

# Designing the Unreachable: Exploring the Virtual Sublime through Environment Design

## 1. A Beginning, A Demand

We need to rethink what virtual environments are actually meant to create. For a long time, experience design in virtual reality and video games has focused on immersion, presence, realism, interactivity and usability. As VR and real-time 3D technologies have developed, virtual environments have become increasingly realistic. However, as an environment artist with three years of professional experience in the VR industry, I have gradually realised that making a virtual world more realistic does not answer a more fundamental question: once we are able to bring people into a virtual world, what do we actually want them to feel there?

What interests me is not only immersion or presence, but moments that seem to go beyond ordinary experience: standing before an enormous virtual structure, facing a space whose boundaries cannot be clearly identified, or feeling small within an environment that seems to extend beyond what can be fully understood. Such moments can evoke awe, wonder, uncertainty and a sense of transcendence. It is this kind of sublime experience that my research is concerned with.

The sublime did not emerge with the digital age. From Longinus to Burke and Kant, vastness, power, terror, obscurity and infinity have played important roles in discussions of the sublime (Burke, 2009; Kant, 1987). These discussions have since expanded into technology and digital media through ideas such as the Digital Sublime and Virtual Sublime (Nye, 1996; Mosco, 2005; Spokes, 2020). Research has also begun to examine how games and VR can contribute to sublime experiences (Kubota, 2016; Kim, 2022; Spokes, 2020). The question, then, is no longer simply whether VR can produce sublime experiences (Chirico et al., 2018; He et al., 2024), but: how do we actually design for them?

For a designer, knowing that vastness may evoke awe is not enough. Is it the physical scale of a space that matters, or the relationship between the person and the environment? Can a finite virtual space be made to feel as though it extends beyond what can be seen through spatial organisation, gaze direction, occlusion or hidden boundaries? Concepts such as infinity, obscurity and transcendence have limited practical value if they cannot be translated into design knowledge. Existing studies have begun this process through perceptual and conceptual vastness, as well as Terror, Distance and Obscurity (Chirico et al., 2018; He et al., 2024).

However, much of this research remains at the level of broad characteristics. It does not fully explain how these characteristics can be constructed through specific decisions in virtual environment design, or how they might relate to one another. Can scale relationships contribute to more than one sublime characteristic? Can the treatment of boundaries affect both infinity and obscurity? My research therefore seeks to move the sublime from something mainly described and interpreted towards something that can also be explored through design, practice and evaluation, without reducing it to a mechanical formula.

The research considers two interconnected levels. The first consists of characteristics associated with sublime experience, including vastness, infinity, scale contrast, obscurity, inaccessibility and transcendence. The second concerns practical environmental design principles, such as spatial organisation, scale relationships, control of the field of view, visual hierarchy, gaze direction, boundary treatment and environmental atmosphere. I want to investigate how these levels relate to one another and how these relationships might form a conceptual framework for virtual environment design.

This means the research cannot remain at the level of theory. Literature and case studies will first identify key characteristics associated with sublime experience and how they appear in games and VR. These findings will inform an initial conceptual framework, which will then be explored through the development of VR environments in Unreal Engine 5. Practice is not simply a demonstration of theory; it is part of the research process itself. When vastness, infinity or transcendence have to become spaces that can actually be entered, abstract concepts become practical questions about spatial organisation, scale, boundaries, viewing position and visibility. The design decisions made in response to these questions become part of the knowledge produced through the research.

The designer's judgement, however, cannot be the end of the process. User experience evaluation will therefore combine questionnaires, semi-structured interviews, physiological measures and behavioural data to examine participants' experiences from different perspectives. The purpose is not to use a single score to prove that 'the sublime happened', but to investigate relationships between design intentions, environmental characteristics and lived experience. Theory, practice and user evaluation therefore form an ongoing process in which each can inform and challenge the others.

Ultimately, I hope to develop a bridge between theories of the sublime and virtual environment design: from the Sublime to the Virtual Sublime, from abstract characteristics to environmental design principles, and from designed spaces back to human aesthetic experience. My aim is not to find a fixed formula for 'producing' the sublime, but to understand how environmental design can create the conditions in which such experiences may occur.

Virtual environments are already capable of creating increasingly vast, complex and realistic worlds, but realism should not be their final boundary. Once we can bring people into these worlds, the next question is what those worlds can make people feel, and how design might move virtual experience beyond immersion and presence towards awe, wonder and transcendence.

## **2. In Other Voices**

If we try to answer the question, 'What kind of virtual environment can evoke a sublime experience?', the issue quickly becomes complicated. The sublime has never had a single definition. From Longinus' rhetorical sublime, to Burke's emphasis on emotion and sensory experience, and Kant's focus on the subject and aesthetic judgement, the concept has continually changed (Longinus, 1995; Burke, 2009; Kant, 1987). These voices do not give us one consistent answer. Does the sublime exist in the object or in the person experiencing it?

Is enormous scale enough? And when psychology begins to measure awe, how far can this be connected with the philosophical sublime?

Longinus:

Perhaps the question is not simply how large a space is. The sublime has the power to take us beyond ordinary experience (Longinus, 1995).

Longinus reminds us that the sublime cannot be reduced to physical properties. If enormous scale alone were enough, virtual environment designers would simply need to keep making spaces larger. Yet some enormous digital environments are merely spectacular, while others produce more complex experiences.

Burke:

But we should not move away from sensory experience too quickly. Terror, power, obscurity, vastness and infinity can all produce powerful emotional responses (Burke, 2009).

This has immediate relevance to virtual environment design. Vastness can be explored through scale and spatial depth; obscurity through visibility and boundaries; and infinity through occlusion or visual extension. Burke therefore offers possible starting points for design practice.

Kant:

But this does not mean that the sublime exists within these objects themselves. The sublime occurs in the subject, when the imagination encounters something enormous, powerful or difficult to comprehend and becomes aware of its own limits (Kant, 1987).

Kant makes the problem more complicated. A designer can construct an environment, but cannot guarantee that the user will experience the sublime. My research therefore needs to distinguish between environmental characteristics and the experienced sublime. The former can be designed; the latter occurs through experience.

Burke:

Even so, if particular characteristics are repeatedly associated with such experiences, they are still worth investigating (Burke, 2009).

Kant:

Yes, but the condition should not be mistaken for the outcome (Kant, 1987).

This tension directly shapes my research. I am not trying to establish a model in which particular design elements necessarily produce the sublime. Instead, I want to identify environmental conditions that may support sublime experiences and investigate how they can be constructed through design.

Psychology brings another voice into the discussion.

Keltner and Haidt:

Awe involves at least two important features: perceived vastness and a need for accommodation. Vastness does not have to mean physical size alone; it can also be conceptual or cognitive (Keltner & Haidt, 2003).

This connects with both Burke and Kant. Vastness brings environmental characteristics back into the discussion, while need for accommodation returns attention to the cognitive process of the person experiencing them.

Kant:

Then the need for accommodation is perhaps not entirely unfamiliar to the idea of the imagination encountering its own limits (Kant, 1987).

Keltner and Haidt:

There are similarities, but awe should not therefore be treated as identical to the philosophical sublime (Keltner & Haidt, 2003).

This distinction is important. I use the AWE-S to evaluate awe-related experience, but do not treat awe and the sublime as interchangeable. The AWE-S includes six dimensions: Altered Time Perception, Self-diminishment, Connectedness, Perceived Vastness, Physical Sensations and Need for Accommodation (Yaden et al., 2019). It provides an empirical route into sublime-related experience without replacing the philosophical and aesthetic meanings of the sublime.

Digital media changes the context again.

Digital Sublime and Virtual Sublime:

The sublime has entered digital space. Digital media can create scales, structures and experiences that do not exist physically, while video games and VR can reorganise space, scale and perception (Mosco, 2005; Kubota, 2016; Spokes, 2020).

Research on the Digital and Virtual Sublime has gradually moved attention from natural landscapes towards technologies and constructed environments (Betts, 2014; Kubota, 2016; Hamer, 2020; Spokes, 2020). Kim (2022) similarly suggests that video games do not create an entirely different sublime, but offer new ways of realising it through immersion, interactivity and virtuality.

Burke:

Do infinity, obscurity and power still exist in a virtual world? (Burke, 2009)

Virtual Sublime:

They do, but they no longer depend on physical nature. A digital space has no real physical scale, yet it can appear boundless. A virtual structure can violate real-world construction and still make the person experiencing it feel small (Kubota, 2016; Spokes, 2020).

Kant:

Then what matters is still not how large the object really is, but the relationship between it and human perception (Kant, 1987).

VR creates particular possibilities because bodily involvement, spatial presence and exploration change the relationship between people and environments. But once this discussion moves into practice, another voice appears.

Virtual Environment Designer:

You have told me that vastness, infinity, obscurity and transcendence might matter. But when I open Unreal Engine, I still need to know: what exactly am I supposed to do next?

This is where my research really begins. 'Create vastness' does not tell a designer how to organise the space, where the user should stand, what scale references should be used, or whether boundaries should remain visible. 'Infinity' does not tell us whether to use occlusion, fog, repetition or visual extension. Theory tells me what might matter, but not yet how to design it.

Existing VR research has begun to address this problem. Chirico et al. explored perceptual and conceptual vastness through VR environments (Chirico et al., 2018), while He et al. translated Terror, Distance and Obscurity into dimensions that could be manipulated and evaluated in VR (He et al., 2024). These studies bring abstract concepts closer to operational environmental factors. From the perspective of environment design practice, however,

another level is still needed: how do spatial organisation, scale relationships, field of view and boundary treatment contribute to these broader characteristics?

Virtual Environment Designer:

Then perhaps vastness is not the final design method. It sits somewhere between experience and design. What I need to understand is which specific environmental design principles allow these characteristics to emerge.

Burke:

Then you are still beginning with conditions provided by the object (Burke, 2009).

Kant:

But the final experience still belongs to the subject (Kant, 1987).

Keltner and Haidt:

And that experience can be investigated through different dimensions (Keltner & Haidt, 2003).

Virtual Sublime:

Digital media provides the space in which these conditions can be deliberately constructed (Spokes, 2020).

These voices do not arrive at a single answer, but together they bring my research to a more specific position. The sublime cannot simply be placed within the environment, but neither can it be discussed entirely apart from it. What design can control are the conditions in which an experience may occur. My task is to understand how those conditions are constructed and how they relate to what people actually experience.

My conceptual framework therefore begins to take shape between these voices:

Sublime Experience → Sublime Characteristics → Environmental Design Principles → Virtual Environment

User experience research then creates a route back towards experience. The framework is not intended to resolve every theoretical debate surrounding the sublime, but to find a position within those debates that is useful for design research.

As a virtual environment design practitioner, I do not need to choose one of these voices. I need to allow them to define the conceptual boundaries of the research together. What remains is a more focused question: if the sublime emerges through the relationship between people and environments, what conditions can virtual environment design create for that experience, and how can those conditions be translated from abstract theory into spatial knowledge that can be designed, practised, reflected upon and evaluated?

### **3. Scenes from a Researcher's Life**

The first time I really began to see that this research might be different from my previous work was not while reading Burke or Kant. It was when I looked back at the virtual environments I had created over the previous few years. As an environment artist with three years of professional experience in the VR industry, I had become used to judging whether models were detailed, materials looked realistic, lighting felt natural, and an environment created a convincing sense of presence. But I gradually realised that realism did not necessarily make an environment memorable. Some less realistic spaces stayed with me because of their enormous structures, unreachable areas, unclear boundaries, or moments when I suddenly felt very small. This shifted my attention from 'How can I make a virtual

environment more realistic?' to 'What can a virtual environment actually make us feel?'

Once I began designing the research, I encountered my first conflict. As a designer, my instinct was to use dramatic lighting, music, interaction and narrative. As a researcher, however, I needed to understand which aspects of environmental design contributed to the experience. VR and video games involve interconnected layers of environment, sound, narrative and interaction (Betts, 2014). If they all change at once, it becomes difficult to explain what is shaping the experience. I therefore chose to focus primarily on virtual environment design, while keeping other factors as consistent as possible.

This became a negotiation between two parts of my practice. A designer wants to create a complete experience, while a researcher sometimes has to introduce limitations. Every design decision now brings another question: is this helping me investigate the research question, or adding another variable that I cannot explain? Becoming a practice-based researcher does not mean that I stop designing. It means taking greater responsibility for explaining my design decisions.

This tension became clearer when I asked how 'vastness' could actually be designed. Vastness, infinity, obscurity and transcendence may seem relatively clear in theory, but they become much more specific when I open Unreal Engine. How large does a space need to be before it feels vast? If I enlarge a building by ten times, am I investigating the sublime, or simply making an enormous model? Does infinity require a genuinely extended space, or can it emerge through occlusion, fog and hidden boundaries? These questions made one thing clear: theory does not automatically become design.

Existing studies have begun this process of translation. Chirico et al. designed VR environments around perceptual and conceptual vastness (Chirico et al., 2018), while He et al. translated Terror, Distance and Obscurity into dimensions that could be manipulated in VR (He et al., 2024). From the perspective of an environment designer, however, I still need to ask how spatial organisation, scale relationships, field of view and boundary treatment contribute to these broader characteristics. This is the more specific design level I want to explore.

This raises a more fundamental question: am I using practice to 'prove' theory, or allowing practice to produce knowledge that theory has not already given me? If I simply build environments around vastness, infinity and obscurity and then show that enormous spaces can evoke awe, practice risks becoming a visual illustration of theory. For me, practice needs to generate knowledge, test ideas and allow the initial framework to change.

For example, I might initially assume that scale is the main basis of vastness, but through making I may find that size alone is not enough. The relationship between the body and a large structure, viewing position, spatial depth and visible boundaries may work together to shape the experience. One design principle may also contribute to several characteristics: hiding boundaries might strengthen both infinity and obscurity, while scale contrast might contribute to vastness and self-diminishment. These relationships may themselves become knowledge generated through practice.

The three experimental environments create another tension between visual quality and research control. As a designer, I want them to be visually expressive. As a researcher, I have to consider whether differences in experience can still be interpreted if the environments differ too much. They need sufficient visual quality while remaining reasonably consistent. Making

an environment look better and making it more suitable for research are not always the same thing.

Then comes a more difficult question: how do I know that participants experience what I think I have designed? I may intend a composition to create vastness or a hidden boundary to suggest infinity, but participants do not know these intentions. They may simply feel tense or think that the environment looks good. Designing something for vastness does not mean that a participant will experience vastness.

The AWE-S can provide structured measures of different dimensions of awe-related experience (Yaden et al., 2019), while interviews can help me understand what participants noticed and how they interpreted the environment (Chirico et al., 2018; He et al., 2024). I also plan to use GSR and eye tracking as supporting evidence (Toczek, 2016; Ishaque et al., 2020; Kim et al., 2024). But more data does not automatically produce a more certain answer. GSR alone cannot distinguish awe from fear or tension, while eye tracking can show where someone is looking but not why. Different forms of evidence therefore need to complement, and sometimes challenge, one another.

When the research involves terror, obscurity and feelings of being overwhelmed, ethics cannot remain something that exists only on an ethics form. If a participant is clearly uncomfortable, my first concern must be whether they want to continue, even if the experience is producing 'valuable' data. A stronger experience does not necessarily mean a more successful one.

There is also one variable I cannot control in the same way as sound or lighting: myself. I am both the researcher and the designer of the virtual environments. My professional experience helps me understand that an instruction such as 'increase scale' may involve model dimensions, viewing position, scale references and visual composition. This insider position is a research resource, but it can also introduce bias. I may place too much confidence in methods I already know, want an environment I have spent months creating to produce the expected result, or unintentionally guide participants towards my framework. My experience is therefore both a research resource and a position that may influence my judgement.

I increasingly understand this research as a process of negotiation between theory and practice, creative freedom and research control, design intuition and user evidence, and professional experience and critical reflection. I still want to develop a clear conceptual framework, but I accept that it should change through practice.

If participants respond differently from what I intended, I do not want to treat this as a failure. Practice-based research is not about using an artefact to prove that the researcher was right from the beginning. When abstract concepts become actual spaces, and the designer's intentions encounter another person's body, gaze and experience, practice can produce knowledge that cannot be gained through literature alone. The answer is not decided first and then built in VR; it develops through making, experiencing, questioning and redesigning. For me, the biggest change in moving from environment artist to practice-based researcher may not be learning more research tools, but accepting that my own design decisions need to be questioned. In the past, I might have asked whether an environment looked good or felt complete. Now I also need to ask: Why did I design it this way? Did participants experience it as I expected? If not, does the design need to change, or does the theory? Only when these decisions are recorded, explained and reflected upon can professional design intuition begin

to become knowledge that can be discussed with others.

What I hope to produce, then, is not simply three VR environments or a set of data about awe, but an ongoing relationship between theory, practice and user experience.

I am still a designer, but I can no longer rely only on the designer's eye. I am becoming a researcher, but I do not want that to mean reducing design to a set of abstract variables. It is in the tension between these two roles that the virtual environment becomes more than a research object or final artefact. It becomes a place where questions can be explored, evidence can emerge, and my own understanding as a researcher can change.

#### **4. Ecologies**

My research does not emerge from a single theory or technology. It sits at the intersection of several fields. Theories of the sublime provide its philosophical and aesthetic foundations; the Digital and Virtual Sublime bring these questions into digital media; psychological research on awe offers ways of understanding and evaluating experience; VR changes the relationship between people and virtual space; and virtual environment design translates abstract concepts into space, scale, boundaries and visual relationships. Practice and user research allow these relationships to be constructed, experienced and reconsidered. Rather than separate stages, I see these fields as an ecology in which each influences the others.

At the centre of this ecology is my main research question: what environmental factors within virtual spaces in VR can evoke sublime experiences? From this, I ask how these factors can be constructed through design, how environmental characteristics and design principles relate to one another, and whether these relationships can form a conceptual framework for virtual environment design. The micro level therefore concerns what happens when the sublime, VR and environment design meet.

Surrounding this question are theories of the sublime. From Longinus to Burke and Kant, the sublime developed from rhetoric towards sensory experience, emotion and subjective aesthetic judgement. The Technological, Digital and Virtual Sublime later extended these discussions into technology and digital media (Burke, 2009; Kant, 1987; Nye, 1996; Mosco, 2005; Spokes, 2020). These theories provide concepts such as vastness, infinity, power, obscurity and transcendence. For my research, however, they lead to a practical question: what do these abstract ideas actually mean within a virtual space that has to be designed and built?

Research on the Digital Sublime, Virtual Sublime and video games forms an important connection between traditional theory and virtual environment practice. Digital media do more than reproduce sublime landscapes from the physical world. Immersion, interactivity, virtuality, spatial presence and bodily involvement can change the relationship between the person and the sublime object (Thomas, 2014; Kubota, 2016; Spokes, 2020; Kim, 2022). Virtual spaces can also move beyond real-world gravity, structural logic and physical boundaries, creating spatial relationships that would be difficult or impossible to experience physically.

Another connected field is psychological research on awe and VR user experience. Keltner and Haidt's (2003) perceived vastness and need for accommodation provide psychological dimensions through which awe can be investigated. Chirico et al. explored perceptual and conceptual vastness in VR, while He et al. translated Terror, Distance and Obscurity into

conditions that could be manipulated in virtual environments (Chirico et al., 2016; Chirico et al., 2018; He et al., 2024). This provides an empirical route into experience, but also reminds me that I cannot simply declare a space 'sublime' based on my judgement as a designer. Design intentions have to encounter the experiences of actual participants.

What remains less developed is the part of this ecology most important to my research: virtual environment design practice. Existing research has shown that VR can evoke awe and sublime-related experiences, but much of it remains focused on broad characteristics such as vastness, scale, terror, obscurity and transcendence. There is less discussion of how these characteristics are constructed through specific environmental design relationships, or how different factors interact. My research therefore introduces environment design as a more explicit level of investigation rather than simply adding another experiment showing that 'VR can produce awe'.

The ecology moves from abstraction into practice and then back towards experience. Sublime Theory provides concepts such as vastness, infinity, obscurity and transcendence. The Digital / Virtual Sublime reconsiders them within digital media. Environment Design translates them into spatial organisation, scale relationships, field of view, boundary treatment and atmosphere. Practice uses Unreal Engine 5 to build these spaces, while User Experience Research uses the AWE-S, interviews, and physiological and behavioural data to examine how participants experience them. Through literature review, case studies, creative practice and user evaluation, the conceptual framework can be developed, applied and reconsidered.

This relationship is not one-way. Theory influences design, but practice may reveal that theoretical concepts are too broad. Participants may experience an environment differently from what the designer intended, while user research may require the original framework to change. My professional experience can support the research, but my insider position may also influence my judgement. I therefore understand the research as a feedback ecology, rather than a straight line from Theory to Result. The framework develops through movement between theory, cases, practice and user experience.

At the macro level, the research sits primarily within practice-based research in Art & Design, while also connecting with VR/HCI, User Experience Research, and Game and Immersive Media Design. Beyond these fields are rapidly developing real-time 3D technologies and immersive digital media practices. Virtual environments are now used across games, education, cultural heritage, virtual tourism and artistic practice. This gives the research a wider professional context: moving beyond realism, immersion and usability to ask what kinds of complex aesthetic experiences virtual environments might support.

This is why I hope to develop more than a set of rules for three experimental environments. I want to build a conceptual framework that can continue to be discussed and used within virtual environment design practice. It sits between philosophy, aesthetics, psychology, VR research and design practice: drawing concepts from theories of the sublime, ways of understanding experience from awe research, media conditions from VR, and practical possibilities from environment design. Practice-based research allows these different areas to meet.

My position within this ecology is not that of someone providing the final 'answer'. I see myself more as a point of connection between different fields: between long-established theories of the sublime and rapidly changing digital technologies, and between the designer's practical

knowledge and the participant's unpredictable experience. My research attempts to bring these different languages into conversation, turning concepts such as vastness into spatial questions that designers can work with, while allowing participant experience to challenge the designer's assumptions.

This ecology should not stop when the research ends. A useful framework should not close these relationships down, but leave room for new design practices, research evidence and experiences to enter and change them.

## **5. Unreachable Image**

When I put on the VR headset, I know that I am still standing in a real room. Only a few seconds earlier, I could see the people and equipment around me, and I know that everything I am about to experience is generated by a computer. But once the image appears, I find myself standing somewhere else.

When I first see the enormous structure in the distance, I simply think that it is large. But very quickly, I realise that I have no idea how large it actually is. There are no familiar doors, windows, people or other objects to help me judge its scale. It fills much of my view, yet remains too far away for me to judge the distance properly. I try to compare it with things I know from the real world, but the more I search for a familiar reference, the less certain I become. The object itself has not changed, yet in my perception it seems to grow larger.

I begin walking towards it. I expect it to become clearer as I get closer, but it still seems to keep its distance. I know that this virtual world must be finite. Every model has dimensions and coordinates, and somewhere there must be a boundary. But this information belongs to the designer and the computer, not to my experience of the space. I cannot see where the environment ends. A space that is technically finite has, for a moment, lost any clear boundary in my perception.

The feeling becomes stronger when I look upwards. The structure continues above me, beyond my normal field of view, and I have to lift my head to search for the top. I am not simply looking at an image of an enormous building on a screen. My position, gaze and movement all become part of how I understand the space. I know that the structure has no real weight and will disappear when I remove the headset, but my body still has to look up, turn and move in relation to it. I begin to feel small.

This sense of smallness does not make me want to leave. Instead, I become interested in what I cannot see. Parts of the environment are hidden by fog, darkness or other objects. I cannot tell what lies behind them, or whether the structure continues beyond what is visible. If everything had been clearly presented from the beginning, perhaps I would have understood the space quickly and stopped looking. Instead, what remains unseen allows it to continue in my imagination.

At the same time, I become aware that all of this has been deliberately designed. Someone decided how tall the structure should be, which boundaries to hide, and where I would stand when I first entered. I begin deliberately looking into corners, at the ground, and towards places that seem unimportant. I look for repeated materials, unnatural shadows or anything that might reveal the edge of the environment. It is as though I am trying to remind myself that this is only a virtual space made from models, materials, lighting and code. Perhaps if I

can find its boundary, it will no longer seem so large.

But when I look up again, the structure is still there. Knowing that it is not real does not make it feel smaller. Rationally, I know that I am standing safely in a room, while visually I am facing an enormous space whose boundaries I cannot identify. I know that the distance cannot continue forever, yet I still cannot see where it ends. This space does not exist, but I am experiencing it as something real.

After a while, I stop trying to work out how many metres the space covers or how tall the structure might be. I begin to realise that 'large' may not simply be a question of dimensions. The environment remains beyond what I can see and understand all at once. I have to turn, look up and move. Each movement gives me more information, but also reveals new areas that remain unseen. The space never presents itself to me in its entirety.

I still have not reached the distant area, and I begin to wonder whether I even want to. If I could finally stand beneath the structure and clearly see its model, materials and boundaries, perhaps some of what I felt earlier would disappear. Distance allows it to remain uncertain, while the unseen parts continue to exist in my imagination. What draws me towards the environment is not only what I can see, but also what remains beyond my view.

When the experience ends, I see the real room again. The enormous space has left nothing physical behind, but I still remember looking upwards and the distance I never completely crossed. If a researcher asked what I had experienced, I might struggle to choose between awe, fear, wonder or the sublime. It feels more like curiosity, attraction, uncertainty, slight unease and a sense of smallness occurring together.

If I had to describe what happened, perhaps I would simply say: I saw a place that I could never fully see.

I know that it was designed, and I know that it had boundaries. Yet this knowledge did not allow me to fully grasp the space while I was inside it. What remains in my memory is not how large the structure actually was, but the experience of trying to understand it, approach it and see it clearly, while always feeling that some part remained beyond my sight and understanding. Even after removing the headset, that sense of something unfinished remains.

## **6. To the Stranger**

To whoever happens to come across this research in the future,

I do not know when you will be reading this. Perhaps by then VR headsets will be much lighter, and real-time rendering will be able to create digital spaces that are almost indistinguishable from reality. Perhaps you are researching video games, virtual reality, immersive art, or some form of media that does not yet exist today. You may not even be interested in the word 'sublime', but instead be studying awe, transcendence, or other experiences that cannot easily be explained through immersion and presence. But if you have ever stood before something enormous, distant or difficult to fully understand in a virtual world, and wondered why that moment felt different from an ordinary experience, then perhaps we are asking similar questions.

If there is one piece of advice I would like to leave with you, it is this: do not begin by asking how to 'produce the sublime'. Burke's discussions of vastness, power, obscurity and infinity, together with research on the Digital and Virtual Sublime, provide important ways of

understanding the sublime in digital environments (Burke, 2009; Mosco, 2005; Spokes, 2020). But Kant also reminds us that the sublime cannot simply be treated as a fixed property of the object itself (Kant, 1987). We can design enormous spaces, hide boundaries and manipulate relationships of scale, but this does not mean that we have 'designed the sublime'. What we can really design are the conditions in which such an experience might occur.

So, always keep a distinction between environmental conditions and the experienced sublime. Existing VR research has explored perceptual vastness, conceptual vastness, Terror, Distance and Obscurity as design interventions, showing that abstract concepts can be translated into environmental conditions that can be investigated through research (Chirico et al., 2018; He et al., 2024). But this does not mean that there is a repeatable 'recipe for the sublime'.

If my research eventually establishes relationships between sublime-related characteristics and spatial organisation, scale relationships, control of the field of view, the treatment of boundaries and environmental atmosphere, please do not treat the resulting framework as a finished answer. Can one design principle influence several characteristics of the sublime? Can different strategies strengthen or weaken one another? Can these relationships be transferred across different artistic styles, cultural contexts or media? The framework should remain a starting point that can be changed, rather than a fixed set of rules.

I also hope you remember the tension between research control and the integrity of design practice. Do not simplify a virtual environment so much in the pursuit of cleaner data that it loses its value as a designed experience. At the same time, do not allow the work itself to overwhelm the research. If music makes an environment more powerful but leaves you unable to tell whether participants are responding to the space or the sound, then its role needs to be reconsidered. My decision to focus on virtual environment design does not mean that sound, narrative and interaction are unimportant. It simply recognises that research also needs to know what it is not trying to answer, at least for now.

If possible, I hope you will also work with a wider range of participants and research contexts. People of different ages, cultural backgrounds and levels of VR experience may respond very differently. Someone who has spent years playing video games may already be familiar with enormous virtual architecture, while someone entering VR for the first time may experience it very differently. As our experience of digital media changes, the visual languages we currently understand as 'enormous', 'unfamiliar' or 'surreal' may also change. No framework for designing the Virtual Sublime should therefore be treated as permanent.

I hope you remain equally cautious about measurement. The AWE-S provides a way of measuring different dimensions of awe-related experience (Yaden et al., 2019), while GSR, eye tracking and interviews offer different forms of evidence. But do not allow the tools to define the experience for the participant. A peak in GSR is not the sublime. A long fixation is not awe. An AWE-S score cannot fully represent what someone experienced inside a virtual space. Different forms of evidence should support one another, but they should also be allowed to disagree.

Pay particular attention to responses that do not fit the framework. If you design a space to suggest infinity and participants simply feel lost, or if an enormous structure is intended to create self-diminishment but someone instead experiences calmness or curiosity, do not be too quick to treat these responses as failures. Sometimes the experiences that differ most from what you expected are the ones most likely to reveal what the framework is missing.

There is one more thing to keep in mind: the position of the designer as researcher. If you build the experimental environments yourself, your insider knowledge can give you access to parts of the practice that an outside observer might not see, but it can also introduce bias. Record your design decisions, but also record failures, changes and anything that contradicts your original assumptions. In practice-based research, the process through which a framework changes may be just as important as the framework you eventually produce.

If you continue to explore intense experiences such as terror or being overwhelmed, do not allow 'stronger is better' to become a design principle. If a participant wants to leave the experience, the first question should not be whether this proves that the design worked, but whether that level of intensity was necessary in the first place. Ethics should be part of decisions about the environment and the intensity of experience from the beginning.

Finally, even if future technologies can create virtual worlds far larger and more realistic than those we can build today, I hope you will not automatically equate 'more realistic' with 'more experientially meaningful'. How large a world technology allows us to create and how deeply that world can affect someone are not the same question. What remains worth understanding is the relationship between spatial organisation, scale, boundaries, visibility and human perception.

So please do not treat the framework I leave behind as the final destination on a map. Take it into new spaces. Let different people experience it. Test it against different technologies, cultures and design languages, and see where it stops working. If future research shows that some of my assumptions were wrong, that does not invalidate this research. It means that the framework is still capable of generating new questions.

I increasingly believe that what we need to leave behind is not a manual for how to produce the sublime, but a way of continuing to question the relationship between virtual environments and human experience.

If you are still asking this question, then this research is not finished.

Best wishes,

A designer still learning how to become a researcher

## **7. Afterword: What the Writing Taught Me**

Before I began writing this Dossier, I understood my research in a much more linear way. I would identify environmental characteristics associated with sublime experience through theory, translate them into virtual environment design, explore them through practice in Unreal Engine 5, and finally evaluate participants' experiences. That direction still makes sense, but I now see that theory, practice, participant experience and the researcher do not simply appear one after another. They repeatedly return to, and change, one another.

The Manifesto made me reconsider why this research needs to be undertaken. I previously explained it mainly through a research gap: existing work on the Virtual Sublime and awe in VR pays limited attention to specific environmental design factors. But the motivation also comes from my own practice. I can already create realistic and immersive virtual environments, yet I am increasingly interested in what kinds of experiences they can create, rather than simply whether they feel real.

The Dialogue changed the way I think about theory. Burke draws attention to sensory

conditions, Kant reminds me that the sublime cannot simply be treated as a property of an object, awe research provides dimensions such as vastness and need for accommodation, while the Digital and Virtual Sublime bring these questions into digital media. These different positions should not be reduced to a simple list of 'sublime factors'.

This helped me make a clearer distinction: what I can design are the environmental conditions in which a sublime experience might occur, rather than the sublime experience itself. A designer can control space, scale, boundaries and viewing relationships, but cannot guarantee how another person will experience them. My research has therefore moved away from asking 'How can I design the sublime?' towards asking what environmental factors might support sublime experiences, how they can be constructed through design, and how participants respond to them.

The Monologue made me reconsider my own position as a researcher. I previously saw my professional experience in VR environment design mainly as an advantage, but it also requires reflection. The designer wants an environment to be complete and expressive, while the researcher must consider variable control and remain critical of the results. Becoming a practice-based researcher therefore means not only bringing professional experience into the research, but also allowing that experience to be questioned.

The Ecology showed me that the research sits between different bodies of knowledge. Philosophy provides concepts, psychology and VR research help me understand experience, design practice translates abstract ideas into spatial form, and participants challenge the designer's assumptions. Interdisciplinary research is therefore not only about making connections, but also about recognising the boundaries of what my research can answer.

The Meditation made this complexity more visible. Vastness, infinity, obscurity and self-diminishment may be relatively clear as theoretical concepts, but they can overlap within actual experience. The value of a conceptual framework is not to make complex experiences simple, but to help us understand the relationships between them.

This has also changed what I expect from user research. The AWE-S, interviews, GSR and eye tracking can provide different perspectives, but measurement should not be treated as a way of obtaining 'the truth'. Different forms of evidence do not always need to agree. Triangulation should allow them not only to support, but also to challenge, one another.

The Letter made me reconsider what I want the research to leave behind. I still hope to develop an environment design framework for the Virtual Sublime, but not a formula suggesting that 'large scale + hidden boundaries + fog = the sublime'. Instead, I want it to show relationships between environmental characteristics, design decisions and participant experience, while remaining open to testing and revision through practice.

Looking back across the Dossier, each form of writing placed me in a different relationship with the research. The Manifesto brought me closer to my motivation, the Dialogue placed me between theoretical positions, the Monologue made me confront my role as a researcher, the Ecology revealed wider relationships, the Meditation moved me temporarily towards the experience itself, and the Letter placed the research in relation to the future. This helped me understand why polyphonic writing is appropriate for practice-based research: theorists, designers, researchers and participants may all interpret the same virtual environment differently.

It has also changed how I understand myself as a researcher. I am more accustomed to

thinking as a VR environment artist or designer, asking whether a space is realistic, complete or visually engaging. Research requires different questions: Why does this scale work? Why might a hidden boundary create infinity? Why might another person disagree with my interpretation of an environment as sublime? Design therefore becomes more than producing an outcome. It becomes a process through which questions and knowledge can emerge.

Perhaps the most important thing this Dossier has taught me is not how to define the Virtual Sublime more precisely, but how to allow uncertainty to remain within the research. A clear research question and methodology do not mean that I need to know the answer in advance. Practice should be able to change the framework, participants should be able to challenge design intentions, and data may require me to reconsider theory.

At the beginning, I understood my task as 'identifying the factors that constitute the Virtual Sublime and translating them into design principles'. I would now describe it differently: to investigate the relationships between sublime-related environmental characteristics, specific design decisions, virtual spaces and human experience, and to understand how these relationships can be discovered, questioned and reorganised through practice.

I still hope to develop a framework, but I no longer want it to close the question. I want it to leave enough space for the next design, the next participant and the next researcher to change it.

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