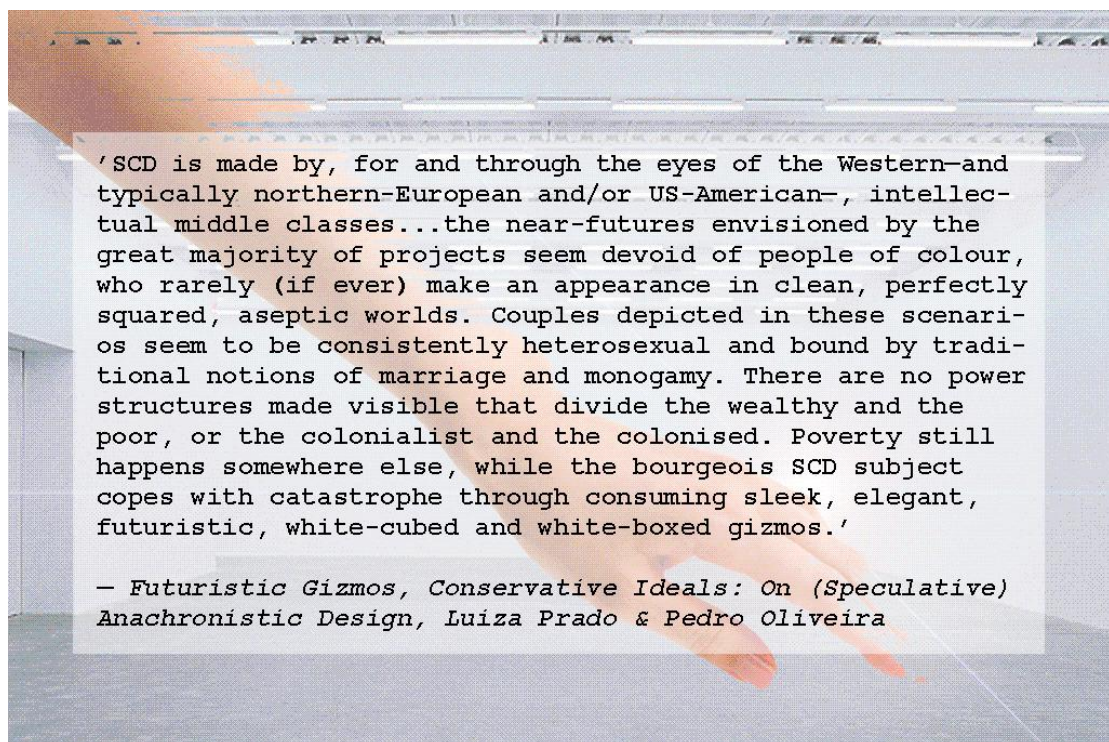


Fig 1. *Futuristic Gizmos, Conservative Ideals: On (Speculative) Anachronistic Design* (2015)

It is clear that voices have emerged that are fed up with such a uniform, formulaic and superficial contextualisation of speculative design, and the author aims to break the false illusion of 'world peace' that has been whitewashed by speculation. I believe that this reflection comes as a heavy blow to the 'self-righteousness' of speculative design, and

seeks to bring it back closer to the 'now' and 'reality'. Wars are still being fought, feminism, racial equality, LGBT communities are still struggling, is there no future for the poor? Speculation should perhaps be built on these facts rather than indifferently erasing them and creating a whole new utopia. Just like the 'human-technology' relationship, the stories I set up in the future world have traces in the social reality of the present, issues that will not appear in 50 years' time, and we need to be given the hope of being reassured and resolved right now.

4.2. Performative Design - Thesis And Practice

Having clarified such theoretical considerations, what is the methodology to implement the visual presentation practice at this stage of my project? Based on my keen interest in interactive and participatory design, I had the pleasure of attending a lecture by Tereza Rullerova, a graphic designer and educator from The Rodina Studio who offers a great blend of graphic design and performative design. In her thesis *Action to Surface*, she asserts that this new engagement with performative design should also extend to the immaterial mastery of information in order to make new connections. And prompting relationships with the audience can enrich the field of communication design. Performance has the potential to generate new values and is a possibility in the face of democratising issues.



Fig 2. *Action to Surface* (2015)



Fig 3. *Performative Design* (2017)

The Bauhaus costume parties in the 1920s was a pioneering experiment in 'dynamic graphics'. I can even see hints of Bauhaus costumes in Tereza's practice, where she 'wears' graphics on her body or uses more contemporary technologies such as VR to enhance human interaction with them. Tereza is certainly a combination of performative design with the current zeitgeist and taking it to a more permanent stage. I believe that performative design not only as a methodology but also as a form of presentation of work. The participants in a given situation are uncertainties, but this immediate uncertainty constitutes a wonderful variety of possibilities, in other words, the result is no longer the ultimate pursuit, but rather the enjoyment of the collision in the process is more meaningful. The role of the designer is less 'ruler' and more 'organiser'. This reminds me of the importance of developing frameworks and rules for immediate performance situations in order to inspire the audience to imagine 'present-future' scenarios, and to find a balance between the real and virtual worlds that they can relate to.

4.3. Misbehaving Robots - Design Project

Combating the 'indifference' of 'technology' is essential. As technologies such as virtual reality and augmented reality are invested and developed, the perception of the border between the real and virtual worlds is becoming increasingly difficult to quantify. The primitive and fundamental human need for emotion and intimacy is being established with non-humans. However, this field tends to prioritise physical efficiency and wellbeing at the expense of the subtle 'unnecessary' aspects of human relationships. Designer Nicole Pérez has created a series of robots that mimic the annoying but harmless behaviours of intimate relationships. These robots made of flocked fibres and thermoformed plastic will smear lipstick on your pillow, poke your arm, pinch your earlobe, or pull at your coat.



Fig 4. *Misbehaving Robots* (2017)



Fig 5. *Misbehaving Robots* (2017)

These small, insignificant gestures are so heartwarming. In my opinion, this project is a parody of 'functionalist AI robots'. Why do robots continue to feel alien to humans, no matter how simulated the materials and how comprehensive the service features? Yet the dancing Boston Dynamics robots dog is so endearing. Neglected frustrations, hidden joys, fleeting emotions, the useless behaviours in a relationship are the most realistic mapping. Given that my project also deals with the relationship between humans and non-humans, it is important to avoid falling into the trap of 'cold machines' and to approach it from a human perspective.

4.4. Embarrassed Robots - Design Project

As well as mimicking human behaviour, can robots produce emotional changes on their own? A great deal of artificial intelligence is still in the crude manufacturing stage, and for robots to fit seamlessly into people's daily lives in the future, they will need to be able to reflect people's moods and express themselves. Artist Soomi Park's *Embarrassed Robots* explores how the futuristic technology can be combined with grounded human warmth and allows robots to express emotions through material, form and function. A balloon-headed, clumsy and cute robot inflates its balloon when it senses an awkward human emotion or vibe, thus revealing its changing mood in terms of colour and transparency. Such scenarios can occur when it intervenes in your private moments (going to the toilet), when it touches a stranger (signing for a delivery), when it is clumsy

(knocking over books), and when you are overwhelmed by a date.



Fig 6. *Embarrassed Robots* (2017)



Fig 7. *Embarrassed Robots* (2017)

Notably, Soomi Park constructs an everyday home environment and a robot with a simple structure, making it feel like a scenario that could be realised in the very near future. I did not feel distant in these amusing and harmless scenes of life, which had no fancy futuristic elements and even a sense of vicariousness that made me imagine what it would be like to have an embarrassed robot in my life. This inspired me to think about how do I create a sense of familiarity and intimacy between the scene I have designed and my audience? The setting, the atmosphere, the tone, the props, etc., are all important in the performance and presentation stages. These are the important underpinnings of the performance and presentation stages.

5. Methodologies of the Designer

5.1. Storytelling

Based on the analysis of practice cases, practitioners tend to use speculation, fiction and fabrication when portraying possibilities in future contexts, whether in literature, art and design, or film and television. This approach of imagining the future based on the current situation aims more to stimulate the imagination and reflection of the audience than to verify the truth. This coincides with my original research purpose, and I have applied this 'storytelling' approach to my practice.

In the early stages, I read short science fiction collections such as *Children of the New World* (Weinstein, 2016) and *First Love, Last Rites* (McEwan, 1975) in order to stretch my mind and imagination as far as possible to explore the possibilities of different types of 'human-nonhuman' relationships. These bold, quirky, heartwarming, thrilling, or touching stories inspired me to create a series of quick, quantitative vignettes of 'human-nonhuman' relationship journeys. The narrative in these stories is not linear, but overlaps different choices. Ultimately, many combinations of story scenes are formed under the intricate exit of nodes, I then tried to visualise these stories using sketches and short films. These combinations then become the context, plot and visual basis for my next scene design.



Fig 8. *Script Exercises on Storytelling* (2021)

However, based on the feedback, it seems that my practice at this stage was lacking in unity and wholeness, and I rushed to use a variety of materials and forms to portray the larger atmosphere without capturing the specific narrative structure and visual language. This made me realise that I needed to start 'subtracting'.

5.2.Scenography

The key to streamlining is to give the fragmented and independent short stories a unified and rational overall framework and refine its details. At the same time, the text-driven stories were visualized to enhance the persuasiveness of the stories' contexts. Therefore, with the support of the scenography workshop, I created a complete future world Chinese city called 'Misty City' based on my research question, which I gave the time, location, story context, materials, sounds, atmosphere, specific events, characters, institutions, and the way people move, etc. to take place. Based on the limitations of online classes, I have used images, GIFs, videos and audio to present the world as it is on the online platform. In 2071, in a gloomy but artificially lit mountain town in western China, the Human-Technology Symbiosis Research Group designs and distributes malleable non-human substances called 'Infin' to those in need in order to assess the direction of human-AI robot coexistence, and to track and record their lives with humans over time. Thus, each vignette belongs to one researched person, a complete world view and the various sub-stories within it become clear and logical.



Fig 9. *Misty City* (2021)

During the advancement of my practice, the second season of *Love, Death, Robots* from Netflix was released. As a fan of the series, I was inspired by its framing: a collection of short films under the theme of exploring the relationship between humans and technology in the future, with each story from a different filmmaker seemingly independent but closely connected at its core. Therefore, after conducting audience research on the themes of the branching stories, I finally settled on childhood, intimacy, and landscape as the three chapters of my story's plot. Combined with my research questions, they correspond to: the separation of the individual from the past, the separation of the individual from the individual, and the separation of the individual from the environment.

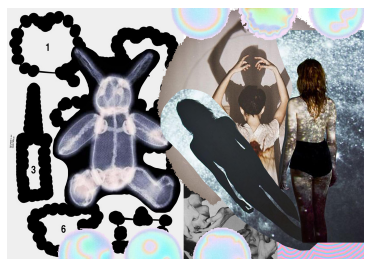


Fig 10. *Childhood* (2021)



Fig 11. *Intimacy* (2021)

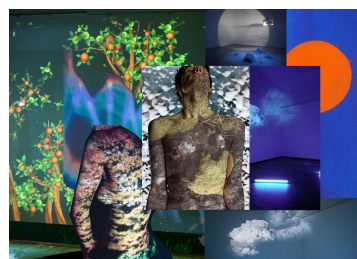


Fig 12. *Landscape* (2021)

I received positive feedback during this phase, as the audience indicated that they were able to get the exact tone, atmosphere and message I wanted to convey while immersed in the world scene I created. Meanwhile, I was challenged: How do I output and implement such a large worldview and three chapters of branching stories?

5.3. Performance

There are numerous avenues for visualizing stories and scenes: visual novels, comics, animation, film, etc., but I would argue that performance is one of the most compelling forms. The atmosphere created by the live stage, sound, and lighting can instantly immerse the audience, and compared to watching from publications and electronic screens, live viewing is undeniably powerful. *Sleep No More*, an immersive play adapted from Shakespeare's *Macbeth*, produced by Punchdrunk, which premiered in New York in

2011, is a key reference for my performance practice. In that play, the audience can casually navigate through the hotel that serves as a theater, following the actors as they engage and explore the intricate story line. Therefore, my challenge was how to integrate participatory performance with the worldview, scenario, and story I created?

However, I realised that the scenarios produced by focusing on the future world actually created a sense of distance and made it difficult for the audience to really integrate. I therefore needed to guide the audience to imagine the future from the perspective of the present rather than placing them directly in a fabricated future environment. I then adapted the performance-based presentation concept and visual form and identified two connections that I would make in the formal performance: the 'present' and the 'future', the 'virtual' and 'reality'.

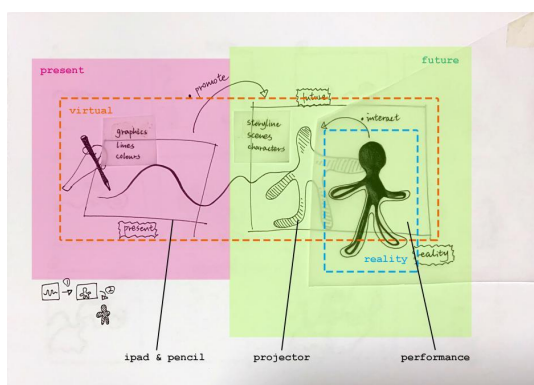


Fig 13. *Diagram of the Two Connections I* (2021)

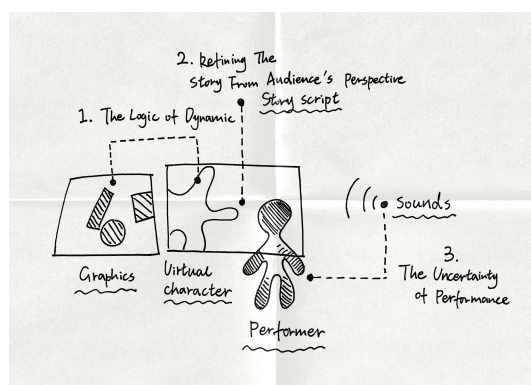


Fig 14. *Diagram of the Two Connections II* (2021)

I tried to seek an approach from the context of graphic design communication. Graphic designer Joana Chicau, based on her background as a ballet dancer, combined with the keen interest she later developed in programming and code, she combined the two elements to make a sensual clash of sensuality and rationality, softness and calmness. She uses the visual language of programming as a projection backdrop overlaid on the limbs of a live ballet performance, where spatial layers are expanded and superimposed in the process of projecting light and body movement. I consider that this spatial change can be applied to the link that I aim to convey: the development of the present drives the scenarios of the future, where humans (real) and Infin (virtual) establish relationships and

experience separation in the future city. For the present and the future, the virtual and the real are interdependent, interlocking and mutually influencing. With this kernel in mind, I gradually fleshed out and visualised the story scripts of the three chapters: childhood, intimacy and landscape, and created videos for performance projection. In terms of projection, movement and spatial changes, based on these three chapters I have refined the visual imagery of 'reflection', 'interchange' and 'overlap' and tried to form such visual perceptions in the performance with body movements and projected light and shadow.

5.4. 'Command-action'

How can the storytelling, scenography and performance that I have used thus far form a systematic design framework and visual language unique to my project practice? Based on the kernel of 'the present drives the future' and 'the interaction between the virtual and the real', I have created a 'command-action' approach as the driving force and bridge between these two connections.

5.4.1. Visual commands

Digital scenographer and graphic designer David Barnett studies moving graphics, theatre and interactive spaces, and in his practice makes extensive use of visual representations of real scenes or trajectories of human activity overlapping with digital graphics as a way of summarising the close connection people have with graphics in their lives. This graphic command and action trajectory has therefore become the main basis for my development of visual command-action. The graphic structure formed by human activity and the space around it is a subtle bridge between time and space, hence my attempt to use graphics as visual commands to drive the actions of the virtual characters in the stories I create.



Fig 15. *Visual Command Experiment I* (2021)



Fig 16. *Visual Command Experiment II* (2021)

This is achieved by showing the left screen as a moving geometric graphic representing the 'present' and the right screen representing the 'future', in which the actions of the virtual character are influenced by the graphic and follow its trajectory. At the same time, the virtual character in the video projection interact with the real performer. The advantage of the visual command-action is that the logic it drives is clear and rational, and easy for the audience to accept and understand. But as a live performance, this single visual command is too conservative and monotonous, and I considered whether there could be a bolder venture in its randomness and initiative?

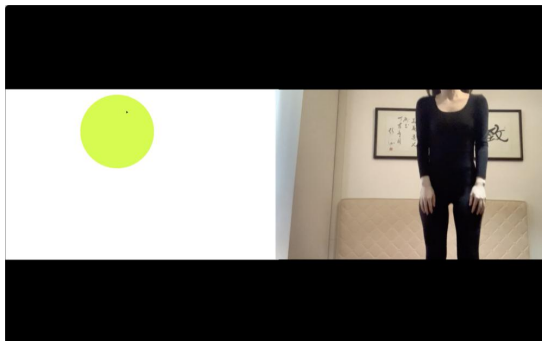


Fig 17. *Graphical Command Logic Test I* (2021)

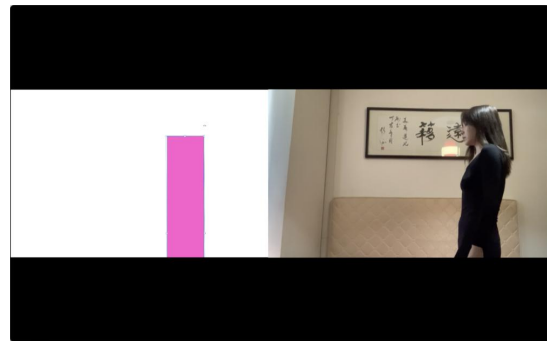


Fig 18. *Graphical Command Logic Test II* (2021)

5.4.2. Auditory commands

In fact, after experimenting with visual commands I realised the importance of sound, both in terms of rules and command settings and in terms of performance and live effects. The lack of proper sound made my videos seem out of place. I then turned to the auditory

command-action approach for experimentation. This was done by collecting and editing diegetic and non-diegetic sounds as commands, and randomly responding to the sound content in a live performance according to established action rules without knowing the content in advance.



Fig 19. *Auditory Command Experiment I* (2021)

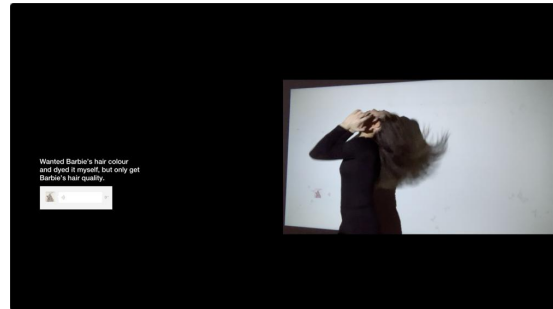


Fig 20. *Auditory Command Experiment II* (2021)

After I tested the true logic of both visual and auditory action, I found a gap between both 'visual following' and 'auditory following', with the auditory gap being greater because the follower needs to hear the sound first, then input it into the brain and translate it into appropriate rule signals before responding. Visual following, on the other hand, is more straightforward, requiring only following the graphic changes seen. Thus, from the audience's perspective without any premise or introduction, the logic of visual command-action is able to respond more directly to their brains, resulting in a higher level of acceptance of the command-action dependent story plots and performances.

After re-evaluating these two sensory command-action methods and the effects they present in live performance, I have chosen to continue to develop and refine the visual command-action, while still enriching the audience's auditory experience during the performance.

6. Audience, Staging, Position

6.1. Audience

6.1.1. Target Audience

Based on the theme of 'separation', I aimed at 'people who have experienced separation' as my target audience, but the scope is still too broad. I have therefore tried to link my event to my future professional profile in order to be more specific and target the audience I will invite to the performance event. My initial career plan after my Masters degree was to use the knowledge, skills and experience I had gained at University of the Arts London as an educator to help high school and undergraduate students in graphic design and visual communication who were interested in applying to art and design universities abroad. Therefore, I started to try and get in touch with a number of art education institutions and I eventually secured a partnership with ATA Creativity Global, an art centre that I joined as a part-time tutor assistant and was allowed to use their studios and facilities as well as organise their students.



Fig 21. *Students in the Arts Centre (2021)*



Fig 22. *Studio And Equipment (2021)*

I therefore tried to relate the theme of 'separation' to this group of students who will be studying abroad as a significant stage in their journey, leaving behind the familiarity of their upbringing to survive and study independently in an unfamiliar city, just as I did when I arrived in London. This change of life pattern and space is precisely a separation, a

temporary departure from family and friends back home, new close relationships in a new environment, and then new choices when graduation comes. This led me to identify 'art and design students who will be studying abroad and facing a significant separation and choice in their lives' as the target audience and the participants of my final event. My intention is to help these young people, who are just embarking on their journey, to think more fully about and understand separation and to be more comfortable with it and the choices they make at different stages of their lives in the future.

6.1.2. Participatory Performance

Within the framework of 'command-action', I have continued to follow this rule in order to develop a participatory approach to audience interaction based on the plot of the story and the live performance. New York's *No More Sleep* immersive theatre allows the audience to move freely around the theatre, to see the actors up close, and to follow different story lines as they choose, but their actions do not affect the development of the play or the direction of the story. In this way, even though they are able to see everything that is happening from a 'God's perspective', there is always a sense of detachment. My challenge was to get the audience to participate in the performance with a sense of purpose and that their activities would also influence the plot.

I then designed an audience participation 'command-action' activity, where I would invite no more than ten audience members as volunteers to perform on stage based on pre-determined rules: performer and participants would stand in a line and move freely around the stage, encouraged to make random movements and changes of route, and others in the line would imitate them, and so the cycle would continue. The rule of thumb for this activity is that the previous person's action acts as a 'command' for the others, the imitation acts as an 'action'. As the audience participates in the performance, the plot of the projected image will then progress and produce the corresponding outcome. Through this act of participatory performance, I hope to further involve the audience in the worldview I have created and to inspire them to move their bodies and create physical acts on the spot, believing that free and comfortable physical acts are the key to activating

the brain and spreading imagination and creativity.



Fig 23. *Participatory Performance Rules I* (2021)

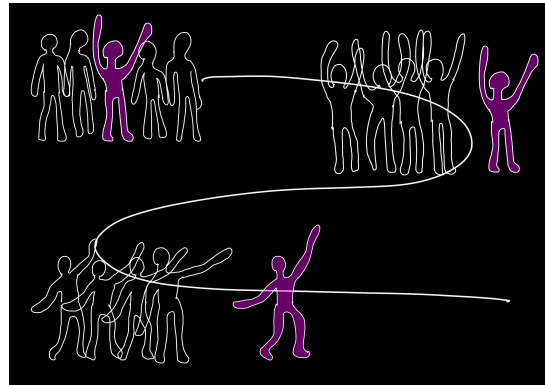


Fig 24. *Participatory performance rules II* (2021)

During the *situates* workshop, I organised a prototype test as well as a formal event in the art centre I recently contacted, where I invited senior and undergraduate students to participate. Based on the feedback from the scene, I found that, perhaps due to shyness or lack of purpose, the participants lacked initiative in being encouraged to do the actions freely and spontaneously. I therefore came up with the idea of assigning the participants 'tasks' in advance, covertly and randomly. By creating invitations in French binding and printing the roles and actions to be performed in the 'hidden space' in the middle of the paper, the participants would be more motivated and purposeful when they knew their 'task'. Next I will refine and test this approach.

6.2. Staging

6.2.1. Space Design

In the *situates* workshop, I incorporated a snapshot of my major project as a means of experimenting and testing the feasibility of my final event. Under the theme of 'Tracing the Yangtze River by walking', three members of our group, based in three different cities in the upper, middle and lower reaches of the Yangtze River basin, organised an on site event using the concepts of 'river' and 'walking' in conjunction with our respective major

project topics, and eventually created a website to summarise and showcase these events. Based on the performance and projection concept of my major project, I created a 'virtual river' in an indoor space using projections and invited the audience to participate in the performance.



Fig 25. *Indoor Virtual River Projection* (2021)

Based on the live results and participant feedback I have gained some reflections that when participants focus on the act of performing itself, the interaction with the projection is reduced to the point where the projection seems to be just an irrelevant background. I tried to solve this issue by enriching the space and the stage layout. As my projected video has two screens, I came up with the idea of using 'corner spaces' or 'one left and one right space', with the aim of blocking or superimposing a single linear space to create more spatial layers and projection angles, and to allow for more freedom of viewing angles and movement on stage. I will continue to test to achieve the most appropriate and desirable results.

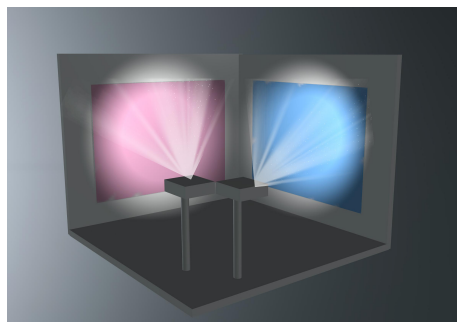


Fig 26. *The Corner Spaces* (2021)

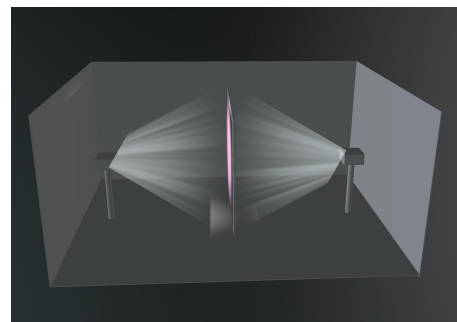


Fig 27. *The One Left And One Right Space* (2021)

6.2.2. Event Venue

In order to ideally implement my live performance event, I set out to find the right solution for the venue, the equipment and the design of the space. Firstly, based on the distance learning model and the fact that I could not use the university's premises and equipment, I needed to find and engage with venues in the community. Therefore, I contacted another graphic design communication remote learner based in Ningbo, Jingyi Xiang, and we had a close online connection during the course and worked together on several group projects. Her family owns a printing factory in Ningbo with a studio, gallery, garden and other facilities, and this is also where she will be making her project activities public. So we agreed to hold our final event as a joint exhibition in factory's gallery, the two hundred square metres Yunhui Art Space. In terms of publicity and invitations, we plan to approach a number of influential designers, artists, magazines or official accounts in the area for a degree of commercial collaboration, offering them stalls or displays at the event, and accordingly they will publicly advertise our exhibition event to attract participants.



Fig 28. *The Yunhui Art Space* (2021)

6.3.Position

Being positioned with an educational purpose in mind, my project activities and concepts are not of a commercial nature, but more inspirational. At this point, a clear and complete framework for the design of a live event with video, projection and performance as affordances and audience participatory performance as modes of interaction was essentially enacted. The concept and aim of the event is to tell the audience the story of the separation of the human-AI robot relationship in a future context through projected visual language and performance, evoking the audience to reflect on the separation experienced and to consider the possible separation from the present to the future, thus perhaps facing the branches and choices of the relationship journey in life more comfortably. Furthermore, through immersive and participatory interaction, the audience is provoked to imagine the relationship between humans and technology as they experience the shifting levels of light and space. Therefore, based on the rules of facilitation, I worked as a bridge to organise and connect the event to the audience, working towards a meaningful experience by staging this unusual and thought-provoking event to bring the audience into the imaginary space I created.

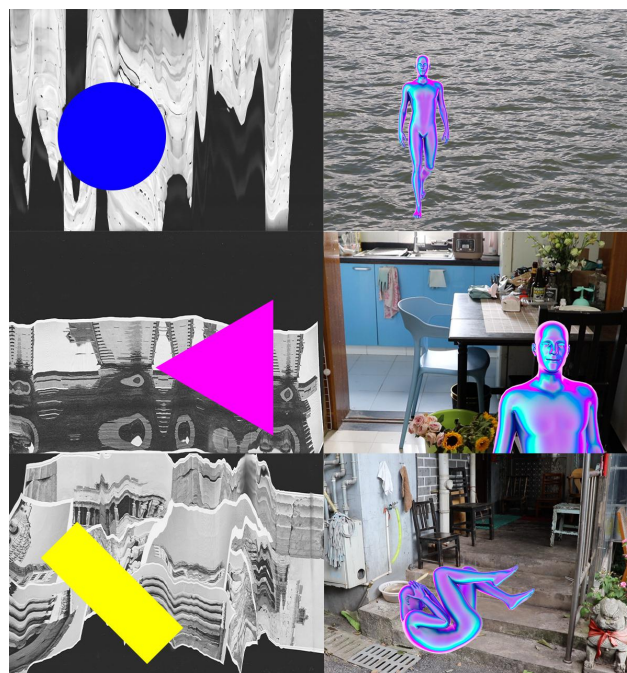


Fig 29. *Sample Video Visual Language.* (2021)

7. Final Statements

From the possibility of separating the human-technological relational journey in a future context to an inspiring and educational participatory performance model, I steadily advance and boldly challenge. My first foray into speculative design and future technology related research topics, I failed and overturned myself in risky and repeated attempts and then explored new and viable paths, eventually, I achieved results that I am proud of.

My experience studying in London has exposed me to performance as applied to the field of visual design, as well as performance practice combined with graphic design, which has inspired me. I considered whether performance could be used as an avenue in graphic design communication education. Performance does not carry much weight in the field of art and design education in China, and in most Chinese universities or educational institutions the more traditional oral mode of teaching is still used, with students rarely having the opportunity to create and express their creativity through physical movement, which I think is a shame. As The Rodina Studio suggests: 'Information is no longer trapped in books, narratives and images, rather they circulate independently in networks. Therefore information no longer exists as a static media, they are processes, connections, interactions, impulses or options.' I believe there is an urgent need for Chinese graphic design students to break out of the static framework and enjoy the adventure of information being active and rampant between different digital and physical layers. After I become a full tutor at the Art Centre at the end of the MA programme, I will continue the core concepts and practical aims of performative design, taking into account the unique situation of Chinese graphic design and leading students to reconceptualise and redefine graphic design from a performative design mindset.

The technological structures and transformations of the physical world are calculated in slow motion, and the journey of life is like a book being read, with words so far apart from each other that the space between the lines is almost infinite, we find ourselves in seemingly distant future stories, where poetry, machines and love are constant themes.

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