

The Presence of Space: Embodiment, Vision, and Art

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Abstract

The dominant Western conception of space remains the Cartesian paradigm - despite many possible alternatives. This is further reinforced by ubiquity of perspectival space, and the dominance of photography, which reifies this paradigm. This project investigates the self's relation to space by examining personal, artistic and social frameworks of experiential observation, in doing so, it seeks to evoke these broader conceptualizations of space.

The research firstly establishes a framework of references related to the cosmos, the earth and the solar system, with concepts around locating the body in space, and notions of alignment, movement, distance, scale and pattern. The body of creative works which include site-specific installation, wall painting, drawing, photography and animation, are collectively titled the *Gnomon Experiments*, and explore various uses of the term 'gnomon' which refers to locating ones' self in space, point-of-view, and alignment.

The research also examines the reflexive nature of systems of representation of space such as linear perspective, photography, screen and optics in influencing the expression and experience of space, through the theories of Erwin Panofsky and Vilem Flusser who respectively examine these 'learnt perceptions' as ideologies encoded with complex symbols and metacodes. This research investigates the possible applications, implications and readings these ideologies might have in spatial arts practice and other works that engage the embodied experience of the viewer.

Using various techniques of merging the appearance of two and three-dimensional space the artist endeavours to understand how photography influences spatial practice even in the absence of lens or print. Many of the works incorporate visual illusions and anamorphic distortions where movement and the embodied experience of the participant activates the work. The work questions how we come to feel located in space, and how we construct a sense of space not just around us, but from within us. The project culminates in a minimalist room scaled installation that embodies spatial experience. The percentage split of this research is 75% creative practice, and 25% written dissertation.

Declaration

This is to certify that

- (i) *the thesis comprises only my original work towards the masters except where indicated in the Preface*,*
- (ii) *due acknowledgement has been made in the text to all other material used,*
- (iii) *the thesis is 12,800 words in length, exclusive of tables, maps, bibliographies and appendices*

Lucia Lucinda Giuseppina Rossi

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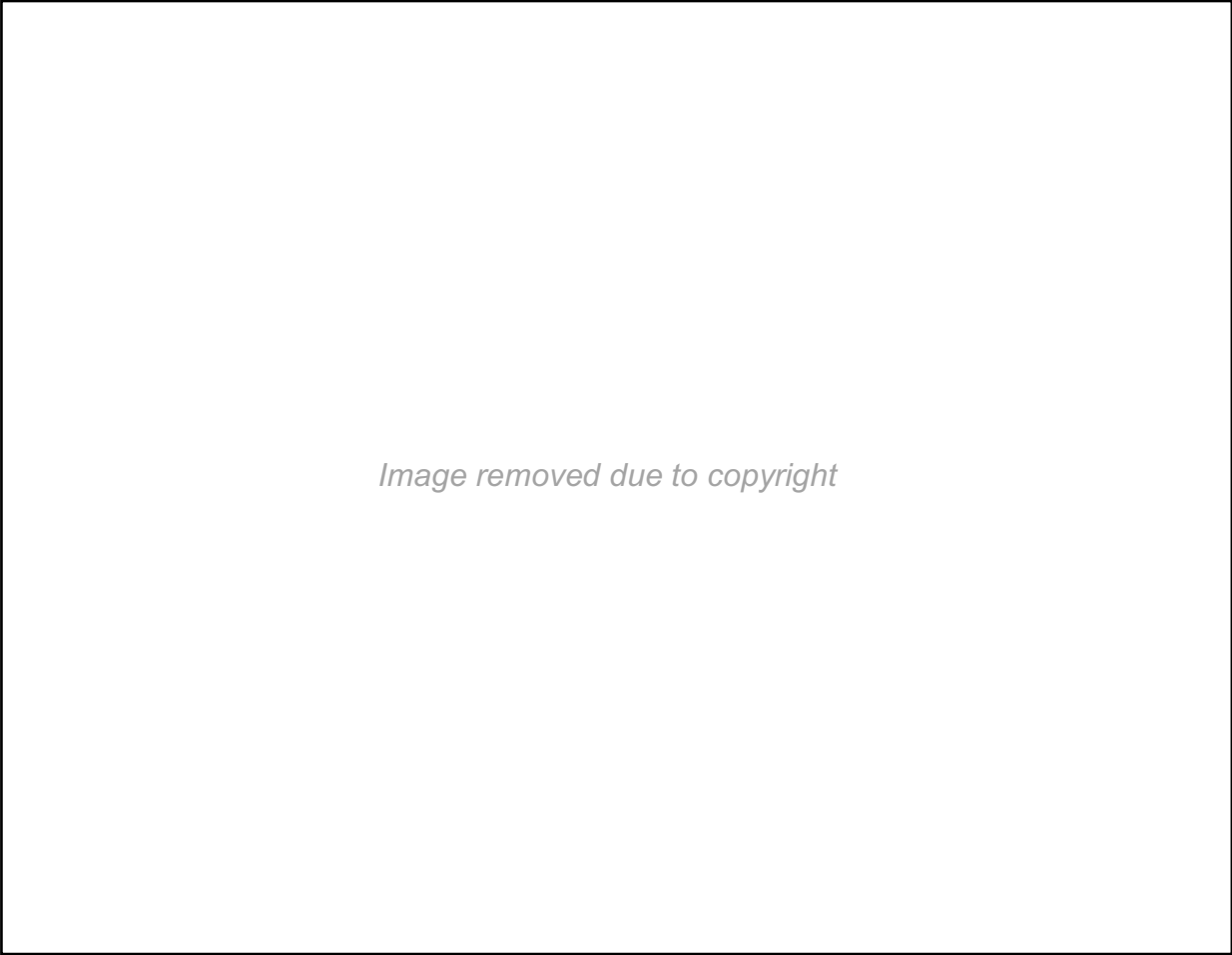


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Fig 1: Dennis di Cicco, Analemma, 1979, 8:30am, Watertown Massachusetts, Latitude 42.2215°N, © Dennis di Cicco

Introduction

The Cosmic Frame-of-Reference

In 2017 I became interested in a natural phenomenon called the analemma. This is the asymmetrical figure eight pattern that the sun traces in the sky over the period of a year, when viewed from the earth at the same time and place each day (Fig 1).¹ The durational unfolding of this pattern has been noted and recorded, using various methods, for thousands of years. In the field of archaeoastronomy, there are evolving discoveries and interpretations of the different uses of these analemma recordings.² It predominantly functioned as an orientation device in space and time, such as the diurnal sundial or annual calendar. Eventually it also appeared on maps to note the declination of the sun, seasons, and also the longest and shortest days. Specific aspects of this phenomenon captured my interest and set a cornerstone for my thesis research.

The first of these was that the pattern is created from a fixed view-point, in both space and time, on a moving frame-of-reference (the earth). Secondly, the movement and angle of this moving frame-of-reference (the earth) creates the pattern, not the object itself (the sun). Thirdly, there is a vast contrast in scale relationships between the viewer, the observed object, and its reproduction. Fourthly, that the pattern is not observable all at one time, it must be marked or recorded over time.

At some point, someone invented the first analemma 'technology' by locating themselves in a fixed position, and marking out a point in this rhythmic cycle, in reference to the horizon, and other key landmarks in the environment. Without going into the details of possible deities or spiritual mythologies that were also associated with this knowledge, the analemma began to serve as a tool and a reference image with a specific function - to orient ones' self in space, to navigate, and to mark time. Once this image functioned in daily lives, it started to represent something beyond a tool. For many ancient civilizations, it became encoded with cultural and social significances and symbols, such as spiritual contexts, seasons and availability of food,

¹ This image by Dennis de Cicco is the first known photograph of an analemma produced on a single frame of film. The photograph of the site is a separate image. With its year-long exposure time, analogue capture is quite rare.

² Richard Kittler and Stanislav Darula, "Analemma, the Ancient Sketch of Fictitious Sunpath Geometry: Sun, Time and History of Mathematics", *Architectural Science Review*, Vol.47, 2004, No. 2, p.141-144.

temperature variation, and diurnal rhythms of light and dark.³ The evolution of the analemma as a tool highlights that locating ones' self in near space, on this earth, and in relation to the sun, is a primal action of being connected with a wider universe.

Humans seem to have always speculated on their orientation in the universe. Recently, advancement in technologies, space travel, systems of measurement, and optics, has allowed humans to see further and further into unknown territories, not only into the macroscopic universe, but also the microscopic universe. This quest to know where we are in space, and if there are limits and boundaries to this space, taps into deeper existential questions of 'why are we here?' and 'where did we come from?'. In 1968, during a circumnavigation of the moon, the Apollo 8 astronauts saw and filmed the earth for the first time, from the perspective of outer space. They describe this experience as inducing a powerful and affecting cognitive shift, and an overwhelming sensation of oneness with the earth and the universe.⁴ This unique experience of witnessing this distant view of earth - of seeing ones' self as part of, and in reference to, a greater whole - has become known as the '*overview effect*', a term coined by Frank White in his 1987 book of the same name.⁵ White states, that some astronauts such as Edgar Mitchell (Apollo 14), experienced a particularly profound, even spiritual sensation of oneness in space, which he terms as more of a '*universal insight*'. Mitchell adds that, while the experience of oneness with earth is common for astronauts in space, conversely and not unlike going into a cathedral, it is not a given that an individual will necessarily experience something profoundly moving or spiritual.⁶ He adds that other contributing factors must play a significant role in the euphoric feelings of the *overview effect*. These include zero gravity, as well as distance and proportional relationships. Also, the fact that the sun, when seen in a black sky

³ Some examples include: In Mesopotamia and Egypt used as time keeper and calendar (approximately 2020BCE). Kittler & Darula, "Analemma, the Ancient Sketch of Fictitious Sunpath Geometry", 141-144, quoted in Verkhovsky, B.S, "Amended Julian worldwide calendar" in *Annals of the European Academy of Sciences*, Brussels 2003, pp.334-6.

The Late Bronze Age (approx. 1700-1200 BCE) Srubnaya culture potentially used the analemma for orientation as well as mythological context and sacred geography related to the North marker as observed in the Varvarinsky stone slab located in Rostov Oblast, Russia, marked with petroglyphs which are hour markers of an analemmatic sundial: Larisa Vodolazhskaya, et al. "Image of an Inverted Tree on the Stone Slab and Vessels of the Bronze Age", *Archeoastronomy and Ancient Technologies*, 2016, 4(1), p150-168. https://aaatec.org/art/a_v110

Of the Torres Strait and Australian Indigenous peoples there are oral histories of particular horizon and landmark solar alignments in locations such as Mua in the Western Torres Strait that informed 'seasonal change and food economies', and in Gumbayngirr country (mid north NSW coast) to inform ceremony times. Then there is the Wurdi Youang an arrangement of stones by Wadawurrung peoples (also known as the Rothwell Archaeological site), Victoria, Australia (c.25000 BC to about 1835 AD), which is highly likely to be markers of the solstices however the specific purpose is still unknown. Duane W Hamacher et al, "Solstice and Solar Position Observations in Australian Aboriginal and Torres Strait Islander Traditions", *Journal of Astronomical History and Heritage*, 23(1), 89-99, 2020

⁴ Overview, Planetary Collective, 19mins, vimeo, Published 6 Dec 2012, viewed 24/09/19, <https://vimeo.com/55073825>

⁵ White, Frank. *The Overview Effect: Space Exploration and Human Evolution*, Boston, Houghton Mifflin, 1987

⁶ Evans, C, 'Q & A with Frank White', Science Blogs™, published 13 September 2011, viewed 30/10/2019, <https://scienceblogs.com/universe/2011/09/13/universe-qa-frank-white>

rather than a blue one, greatly increases the awareness that we live in relation to a burning star.⁷ The *overview effect* highlights the inter-relationship between sensing the locus of self in near space and time and grasping a notion of self in vast space and time.

My work has always had an interest in what the analemma reveals. Issues regarding the points of view, the frames of reference from which these are made, and our location in space at both a local and universal level. How our planet fits into the cosmic order and how we fit into our world. What is knowable and how it is knowable. This project represents ongoing research into fields associated with all of these things but recognizes the impossibility of considering them all or arriving at any definitive answers. Instead, it focuses on what has become one of the primary modes by which we in the industrialized world orientate, interact and represent the space we inhabit - photography. It also considers the limitations of this mode of apprehension and understanding, attempting to expand its logic to encompass some of those conditions that lie outside its boundaries.

The Photographic Frame-of-Reference

Photography provides a specific way of apprehending space both in its creation and consumption. Of particular personal interest is how photography has affected the experience of space even in the absence of lens or print. The spatial drawing and painting practice that I have developed since 2016 is directly related to and informed by my photography practice. After almost thirty years of working consistently in this medium, my mind and eye have become attuned to seeing the world through the various compressions and distortions of the optical prosthetic lens, even when the lens is absent. Thus, when I look out into the world, my mind and eye frame space alternating between different focal lengths. For example, sometimes I might see the world at a 120mm focal distance, or maybe it is a 24mm wide view. This mind / lens morphing, or transference between lens space and real space, is not unusual amongst experienced photographers.⁸ Over the years I have observed that many photographers have a heightened proprioceptive awareness of the body in space due to the internalisation of these

⁷ Frank White as quoted in 'The Overview Effect Will Save Earth One Rich Space Tourist at a Time' by Ben Guarino, website *Inverse*. 18 December 2015, viewed 30/10/19, <https://www.inverse.com/article/6301-overview-effect-space-tourism-environmentalism-spacex-richard-garriot>

⁸ Adaptability of the eye and the mind to the lens is also described by Maurice Merleau-Ponty through a series of experiments made by Stratton where a subject is made to wear glasses that correct the inversion of the retinal image, which at first make the world appear to be upside down. On the second day the subjects' vision begins to adapt and the world starts to appear the right way up, but instead they have the sensation that their body is upside down. Several different experiments are explained, including the effect the lens has on the placing or referencing of sound. Merleau-Ponty, Maurice, "Part II: the World as Perceived, 2: Space", *Phenomenology of Perception*, trans. Colin Smith, Routledge Classics, London & NY, published in Taylor & Francis e-library, 2005, p.286

magnified (telephoto, close-up) and expanded (wide angled) views.⁹ However, in the last decade or more, with the ubiquity of the personal camera phone, it has become increasingly common for people to relate their lived experience of the world and space to how they would potentially picture or photograph it.¹⁰ We not only see the world through a lens, but also through the flatness of a small digital screen.

In 2016 I began to paint distinct lines and shapes on two-dimensional wall space and specifically across corners. Many of the works included a fixed viewpoint that revealed the appearance of a symmetrical, two-dimensional, picture-plane image floating in space. As the viewer moved into the space, and into the work, this image was ruptured and revealed the anamorphic distortions as abstract lines and shapes. The works were scaled and situated in a way that engaged the viewer's peripheral field of vision, requiring them to shift between soft and sharp focus. When we experience peripheral vision, we tend to find an overall softening of focus, and we can allow ourselves to be more wholly consumed by the space. In a way our eyes are not 'pointing at' something, but rather they are sort of 'embracing' the space.

These works highlighted the perspectival limits of human vision, and the mono-perspective of photography by superimposing the photographic mechanical eye into and onto real-time space and vision of the human eye. The works thus presented a mechanised, camera-based, perspectival vision, but realised in actual space, rather than on a single two-dimensional picture plane. This aligned, perspectival vision was only achieved from one fixed viewpoint which broke down whenever the viewer moved, revealing a more dynamic and abstract scene. Although sometimes read as an illusion, the works highlighted that the mechanical camera view produced an illusion and not a natural state of vision.

⁹ I have been teaching photography at tertiary level for seventeen years and have worked with hundreds of photographers. I have noted this heightened sensibility of spatial awareness particularly in those that photograph action or moving subject matter (sport, rock & roll, war, etc).

¹⁰ Sharp and J-phone established a stronghold in the camera phone market in Japan and Korea by 2005, prior to the Apple iPhone in 2007. Gye, L. "Picture This: The Impact of Mobile Camera Phones on Personal Photographic Practices." Continuum - Murdoch, then Mt Lawley, then Abingdon, 2007

Systems of Representing Space

Perspective as Symbolic Form

In his seminal 1924 text *Perspective as Symbolic Form*, Erwin Panofsky states that the evolution of pictorial perspective can be seen as a cultural, social and political metaphor for that particular era. Through a detailed historical examination of both experience and expression of space, Panofsky argued the perspectival expression of space becomes a metaphor or a 'symbolic form' - a worldview or *Weltanschauung*. He classified linear perspective as the beginning of the modern view of the world; a view that was 'rational and repeatable', an 'objectification of the subjective', and a mathematical monocular space that reduced psychophysiological space into a single "quantum continuum".¹¹ This modern world view also abstracted the experience of space denying the natural curvature of the eye by straightening lines and depicting infinity as a physically perceivable spatial entity rather than a concept. For Panofsky the expression of space and the application of perspective (or even the absence of it) is a symbolizing activity connected on a deep structural level with 'mental states' or 'experience'. He states, *'if perspective is not a factor of value, it is surely a factor of style'*.¹² Here 'value' refers to the 'artistic freedom' to choose perspective or not, and 'style' as the work's formal, material qualities.¹³ He goes on to say; *'it is essential to ask of these artistic periods and regions not only whether they have perspective, but also which perspective they have.'*¹⁴

*It is thus no accident if this perspectival view of space has already succeeded twice in the course of the evolution of art: the first time as a sign of an ending, when antique theocracy crumbled; the second time as the sign of the beginning, when modern 'anthropocracy' first reared itself.*¹⁵ Panofsky, 1927

The 'second time' that Panofsky is referring to, is the invention of photography. Photography effectively automated linear perspective. Its formal logic is based in a Cartesian conception of space and a mode of representation that echoes the pictorial space of linear perspective. In this way, the symbolic form of the current era might be thought of not just as linear perspective

¹¹ Panofsky, Erwin. *Perspective as Symbolic Form*, Zone Books, New York, 1991 (originally published as "Die Perspektive als 'symbolische Form,'" in *Vorträge der Bibliothek Warburg, 1924-1925* (Leipzig and Berlin, 1927) 258-330.), pg.65

¹² Panofsky, pg.41

¹³ Panofsky, pg.14, from introduction by Christopher S Wood

¹⁴ Panofsky, pg.41

¹⁵ Panofsky, pg.72

but photography itself. The psychosocial modern mind-set that Panofsky argues for, is thus extended and photography shares in determining the possibilities of seeing and understanding as argued above.

The Technical Image: Photography, Screen, & Optics

In *Towards a Philosophy of Photography*, Vilém Flusser's hypothesis that linear writing in the 16th Century and the invention of the 'technical image' (photograph) in the 19th Century effected significant cultural change and a 'crisis of history'. *'With writing, history in the narrow sense begins as a struggle against idolatry. With photography, 'post-history' begins as a struggle against textolatry.'*¹⁶ The photographic image could carry encoded information unlike any other form of image before it. His theory begins with the term 'apparatus' to define the post-industrial relationship between humans and their tools and machines, where 'programming' and 'controlling' becomes central to production, and the category of 'work' gets replaced with the category of 'information'. Rather than just forming the object, the apparatus *informs* it. The apparatus creates, processes, and stores symbols. For Flusser, the 'program' of the camera is a game where the photographer becomes attached to mining the possibilities of the camera 'program' and creating new information rather than the possibilities of knowing the world. He states that there is a merging of 'player' (the photographer), 'plaything' (the apparatus) and 'the game' (the 'program'). In this sense humans become functionaries of the apparatus and the program. Various programs are at work in any apparatus, and each program is informed by a metaprogram which becomes encoded in the image. For example, the photographic industry, the socio-economic systems of manufacture, or the idea of truth in photojournalism, and so on. There is no 'final' program. Flusser's 'crisis of history' occurs because:

Human beings cease to decode the images and instead project them, still encoded, into the world 'out there', which meanwhile itself becomes like an image – a context of scenes, of states of things. Vilém Flusser, 1983

An example of this is the phenomena of the 'selfie', a style of personal and public vernacular photography. The selfie not only perpetuates an awareness of self, located in space, declaiming 'I am here', it also allows one to see one's self sensing the world, and to tell other

¹⁶ Flusser, Vilém, *Towards a Philosophy of Photography*, London: Reaktion Books, 2006, Pg.18, first published in German, 1983

people, 'I have experienced this'. It affirms ones' presence and experience in space. In short, people can become more focused on photographing the experience rather than actually having the experience. Such experiences become compressed into a two-dimensional screen space, and the actual experience, both physical and emotional, is but a trace in the image. The idealized image of self, and the far-reaching effects that the personal camera phone, and mass distribution of the personal photographic image has had on a psychic and societal level, is still emerging and impossible to apprehend at this time.

In Flusser's theory, a photograph is not simply an image, it is an 'informed' object programmed and embedded with symbols and signs. The proliferation of the image in the digital era and mass personal creation and consumption of the photographic image means that our lived world, and our daily lives are inundated with the photographic image. With the personal camera phone, the photographic image is incessantly present in our physical space, our thinking, decision making, and emotional space, and shared with a far greater audience than ever before. Rather than merely living the experience, it is photographed and posted on social media, to say 'this happened here'. People construct a sense of themselves, an idealized life-view, through the image and their device. These are potent examples of Flusser's theory that humans become functionaries of the apparatus and the program. Few of us are immune to the effect of this, even if we refuse or restrict digital time. Like it or not, we are more shaped by photography's logic than we ever have been.

Architect Juhani Pallasmaa, sums up the effect of this screen era as essentially creating a loss of actual experience, a compression of time, a flattening of space, and a diminished sense of plasticity of the lived dimensional world.¹⁷ It is equally as important to question the effect of the lens not just on art, but how it has affected the vision and visibility of our lived experience of space. In recent decades, the mechanical eye is more frequently located at increasing distances from the body. The prosthetic eye is now also the extended eye, or even the detached eye – such as the drone, satellite, or endoscope. These other mechanical eyes, and the imagination of the maker, can now extend into much smaller and much larger spaces, opening our imagination to other possibilities and inventions. How these disembodied forms of image making will eventually affect the spatial awareness of the photographer or viewer, has not been fully realised.

¹⁷ Pallasmaa, Juhani. *The Eyes of the Skin: Architecture and the Senses*, John-Wiley & Sons Ltd, West Sussex, 2007, pg.21

Despite what might be considered an expansion of vision, is therefore, actually a reduction in the possible modes this vision might take, a reduction to camera based photography.

Embodied Perception

The Problem of Illusion: Actual and Apparent

Accepting that something is an illusion or is reality often assumes some form of general consensus, agreement, proof or evidence, be it scientific or otherwise. In quotidian events people generally do not need to labour over the question of actuality: both actual and apparent are available to us at the same time. For example, a plate which is round can be perceived to be elliptical when viewed at an angle. The point here is the 'knowing' that the object is actually round, otherwise we would accept the plate is actually in reality elliptical if we only ever saw it from that particular perspective. Given this, there are many things that we accept to be reality, which in fact, might just be an illusion, and vice versa. Our perception also becomes accustomed to repeated patterns that become 'knowns' or accepted values, which we build into our everyday activity – we respond to these 'knowns' even if the pattern changes. The moment of cognitive shift that provokes questioning about what is real or illusory is the slippage point between perception and knowing - where what is being perceived does not accord with what we know to be true. This cognitive shift discombobulates fluidity of movement, and 'thinking or questioning' then grounds us again in a specific notion of time and space. These dual properties of perception – actual and apparent - exist simultaneously and are both valid aspects of embodied cognition, experience and consciousness.

Both perspectival space and photography are learnt perceptions that have a reciprocal effect on the world. Just as it is hard to imagine why it took humans so long to create an image of observed perception, such as the elliptical plate. Perspectival space, prior to the Renaissance, preferred that images demonstrated an idealized perception – the round plate. Direct representation of space and imaging the world has taught us how to view it. Imaging, whether perspectival or abstract, teaches us about the world and also has a reciprocal effect; we project back into the world our experience of imaged space.

American light artist James Turrell states that few people are prepared to pay the admission to 'look into' a work rather than to just 'look at' it.¹⁸ By this he means a sort of mental and physical 'letting go' of conditioned and learnt perceptions thereby allowing the participant to open their sensory field and enter into the work and the experience of its appearance; it is a

¹⁸ Interview by Richard Andrews, *James Turrell: Four Light Installations*, Centre on Contemporary Art (COCA), Seattle, ed. Laura J Millin, The Real Comet Press, Seattle, 1982, p10

surrender not only of their body but their mind too. This notion of 'looking into' also connects with the willingness to experience illusion and suspend belief, and our desire or need to 'know' what is 'real'. Different works in this project set up different parameters in this regard. Turrell states '*we are part of creating that which we think we perceive*'.¹⁹ The experience of 'illusion' in our everyday physical world, and the role of picturing 'illusion' is part of this symbiotic relationship of 'actual' and 'apparent' perception, and how we sculpt or construct our understanding of reality.

Action: Movement, Energy, Vibration

Human perception involves a moving and reflexive relationship between the mind, body and environment where none are entirely distinct from each other but are in constant interconnected motion. Maurice Merleau-Ponty refers to this as the 'osmotic' relationship,²⁰ a term that in itself implies permeability, fluidity, interchangeability, energy and vibration. Perceptual systems, the environment, individual knowledge, and the idea of self are inextricably interconnected and constantly in motion. This 'enactive' approach of embodied perception has only recently, in the last few decades, become more accepted in the field of cognitive science, despite (most notably) Husserl's foundation of embodiment and phenomenology in the early twentieth century, Merleau-Ponty's expansion on this in the 1950's, and Evan Thompson, Francisco Varela and Eleanor Rosch's research into embodied cognition in the 1990's and, more recently, in the work of Alva Nöe. Nöe establishes that most phenomenological frameworks acknowledge that perception incorporates interaction of three key areas – knowledge, action, and perspective (or point of view). However, Nöe's 'enactive' approach is largely determined by physical movement and active inquiry.²¹ He states that experience is something that we enact. It doesn't happen in or to us, it is 'something we do, or make, or achieve'.²² Experience is situational, and we generally understand the human mind in relation to the body's action. Nothing is static, even on a microscopic biological level.

How all these considerations play out, and are relevant to other artists, will be considered in the following section before turning to the cumulative effect of all these aspects on my own work in the final section.

¹⁹ James Turrell, Interview with Charlie Rose (July 1 2013), uploaded by KunstSpektrum, Published on Jul 20, 2013, https://www.youtube.com/watch?v=_bvg6kaWleo

²⁰ Merleau-Ponty, Maurice. *Phenomenology of Perception*, Routledge, London, 2002

²¹ Nöe, Alva. *Action in Perception*, MIT Press, Cambridge, Massachusetts, London, 2004

²² Ibid. p215

Key Artists

Several artists outlined here have worked within these areas of embodied perception. Others too have played with the uncertainty between actual and apparent perception along with positing critiques or alternatives to pictorial space or Cartesian photographic space. All of these are key issues in my work and a consideration of other artist works follow throughout the remainder of the text.

Movement & Vibration: Bridget Riley & the Zero Movement

Whilst not overly interested in Op art, I do have a strong appreciation of Bridget Riley's work for her impeccable understanding of vibration, space and form, on a two-dimensional plane. Riley made a departure from the larger forms employed by the abstract geometric painters of the early 1960's, such as Robert Mangold and Ellsworth Kelly, or the California hard-edge painters such as John McLaughlin and Frederick Hammersley. By contrast Riley began reducing the size of her forms and increasing the number of them. She stands out amongst the Op artists, as more expressive, more dynamic, and more asymmetrical. Her detailed studies of the post-impressionist painting technique, specifically that of Georges Seurat, adds another layer of complexity to her skill, and an historical depth to her entire oeuvre.²³ Her works are not purely cognitive disturbance, or optical illusions but create an affecting visceral sensation of space across the terrain of a two-dimensional plane.

In an early work called *Tremor* (Fig 2) which Riley says was inspired by the leaves of a poplar tree 'quivering and trembling in the wind'²⁴, she discovered that only a small disturbance in the pattern was enough to create a significant sensation of movement and vibration. The pattern in this work is created by a series of small equilateral black and white triangles in succession. Some of the triangles vary through either one concave or convex curved side, which creates a rippling effect through the work. At a distance it reveals the appearance of larger triangles layered over each other, and a sensation of depth and form through tonal variation. On closer viewing, however, when the eyes are near enough to be immersed in a sea of triangles, the work reveals a different sensation of vibration and directional movement which is more rapid and darting. Even though the work is static, in the perception of the viewer it appears to have

²³ Serres, Karen & Wright, Barnaby, *Bridget Riley: Learning from Seurat*, Ridinghouse & The Courtauld Gallery, UK, 2015

²⁴ Cork, Richard, 'Bridget Riley: I keep trying to push age away', in *Financial Times*, 9 Nov, 2018, <https://www.ft.com/content/aac6af02-deb4-11e8-b173-ebef6ab1374a>

dynamic movement. An aspect of this work exists purely in the perception of the viewer, which essentially becomes an integrated aspect of the work.

Between 2012-15, after years of working in colour, Riley returned to this achromatic palette, to create a series of large-scale wall paintings, as well as other smaller works, inspired by the *Tremor* painting. In the wall work variations, *Quiver 1, 2, & 3*, Riley used the gallery wall as a frame, to float an enlarged section of the *Tremor* pattern within it - like a microscopic enlargement of the original work. The work is now read more directly in relation to the scale of the body, and the entire room. A similar scale relationship has occurred in my own works.

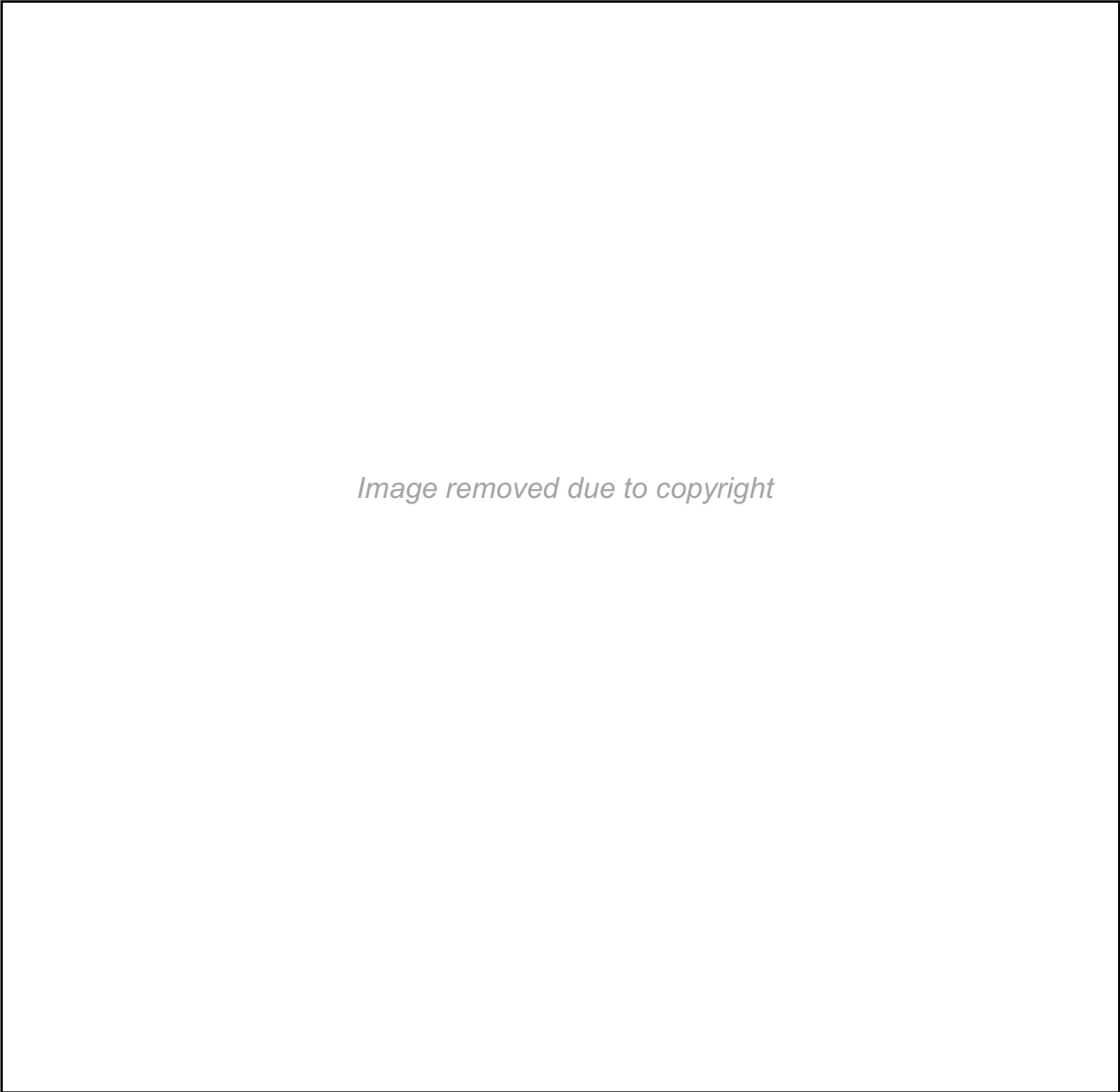


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*Fig 2: Bridget Riley, Tremor, 1962, emulsion on board, 122 x 122cm, Museum fur Gegenwartskunst Siegen.
The Lambrecht-Schadeberg Collection*

Riley incorporated the white negative space of the wall, both inside, and around the work. In *Quiver 3* (Fig 3) she removed sections of the pattern, which created the appearance of inverted white triangles, of different proportions, layered across the work. These negative spaces conveyed an impression of solids advancing and receding. Again, she achieved an impression of depth and space, this time more through scale variation, rather than through tone. To describe her own work, Riley uses language that is also visceral and spatial. She talks about the 'firmness and softness of space', and that she is constantly 'organising sensation across the canvas', or that in order to create a pulse, she uses 'black for rhythm', and 'white to ventilate'.²⁵

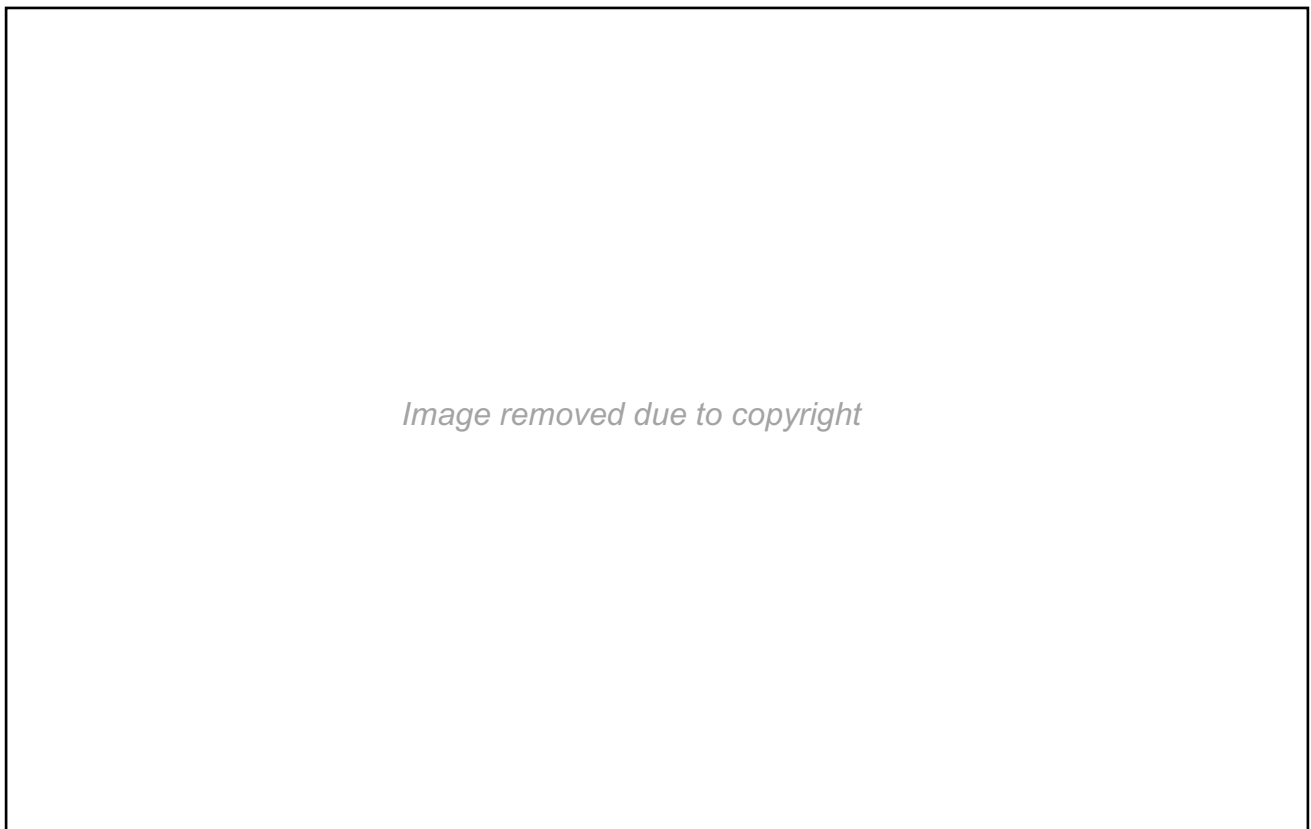


Fig 3: Bridget Riley, Quiver 3, 2014, graphite and acrylic paint on plaster wall, 380 x 880cm

Space, physical sensation, light, vision perception, energy, motion, and vibration were also key themes of the Zero movement which began in Dusseldorf in 1957 as a rebellion against abstract expressionism. Founding members Heinz Mack, Otto Piene, and Günther Uecker wanted 'a neutral art, stripped of mystique and subjectivity, related to natural elements and

²⁵ Bridget Riley talks at Tate Britain, published by TATE, 17 Sept 2003, viewed 28/09/19, <https://www.tate.org.uk/context-comment/video/bridget-riley>

close to its audience.²⁶ Heinz Mack spoke about how motion and energy is created when line, surface and space merge. In a dialectic sense, they 'cancel out' one another, creating vibration, where 'our eyes meet with resting restlessness':

*The restlessness of a line: it wants to be a plane. The restlessness of a plane: it wants to be a space.*²⁷ Heinz Mack, 1958

Like Riley, Mack observed that the momentum of energy is different for large forms, which led him to explore 'a profusion of little forms'²⁸, to ensure that he could maintain a sense of

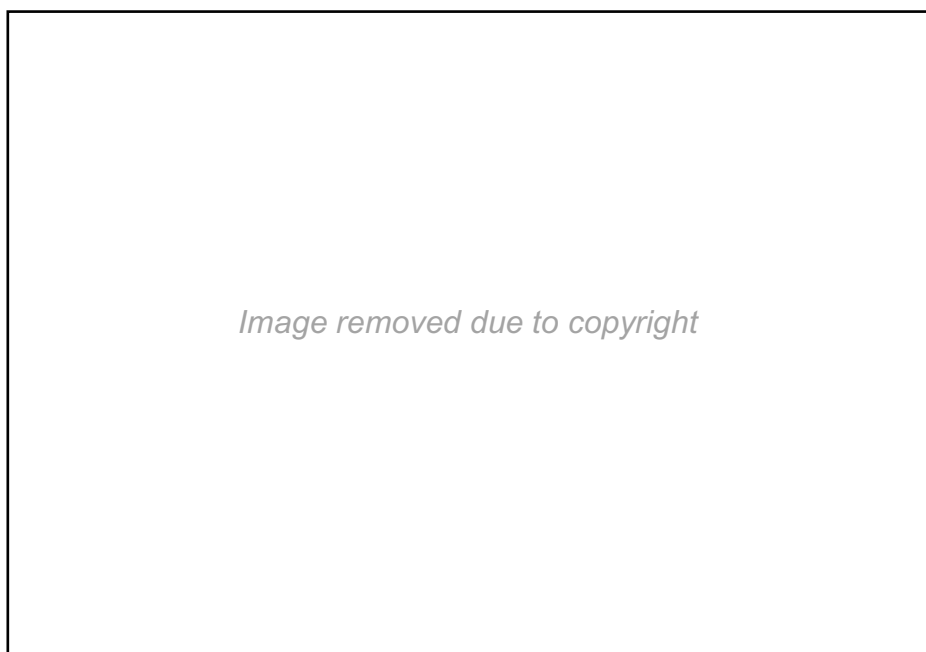


Fig 4: Heinz Mack, *Untitled*, 1969, Indian ink, handmade paper, 76 x 112cm
(Plutschow Gallery, Zurich. <https://www.artsy.net/artwork/heinz-mack-untitled-127>)

continuous energy and vibration (Fig 4). He noted in his own work, that the large monumental forms could appear across a number of smaller forms.²⁹ He explored this principle across many early two-dimensional works using a variety of media, and later in larger three-dimensional works. We can also see this in Riley's *Tremor* with the larger triangular forms appearing across the work. This 'resting restlessness' of line, plane and space, and numerous small forms that

²⁶ Lemoine, Serge, 'Vibrato', exhibition catalogue, *Zero*, MONA, Hobart, 2019

²⁷ Mack, Heinz, 'Resting Restlessness' (1958), exhibition catalogue, *Zero*, MONA, Hobart, 2019

²⁸ Ibid

²⁹ Gestalt theory also highlights the mind's ability to simplify complex information by organising visual content into a unified whole.

reveal larger forms, as well as the notion of vibration in small forms and momentum in large forms, are some of the formal qualities evident in my own work.

Being Inside Cartesian Space: Gianni Colombo

Zero artist Gianni Colombo, played with the 'conditions of space' and a desire to 'disturb the perceptive passivity of places'.³⁰ Although he has also created many intriguing two-dimensional works that challenge the idea of space with line, geometry and in some cases moveable components, his best-known works are his immersive programmed, kinetic works called 'elastic spaces' which began in 1967 (Fig 5) and have since undergone multiple variants.³¹ I recently experienced an edition of *Spazio Elastico* (1967-2019) at MONA (Tasmania) as part of the exhibition *Zero*. The work is a blacked-out 4 x 4 x 4 meter cube room, with a succession of UV illuminated vertical and horizontal elastic lines running from floor to ceiling and wall to wall, creating a three-dimensional grid pattern throughout the space. The lines are attached at their intersecting axis points. At timed intervals, external motors very slowly pull and stretch various lines around the space, and as one line gently moves, it slowly drags the other intersecting lines with it, creating the sensation of a warped grid and a space that is at once mapped and sectioned, but also shifting and moving. Where there was the appearance of evenly proportioned and aligned cubes and a grid, angles and triangles start to slowly appear creating a sense of depth as well as a feeling of piercing the space. The eye

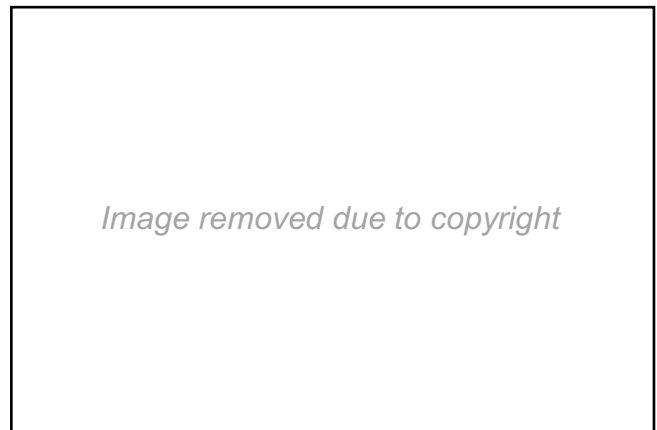
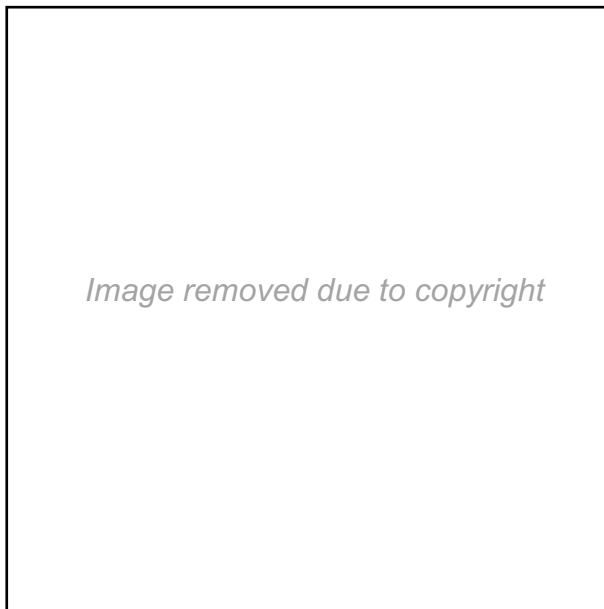


Fig 5: Gianni Colombo, *Spazio Elastico*, Fluorescent elastic cords, electrical motors, Wood's lamp, 400 x 400 x 400cm (left) 1967, Neue Galerie am Landesmuseum Joanneum, Graz, (Archivio Gianni Colombo, Milan) (right) 2019, MONA, Tasmania, (Image: <https://monad.ch>)

³⁰ Gianni Colombo, *Robilant + Voena*, gallery website, viewed 29/09/19 <https://www.robilantvoena.com/artists/149-gianni-colombo/works/1137/>

³¹ *Archivio Gianni Colombo*, Milano <http://www.archiviogiannicolombo.org/en/portfolio/spazio-elastico-2/>

and the mind shift between the perception of two and three dimensions, and between line and form.

The experience of this work conveys a sensation of physically being inside a Cartesian three-dimensional gridded space. The horizontal lines that make up the grid are placed above head height, and the vertical lines of the grid are anchored to the floor, hence the viewer can move around them and through the space. The tension of the kinetic movements that occur in the space above head-height, are also echoed in the viewers' body as they strain to look up into the space. This contrasts to my own room installations where the kinetic aspect resides not in the movement of the works themselves but in the movement of the viewer as they move into the work and the room. This sensation of motion is produced physiologically and psychologically by the viewer's curiosity as they actively move through the space, creating an immersive experience and a disturbance in 'the passivity of place'.

Although all artworks involve perception, some artworks above others engage more intense sensations of the viewer, and bring perception, into the conceptual framework.

Presence & Absence of Plane & Surface: Fred Sandback

Since the mid 1960's Fred Sandback used thin elastic, then later acrylic thread, to make straight lines in space. These works, which he referred to as sculptures, could range from a

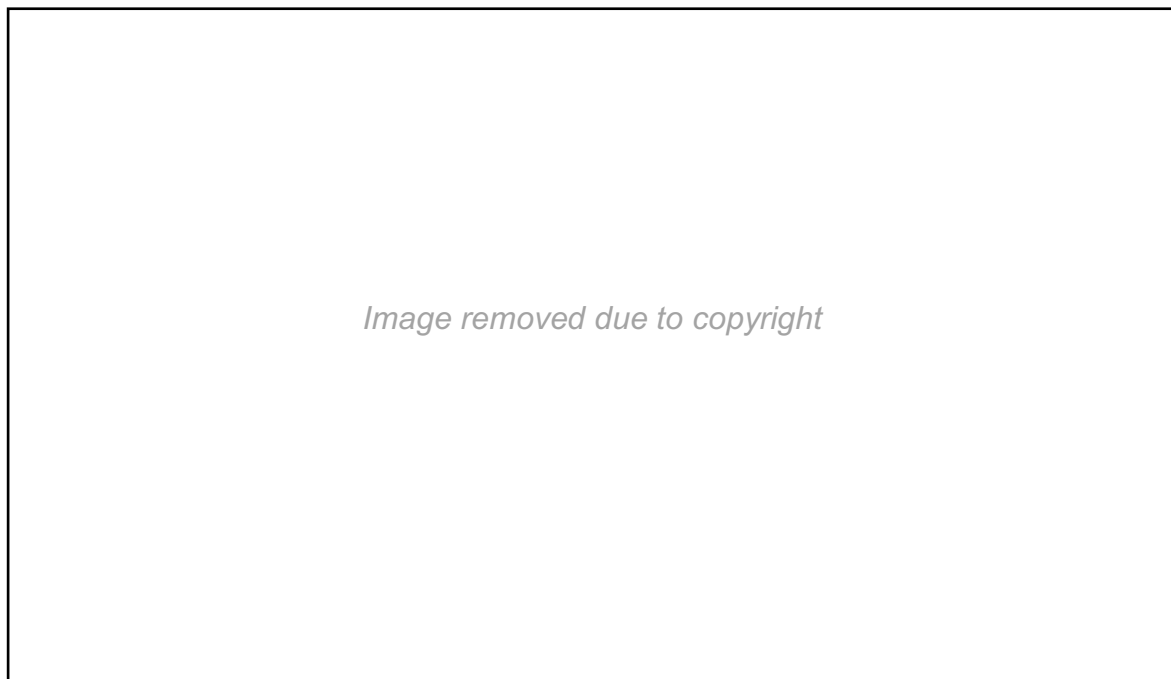


*Fig 6: Fred Sandback,Untitled (Sculptural Study, Six-part Construction), 1980/2019, Acrylic yarn, variable dimensions, Durch Mauern Gehen, Gropius Bau, Berlin
©2019 Fred Sandback Archive, Photo: Mathias Völzke, Courtesy: David Zwirner*

single line spanning diagonally across a room, to a group of several different coloured lines from floor to ceiling, or the outline of a closed shape such as a triangle, trapezoid, or rectangle (Fig 6). Sometimes the lines were separate (which he called 'open' works), and other times they met to create a corner or an angle. Although the works evoked a perspectival drawing, they were not intended to be the outline of solid forms or to refer to an object. Neither were they intending to draw illusionistic perspectival space, nor to frame space. Instead they delineated and made present the existing volume and depth within the space. In some ways they made the actual air present. To describe his own work, Sandback used terms such as 'a diffuse interface', 'ambivalence between interior and exterior, and 'a drawing that is habitable'.³² What is also significant about Sandback's work, is that he created the impression of a virtual plane in three-dimensional real space, and most significantly, that he created the notion of a plane without surface. It is worth noting that Sandback's expression of space – particularly the complexity of both physical and virtual surface and planes, during this particular time, also corresponded with the burgeoning digital era - the information age - and a growing awareness of virtual space.

*Well, is this a Platonic line that has no dimension? Not at all, it's a sculptural line that has a diminished but very fuzzy—admittedly kind of painterly—but definitely three-dimensional existence.*³³ Fred Sandback, 2001

³² 'Fred Sandback Archive', website, 'Artist's Texts', this text was written in November 1998 and first published in *Here and Now: Fred Sandback*, Leeds: Henry Moore Institute, 1999, viewed 12 Nov 2019, <https://www.fredsandbackarchive.org/texts-1999-statement>

³³ 'Fred Sandback Archive', website, 'Artist's Texts', this conversation took place on October 6, 2001, at the Chinati Foundation, Marfa, Texas, on the occasion of the opening of 'Fred Sandback: Sculpture'. It was first published in English and Spanish in Chinati Foundation Newsletter (Marfa, Texas) 7 (October 2002), pp. 26–32. viewed 12 Nov 2019. <https://www.fredsandbackarchive.org/texts-2002-conversation>,

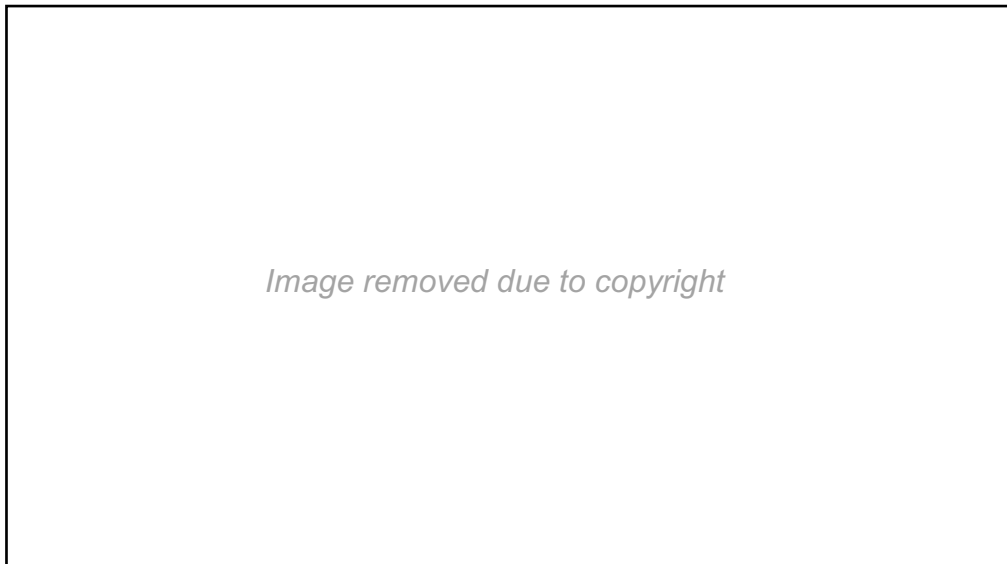


Fig 7: Rosalind Krauss, Logical Expansion Map, "Sculpture in the Expanded Field," *October* 8 (Spring 1979), pp. 31-34; diagram on p. 38. © The MIT Press.

Sandback's work was amongst the avant garde of the 1960's and 70's conceptual and minimal works that challenged ideas of perception, space, art, medium, and material. In her renowned essay, *Sculpture in the Expanded Field*, Rosalind Krauss creates a schema diagram (Fig 7) of her theory of how sculpture was no longer the modernist object, and that it was now malleable to space. Here she makes distinctions between sculpture, architecture and landscape, based on contradiction - it either is, or it is 'not' – it is either complex or neuter.³⁴ However, the 'complex' axis allows a sculpture to be both architecture and landscape. A similar sort of schema could be applied to Sandback's works in relation to the absence or presence of perspective, and the expression of both two and three-dimensional planes, in that it sits in the 'complex axis' of 'both / and'.

*Space is a necessary representation, a priori, that is the ground of all outer intuitions. One can never represent that there is no space, though one can very well think that there are no objects to be encountered in it. It is therefore to be regarded as the condition of the possibility of appearances, not as a determination dependent on them, and is an a priori representation that necessarily grounds outer experiences.*³⁵ Immanuel Kant, 1781

³⁴ Krauss, Rosalind. 'Sculpture in the Expanded Field', *October*, Vol. 8. (Spring, 1979), p.38.

³⁵ Immanuel Kant, *Critique of Pure Reason*, trans. Paul Guyer and Allen W. Wood (Cambridge, UK: Cambridge university Press, 1998) read in Vazquez, Edward A. 2012. "Fred Sandback's Perspectives." *Art Journal* 71 (3), p.108.

Internal & External Perspective: James Turrell

Western perspectival representation assists to make the world comprehensible to its viewers. It attempts to organise space. American light artist James Turrell challenges this notion through contrasting both the absence and presence of spatial perspective in various ways. Some works use forced perspective of near and far, such as his *Skyspace* series which use colour to alter the perception of the sky, while others use long corridors and runways that create convergence of line, or reflections and alignments, such as his naked eye observatory,

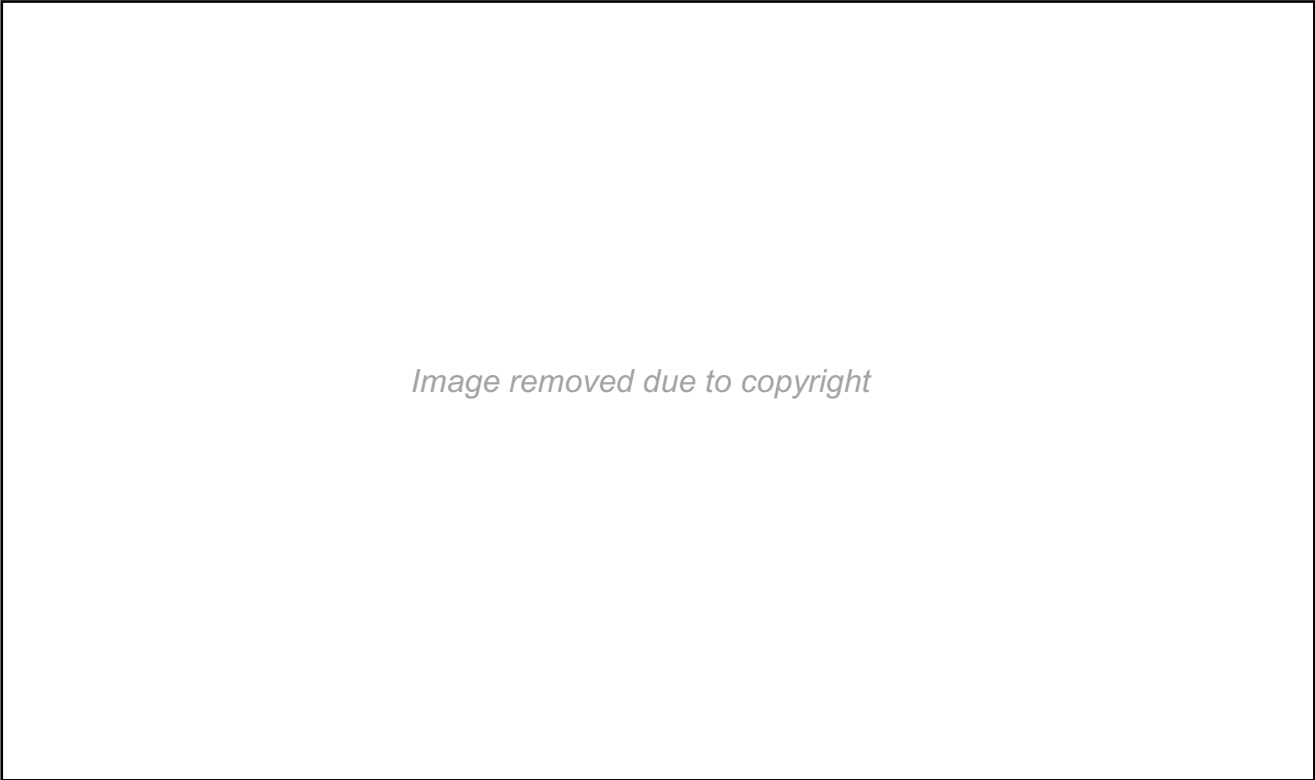


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Fig 8: James Turrell, Into the Light, 2017, Massachusetts Museum of Contemporary Art

Roden Crater, in Arizona. However, it is Turrell's formless and horizonless *Ganzfeld* works (Fig 8) that totally reject perspectival space. Instead they provoke a total loss of depth perception, a feeling of 'nothingness', which evokes and heightens an internal awareness of sensing oneself sensing.³⁶ By denying perspective of the external space he shifted the perspective to the inner experience, or the inner space.³⁷ In a way it is almost the opposite of the Renaissance vanishing point where the locus is that of the Self, not a distant unknowable

³⁶ "James Turrell official website", Introduction, accessed Oct 2019, <http://jamesturrell.com/about/introduction/>

³⁷ In my experience of Turrell's *Ganzfeld* work titled *Event Horizon* (2017) at MONA (Tasmania), I found a heightened experience of internal sensation and the notion of 'no space' if I could isolate my vision away from other spectators. Hence for some of my own room scaled installations, I also restrict numbers of viewers at any one time.

point on the horizon. Turrell often speaks of transcendental or spiritual qualities in relation to his work, and how he wishes to evoke feelings of a deep theta state, or the experience of a vision that is 'behind the eyes seeing'.³⁸ In some ways, the *Ganzfeld* works and the notion of 'sensing oneself sensing' has parallels with the overview effect experienced by the astronauts; it is a heightened awareness of your own existence, in your body, in space. This larger overview, and Turrell's internal 'view', is not just vision sensing. It is an embodied emotional state of connectedness to space as well as the biological functions that keep us alive. Turrell's works exemplify an era where the experiential engagement of the viewer activates the work, and where the subjective sensory perception is as much a part of the work as any form, line, surface, structure or image. Turrell defines his work as 'the medium of perception' with 'light as the material'. He goes on to state, '*I am interested in the sense of presence of space; that is space where you feel a presence, almost an entity – that physical feeling and power that space can give.*'³⁹ We can see in the works of Fred Sandback and James Turrell, the

awareness of perspective – in both its presence and absence – as a powerful tool in the expression of space. If these works are to be read as symbolic form, then they are more about an internal space, a more subjective experience rather than a rational objectified external space.

Pattern & Time-frame: Charles Ross & Cameron Robbins

Returning to the cosmic frame-of-reference, the works of Cameron Robbins and Charles Ross make visible an aspect of the hidden or intangible forces of natural phenomena. These two artists also provide reference for methods of my own drawing practice that has involved the use of a

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Fig 9: Charles Ross, Solar Burn machine, 1971

³⁸ "Guggenheim Conversations with Contemporary Artists; James Turrell with Michael Govan", Elaine Turner Cooper Education Fund, 21 June 2013, posted by Guggenheim Museum, posted 12 July 2013, viewed Oct 2019

³⁹ "James Turrell official website", Introduction, accessed Oct 2019, <http://jamesturrell.com/about/introduction/>

drawing apparatus. By contrast, their drawing apparatus makes marks independently of the human hand.

Since the mid 1960's Charles Ross has worked extensively with the cycles, patterns, and energy of the sun, stars and planets. For the *Solar Burns* series, Ross created a simple device, consisting of a wooden board, and a Fresnel lens, that focuses a beam of sunlight, which burns a mark into the surface of wood (Fig 10). Over decades, he has produced many variations using this method, from singular one day burns (Fig 10) to large grid works that mark time over weeks, months or a year, and more recently the *HSSB (Human Sized Solar Burns)*.

His very first *Year of Solar Burns* was a leap year, in 1971-72, which was shown in its entirety, in one room, including the overcast days which were empty panels (Fig 11). Ross noticed that over the 366 days, the burn curved one way in the summer, and the other way in the winter, with autumn and spring being more vertical. Using photographic reproductions of the individual works, Ross discovered that if he laid the burns in sequence end to end, that they made an

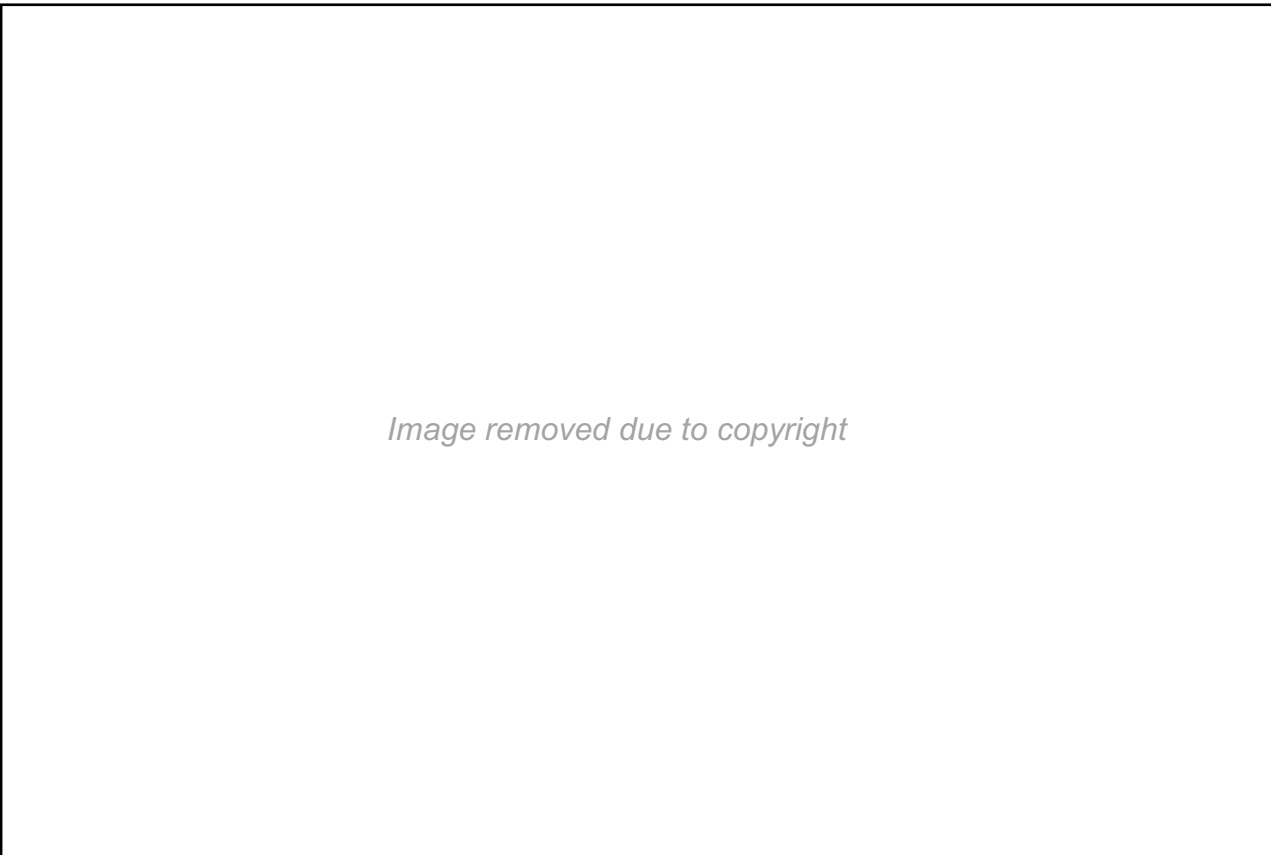


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Fig 10: Charles Ross, Solar Burn 5/10/70, Solar burn and pencil on wallboard

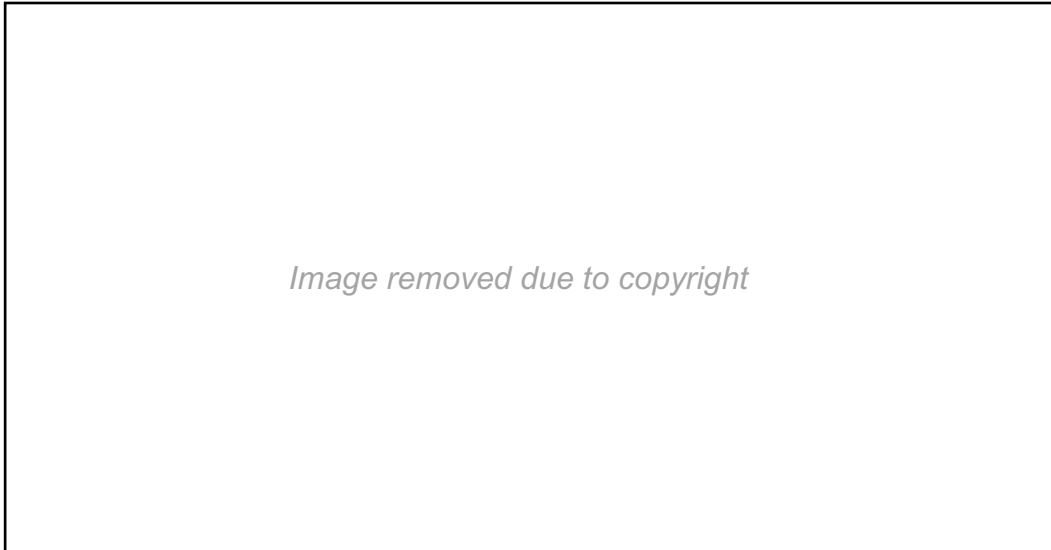


Fig 11: Charles Ross, 'Year of Solar Burn', John Weber Gallery, New York: 1972

unexpected double reversed spiral shape (Fig 12). He shared this discovery with The United States Naval Observatory, and although eventually they found mathematical equations that showed this spiralling had been previously detected in relation to the calibration of sundials, they had not seen it imaged in this way before. Despite this, there is still some question as to how this pattern seems to flip, or reverse, at the equator. When asked in a recent interview to what extent does he, as the author, direct the result of the sun burns, he responded that it is actually still unknown at this point, however what is known, is that:

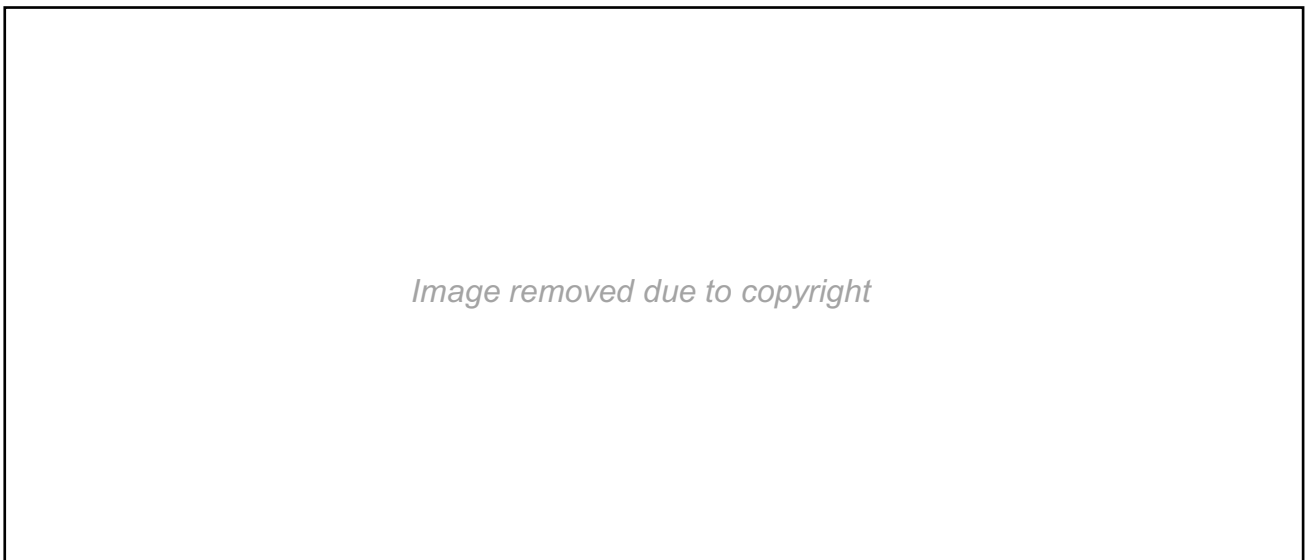


Fig 12: Charles Ross, The Year Shape, 1976

"The Year Shape. Reversing its spiral from winter (left) to summer (right) and straightening around the beginning of spring. The difference in curvature of the two spirals is drawn by the apparent seasonal drift of the sun, and the change of speed of the earth in its orbit." (The Substance of Light: Sunlight Dispersion, The Solar Burns, Point Source / Star Space, Selected work of Charles Ross, exhibition catalogue, La Jolla Museum of Contemporary Art, Feb 6-Mar 14, 1976)

*... the change in the spiral, was the lens picking up the day to day change of the speed of the earth in its orbit, which is microscopic...
....everyone was stunned, that this primitive system, which is just a simple lens held over a board, would pick up something (so) fine.* ⁴⁰

This simplicity of Charles Ross' device and process, with its profoundly meaningful and magical outcome, is highly admirable. The charcoal and burn marks make our distant and burning star immediate and tangible. The curves and spiral forms create an abstract pattern of our earth's tilting and rotating movement through space. They materialise and visualise the intensity of the sun along with its cyclical rhythms. No two burns will ever be the same. Although it has minimal interference from the hand in actually applying the line, the parameters, structure, scale, and 'exposure' time are all controlled. These works too, have strong parallels with photography through lens, light and exposure duration.

Australian artist Cameron Robbins uses elemental forces to power the instruments of his practice - rotating wind turbines on tripods, giant solar or water powered drums, and networks of inter-connected wire. Robbins exposes the inner workings of his kinetic machines and devices as an integral material and conceptual property of his work. His mechanical systems are often complex, with multiple components, and have an overall feel of industrial design and scientific experiment. His interests include dynamical systems⁴¹ and 'how patterns move through a particular location'.⁴² Robbins is also a clarinettist and improvisational musician, which is a significant reference in the work. In some works, Robbins sets separate motion capacity for both the mark-making device, such as the pencil, as well as movement in the actual drawing surface, such as the paper. In his permanent drawing installation, *Wind Section Instrumental* (Fig 13) at MONA in Tasmania, Robbins fixes an ink pen to a long, spindly piece of steel wire, which is attached to a series of different cogs, which in turn are connected to an external tower, that supports a variety of different wind mechanisms driving the motion of the drawing device. The movement of the pen is determined by the wind speed, and the swivelling motion of the drawing board is determined by the wind direction. In addition, the paper also scrolls around the drawing board electronically, at a rate of five-meters over a thirteen-day

⁴⁰ *The Art of Light: A Conversation with Charles Ross and James Meyer*, National Gallery of Art Washington DC, 24 Feb 2019, Published 28 March 2019, at 37:40mins, viewed 22/09/19

⁴¹ He references the Poincaré map as one of his early inspirations (Cameron Robbins, Artist talk, Justin Art House Museum, Melbourne, 16/04/2019)

⁴² 'Cameron Robbins: Field Lines', MONA website, viewed 20/04/2019, <https://mona.net.au/museum/exhibitions/past-exhibitions/cameron-robbins-field-lines>

period. As long as there is wind, the pen thrashes around, and the machine spins and clacks continuously. On days with no wind, gaps appear in the drawing. A range of different results occur depending if there is a gust or a breeze, and how quickly or slowly it changes direction (Fig 14). *The Wind Section Instrumental* installation is proposed to extend over a fifty-year period, as a way of tracking events in a changing climate. It is expected it will result in over twelve hundred, individual five-meter drawing scrolls.

Robbins drawings' make visual the elemental energy of the wind, sun, and weather patterns. He also makes them spatial, through his creation of machinery and instruments, and the spectacle of kinetic performance by the machine, which also creates an aural space. Robbins states that his machines sidestep 'self-consciousness in art making'.⁴³ On face value, this

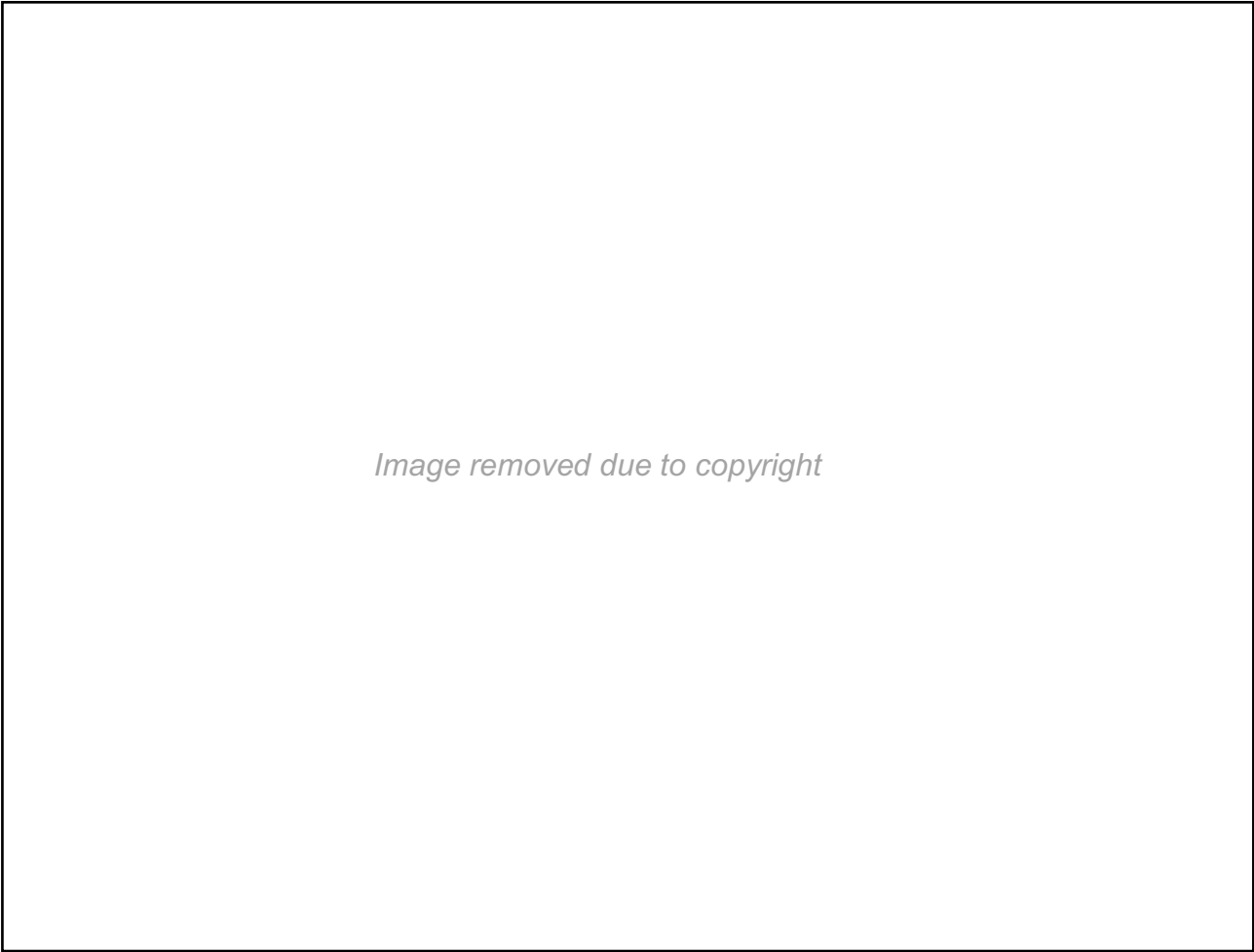


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Fig 13: Cameron Robbins, 'Wind Section Instrumental', 2016, permanent drawing installation, MONA

⁴³ Wilson, Kent. 'Cameron Robbins', Artist Profile, viewed 20/04/2019, Quarterly online journal, Ed. Kon Gouriotis, <https://www.artistprofile.com.au/cameronrobbins/>

statement is clear enough: that the artists' hand and mind are one step removed from directly applying intent in the line. However, the artist is entirely present and self-conscious in the making of the machinery, and the drawing can never be entirely disconnected from its machine. What the artist can't control is the elemental force - the kinetic energy that makes the mark, is not human. In this sense the drawings powerfully convey the force, randomness and chaos of nature.

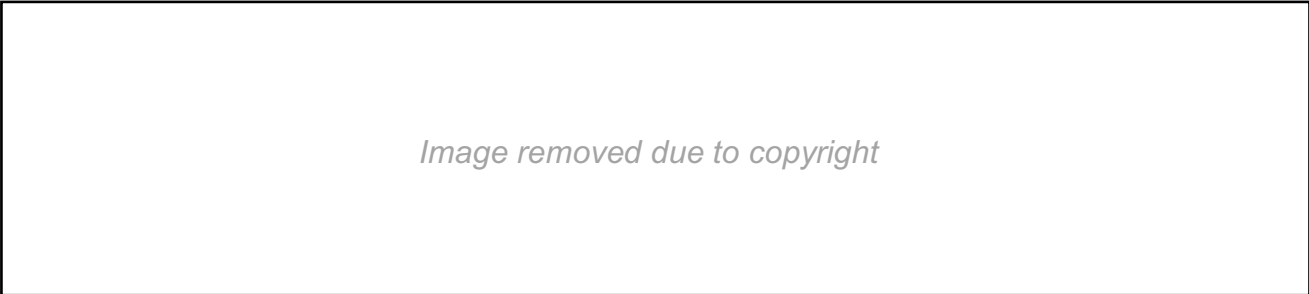


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Fig 14: Cameron Robbins, 'Wind Section Instrumental Drawing', 2016, ink pen on watercolour paper, 100 x 500cm, MONA

The Gnomon Experiments

The previous discussions introduced key aspects that have informed this particular project. Along the way there has been a great deal of experimentation and play. Some of these investigations are presented here in support of the final work which is discussed in the section titled *Gnomon Triangle Room*.

All of the works from the last two years, whether developmental or resolved works, I have titled the *Gnomon Experiments*. The term 'gnomon' derives from Greek and Latin and means 'to know'⁴⁴. It has a variety of different uses specifically in astronomy, geometry, and mathematics. In general, all of its purposes have something to do with alignment, orienting or locating, and marking or indicating. The main definitions of *gnomon* that have significance in my research, either literally or abstractly are:

1. the shadow gauge on a sundial ⁴⁵
2. the pin-hole aperture in architectural structures that aligns celestial events with the interior space ⁴⁶
3. the remaining part of a parallelogram or triangle, when a similar shape has been removed from its corner ⁴⁷
4. the XYZ axis locator tool icon, used in 3D CAD software ⁴⁸

Gnomon Window Projections: Physicalizing Time, Light, & Motion

The gnomon experiments started with the tracing of sunlight projections from windows, into architectural spaces. These spatial time-lapse drawings physicalize time and light, and the earth's motion past the sun, into layers of geometric shapes (Fig 15, Fig 18). The resulting patterns traced across the walls and floor, were defined by the shape of the window frame of projection, the angle of the sun, and the angle of the capture surface that the projected light fell on. In later experiments I measured and reproduced the work at 1:1 scale in other spaces, removed from their site of origin and sometimes also altered the orientation of the drawings to the wall and floor (Fig 16, Fig 18).

⁴⁴ Online Etymology Dictionary, <https://www.etymonline.com/search?q=gnomon>

⁴⁵ Kittler, and Darula, "Analemma, the Ancient Sketch of Fictitious Sunpath Geometry," 141

⁴⁶ Ibid

⁴⁷ A. T. Olson, "The decomposition of polygons", *International Journal of Mathematical Education in Science and Technology*, Vol. 14, Issue 4, (1983): 453-455

⁴⁸ Software that uses the term gnomon for their XYZ locator tool include: *Mastercam* and *Houdini* (Side FX)



Fig 15: Lucia Rossi, Gnomon Window Projection #1, 2018, vinyl tape, H:65 x W:174 x D:164cm, (12/03/2018, 15:20-16:10hr (50mins), -37.824714, 144.968464)

Other experiments included various methods of photographic reproduction and print. A photographic image was made of the installed *Gnomon Window Trace* that accentuated depth perspective through point-of-view, converging lines, and lens distortion. From this photographic image, a vector line graphic of the work was extracted, and the background removed to reveal a geometric shape, devoid of any context (Fig 17, Fig 19). Further research included, painting each frame of the pattern individually onto glass microscope slides (Fig 20). Other experiments included three to five hour photographic stop-motion time-lapse sequences of the passage of sunlight through the space (Fig 21) which, when edited and sped up, resulted in short one to three minute animations. Although this research and these works have strength in their own right, the conditions of each particular space and the architecture, produced limitations. As a result, I built my own portable 'room' - *The Gnomon Drawing Machine*. This provided far more freedom to experiment with orientation, angles, and shape.

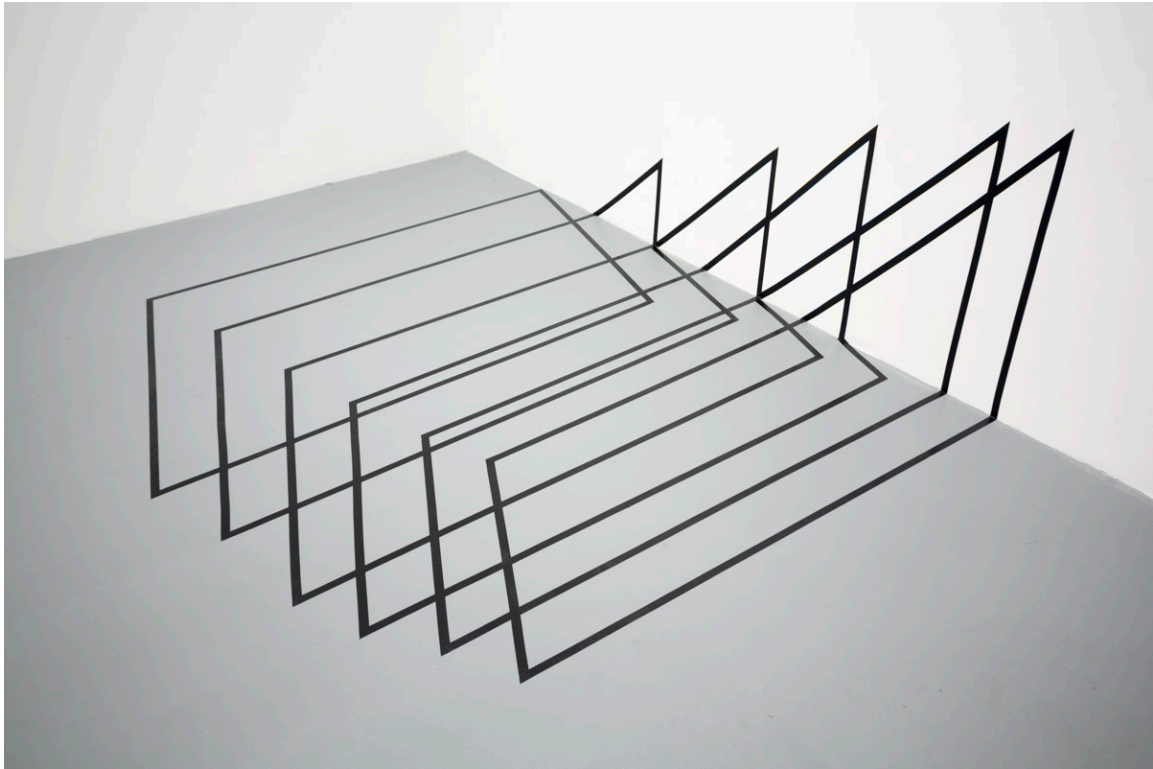


Fig 16: Lucia Rossi, Gnomon Window Projection #1 (reproduction #1), 2018, vinyl tape, H:65 x W:174 x D:164cm

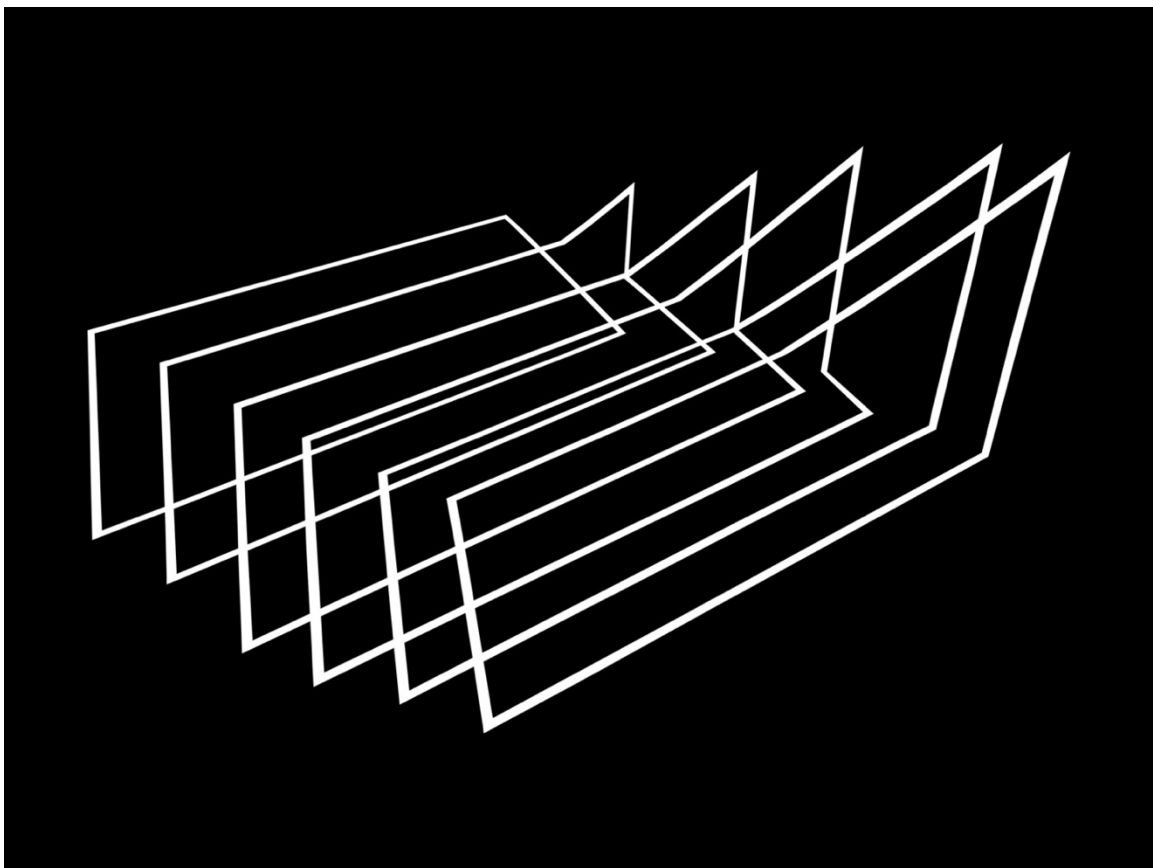


Fig 17: Lucia Rossi, Gnomon Window Projection #1, 2018, aluminium print, 30 x 20cm

Gnomon Window Projection #2, VCA & Tacit Studio, Melbourne, Aug-Sept 2018



*Fig 18: Lucia Rossi,
Gnomon Window Projection #2, 2018, vinyl tape
(31/08/2018. 09:45-10:35hr, -37.825625, 144.967236)
250 x 460 x 205cm*

*Top Left: original installation at VCA
Top Right: Tacit Studio, reproduction #1 vertical
Below: EB Meyer space, reproduction #2 horizontal*

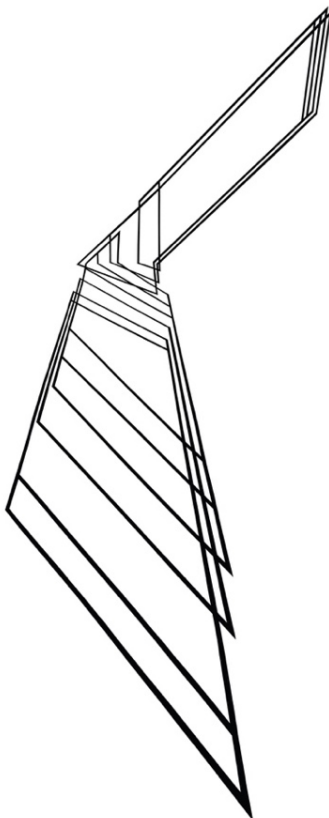
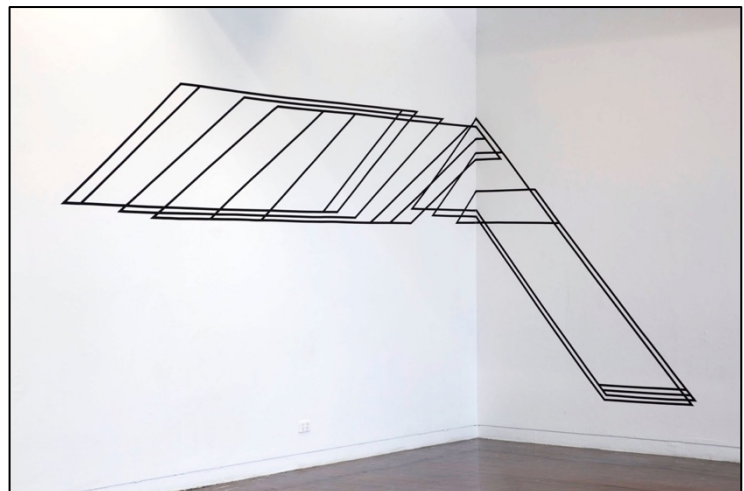


*Fig 19: Lucia Rossi, Gnomon Window Projection #2 Vector
Drawing, inkjet print, H:217 x W:90cm (cut-out)*



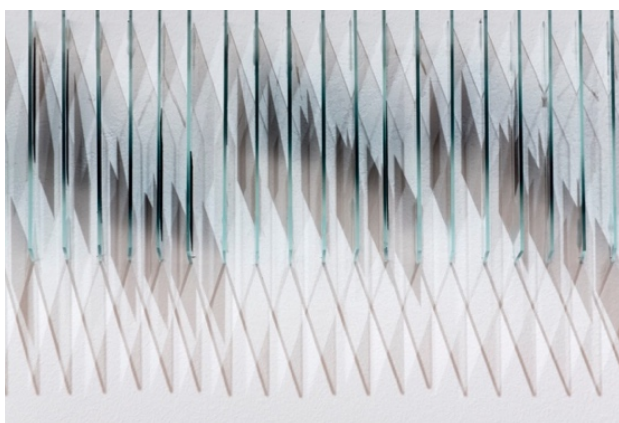
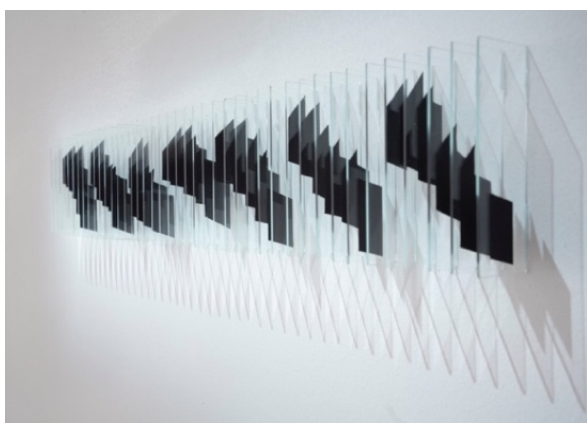


Fig 20: Lucia Rossi, Gnomon Window Projection #1, 2018, glass microscope slides & acrylic paint, H:7.5 x W:41 x D:2.5cm

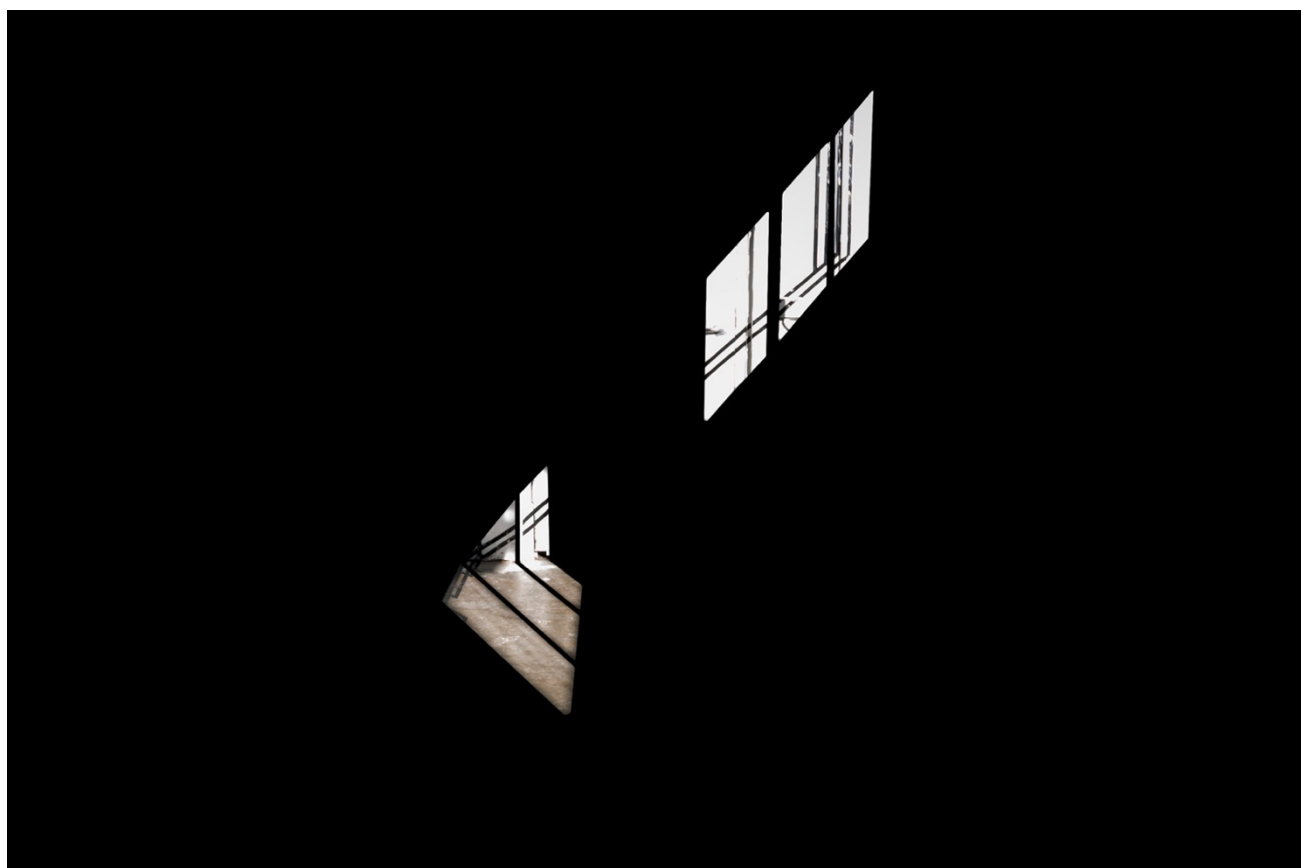


Fig 21: Lucia Rossi, Gnomon Window Projection #2, 2018, stop-motion animation (still), 3,200 frames / 30s

Gnomon Drawing Machine, 2018-19 – Field work, drawings, and data-collection

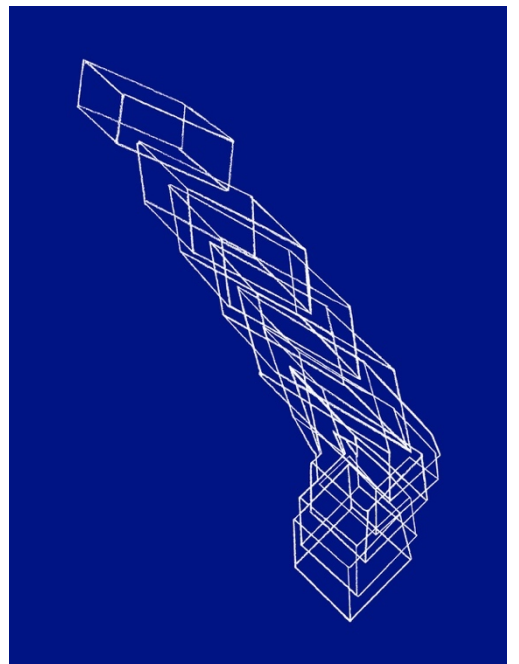
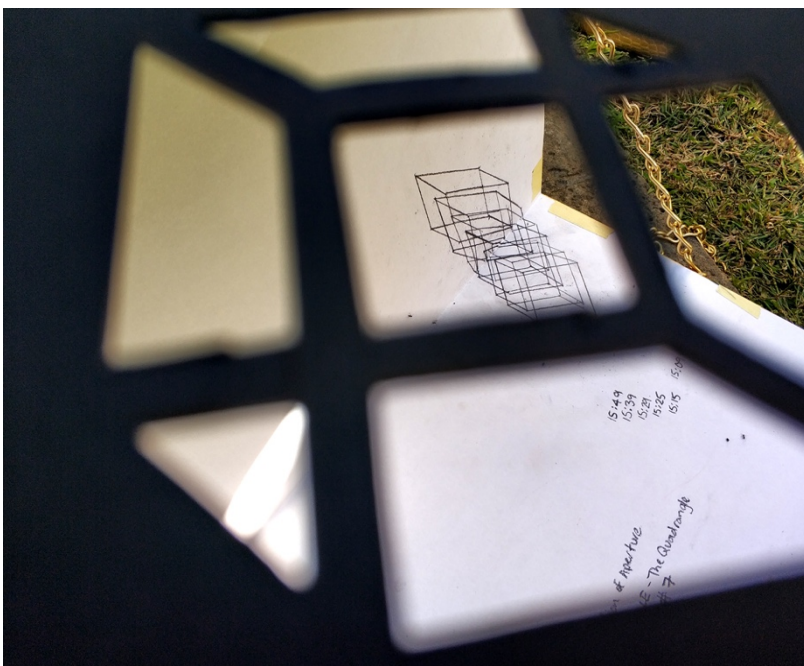
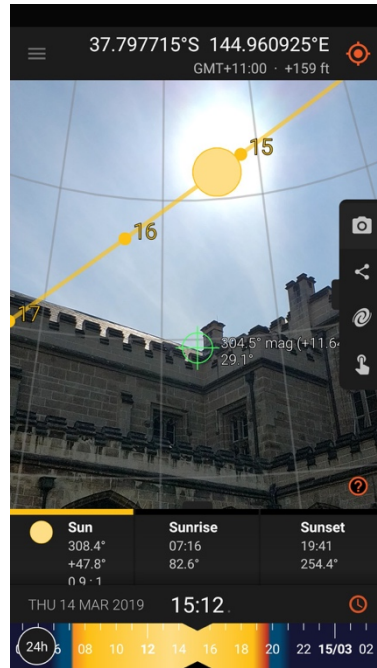


Fig 22: The Gnomon Drawing Machine, field-work, drawings, & data collection, since Nov 2018

Gnomon Drawing Machine: Ordering Chaos, Energy and Vibration

The *Gnomon Drawing Machine*, is a simple box like device, that holds an A2 piece of paper folded across an angled drawing surface (Fig 22).⁴⁹ A gnomon aperture shape is fixed to one of the window planes that is either parallel or angled to the paper plane. Similar to the window tracings, the projected gnomon shape was marked onto the paper, at different time intervals. This often involved working continuously and quickly for hours at a time, to register individual gnomon shapes as the earth moved. Sometimes, the gnomon shape could be marked out within seconds using a series of points, and other times, the line and shape was allowed to 'drag' and extend with the movement of the earth. The process revealed the earth's speed over a given distance and within a particular time-frame. The sun and the earth, (along with the *Gnomon Drawing Machine*), are a moving frame-of-reference each in relation to the other. The earth has two significant movement co-ordinates: it is spinning at 1,600km/h on its axis, as well as rotating around the sun at approximately 107,226 km/h.⁵⁰ The timing of the mark-making intervals was determined either visually, or by setting strict and regular timings. Other times, the drawing rhythm and duration was dictated by the clouds. With the *Gnomon Drawing Machine* I found that reducing the scale of these window traces, and as Riley states, creating small disturbances, produced greater energy and sensation in the patterns, in comparison to the larger window tracings. Very subtle changes in intervals or angles, created large effects. These small works have a sense of energy, directional movement and vibration. These drawings were then used as templates, transferred and enlarged into the gallery space as large-scale wall and floor installations.

Although the *Gnomon Drawing Machine* has no mechanical or automated processes, its name refers to it being an instrument or tool, with parts and functions, that assist a task. Each *Gnomon Drawing*, in itself, is a form of extrapolation and data collection of the earth's movement. I also collected other data for each drawing such as: place names, cardinal orientation, longitude and latitude, intervals and duration, declination of the sun, and also the aperture location in relation to the actual drawing. Although the structure defines its own set of parameters, it still requires human agency and the hand to make a mark. This requirement of human intervention, along with its portability, and reliance on the weather, greatly increases

⁴⁹ This *Gnomon Machine* is a prototype for future models that could vary in size and structure, or even exist as sculptural artworks in themselves.

⁵⁰ Howell, Elizabeth, *How Fast is Earth Moving*, www.space.com, 23 June 2018, viewed 25 April, 2019
https://www.space.com/33527-how-fast-is-earth-moving.html?jwsourc=fb&fbclid=IwAR3Qqn78O4ZU4HgY2OJe_R1td8-RyRDOvu_BFPHjoawzaiD-TwgOAILTLqY

the number of variables that can influence the outcomes. Although there is a considerable amount of method applied, and intent with choices such as timing and intervals, the orientation and angles of projection are not calculated mathematically, therefore, the overall outcomes are not predictable. In essence, there is a measure of randomness in what appears to be, order.

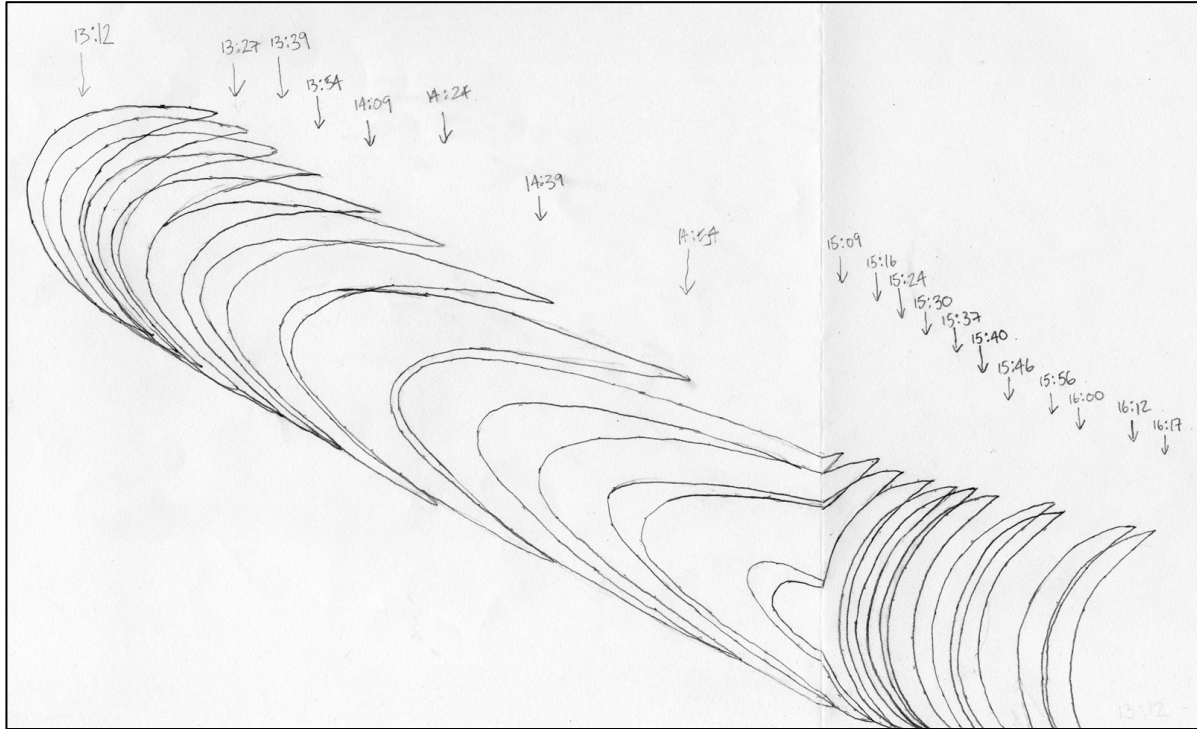
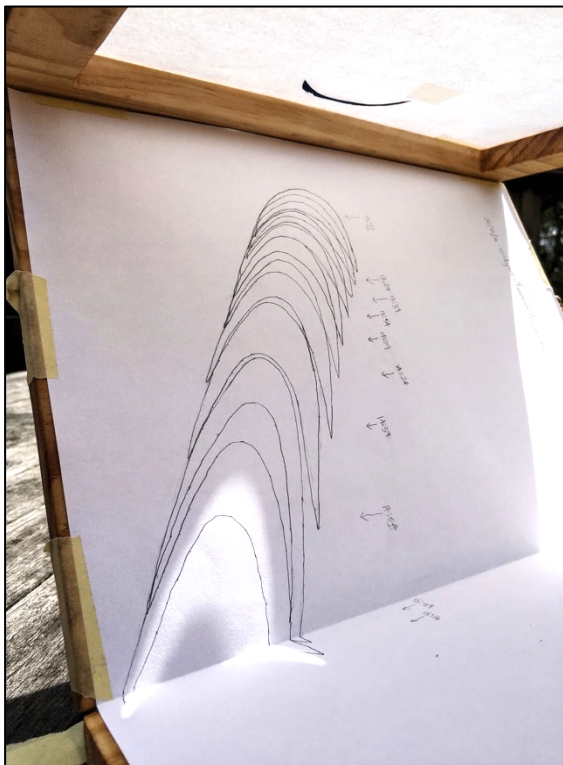


Fig 23: Lucia Rossi, Gnomon Drawing #3 (185mins), 2019



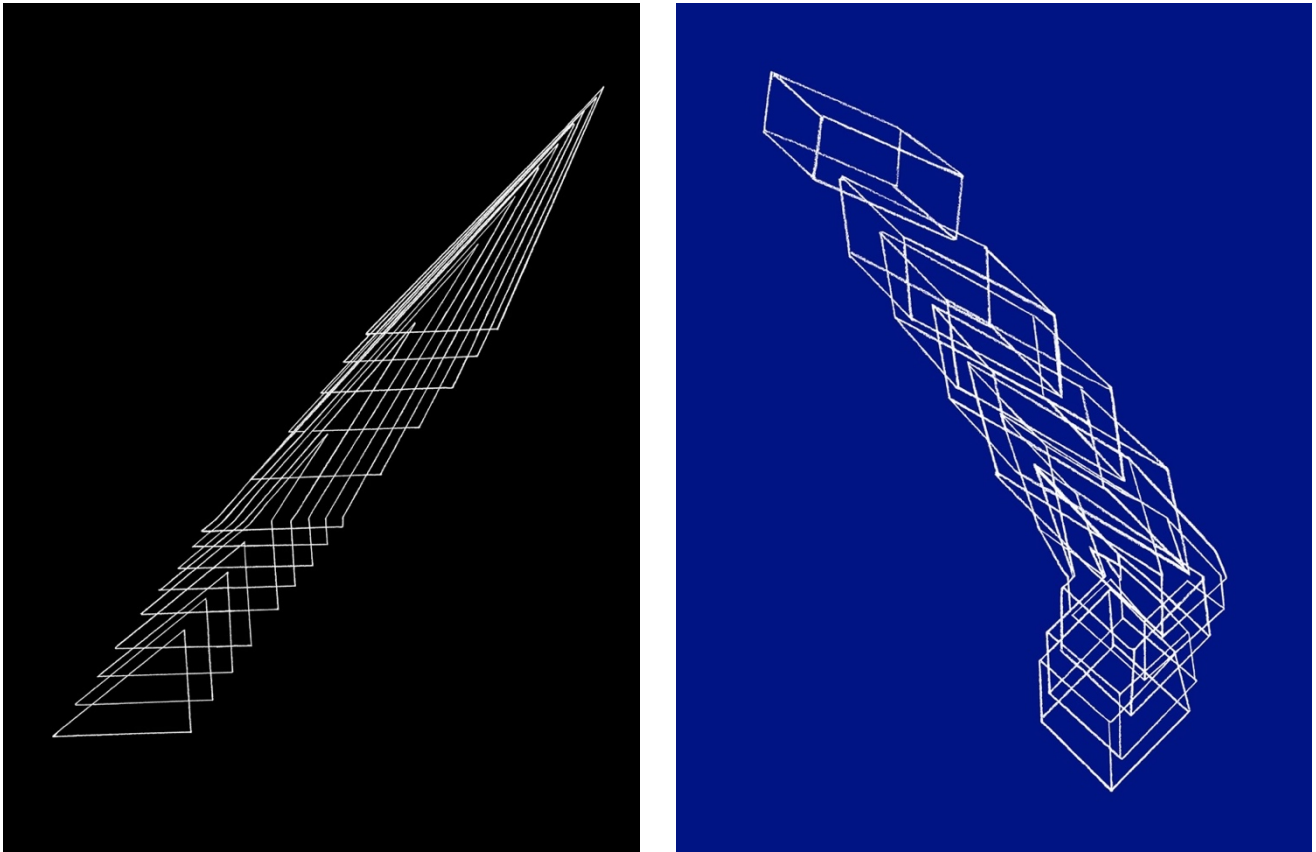


Fig 24: Lucia Rossi, Gnomon Drawing #4, 110mins (left) & Gnomon Drawing #7, 75mins (right), 2019, aluminium print, 40 x 30cm

Using Vilem Flusser's theory, I have constructed an 'apparatus', with its metaprograms referring to the camera obscura, and to other artists who have constructed tools to record the movement of natural phenomena.⁵¹ Although there is no lens, and no projection of a realistic image, it is embedded in the process of photography, sharing several of the medium's features. These include: loading the paper into the device, setting different apertures, varying durations and the resulting 'exposure'. The result is a template or 'negative' that is then reproduced and enlarged. In contrast to the *Gnomon Window Tracings*, instead of bearing reference to architecture, these drawings and the resulting installations, are wedded to the machine. Like using the camera, I 'mine' the possibilities of variables.

⁵¹ "If Cameron Robbins and Taree Mackenzie's artworks had a lovechild, it would look like Lucia Rossi's work." Dr. Stephen Haley, 16/04/2019

Gnomon Drawing Installation #1 (Gnomon Drawing #4), VCA Artspace, March 2019

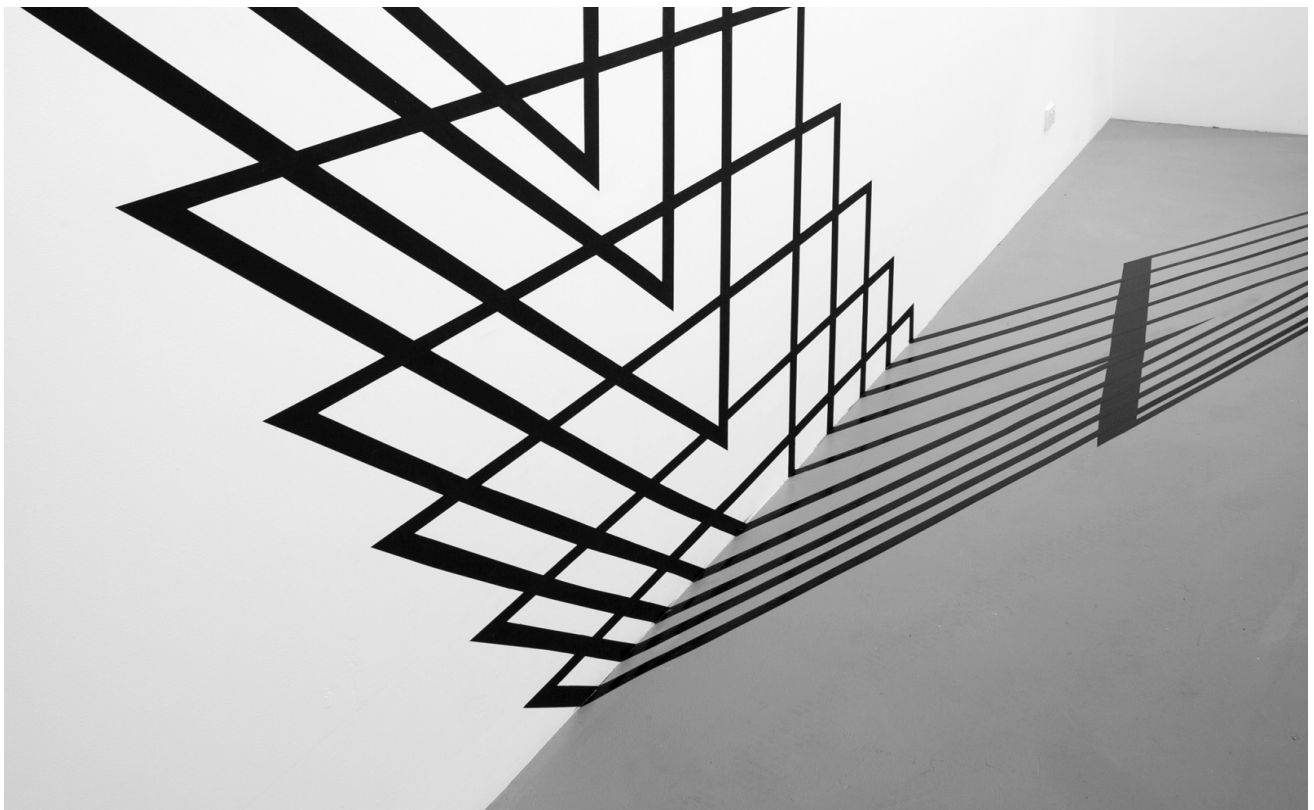
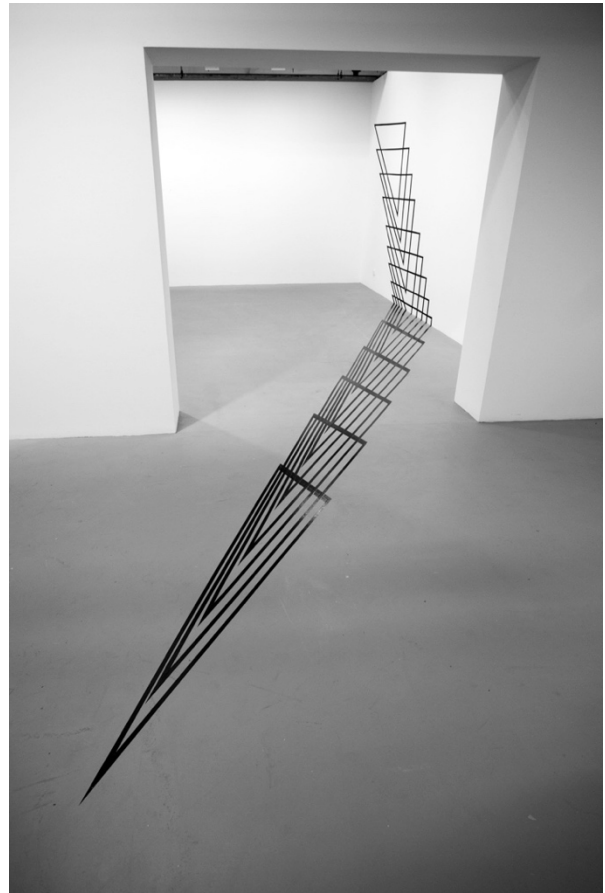


Fig 25: Lucia Rossi, Gnomon Drawing Installation GDM01/D04/WF1/110mins, 2019, acrylic paint & vinyl tape, H265 x W310 x D1010cm

Gnomon Drawing Installations: Trace & Index

The Gnomon Drawing Installations involved interpreting the small *Gnomon Drawings* as large wall and floor painting installations. As mentioned each of the drawings captured with the *Gnomon Drawing Machine* have been drawn over an angled fold in the sheet of paper (Fig 23). There are two key aspects of reproducing the *Gnomon Drawings* in three-dimensional space and at a larger scale. One is locating the 'paper fold' of the drawing into the space so that it is mapped onto a corner angle or at the juncture of a wall and floor. The second is locating the viewer in the approximate position of the original gnomon window in relation to the installation work. This allows the pattern of the drawing to appear as a series of equal shapes from the gnomon viewpoint, and then as the viewer walks into the space a series of elongated and distorted shapes unfolds (Fig 25). Although I use the *Gnomon Drawing* as a template, there is still a need to interpret and 'bend' the drawing into the particular site. No form of CAD or measurement projections are employed. The enlargement is done by eye, using string and tape to map the initial proportions in relation to the scale of the human body. Viewing distance, sightlines, the proportion and 'feel' of the overall space are all considered. Enlarging these small *Gnomon Drawing* templates into larger than human scale reproductions, is a very physical process. It brings to mind those famous words by photographer Ansel Adams, where he compares the negative to the composer's score, and the print (or reproduction) to the performance.⁵²

Similarly, Sol LeWitt's *Wall Drawing* 'instruction' works, start with only a list of instructions for their installation. Some of his instructions for these works might include phrases like 'vertical lines not straight and not touching', or 'lines straight, not straight, and broken'. They are precise but also open ended. For LeWitt the concept and the instructions themselves were the primary aspect of the work, and the installations were secondary. He used language to craft a theoretical and measured idea of space, which was then left open to the variables and conditions of each different space, and the people installing them. Similarly, the *Gnomon Drawing* template was adapted to the space, and also became personalised from the physical performance of installing it.

⁵² Adams, Ansel, *Conversations with Ansel Adams: oral history transcript / 1972-1975*, University of California, Berkeley, 1978, p45.

When speaking of painting on walls, as opposed to canvas LeWitt says; '*The wall is an entire entity (it) changes from content to context*' (Fig 26).⁵³ This is also true for the *Gnomon Drawing Installation*. The content of the original small two-dimensional *Gnomon Drawing* template and its embedded connection to the earth's movement, as well as its specific timeframe, was enlarged and contextualized into the gallery space. For example, the timeframe for *Gnomon Drawing #4 (110mins)* (Fig 24) is from 15:56hrs from the top of the drawing to 17:46hrs at the bottom of the drawing. In this particular drawing I did not mark the specific timeframe for each gnomon shape, whereas in other drawings they are noted (Fig 23). In this particular gallery installation, I also inverted the work, both horizontally and vertically. The timeframe then became relative to the inversion of the image, and the context of the space. Theoretically or

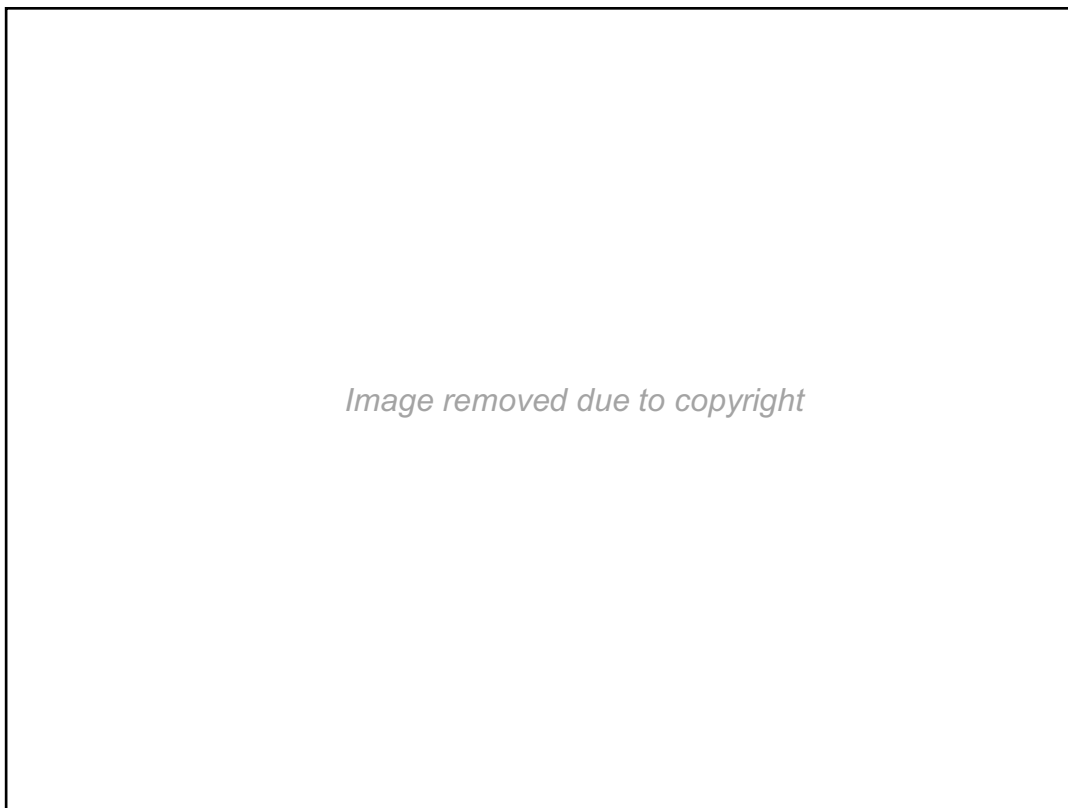


Fig 26: Sol LeWitt, Wall Drawing #346
7 geometric figures (including right triangle) drawn with India ink. Figures are filled in solid.

First realisation: Sol LeWitt, Guy Mazarguil, Laurent Mazarguil
First installation: Galerie Yvon Lambert, Paris, Feb 1981
Centre Pompidou, Musée national d'art moderne, Paris, Purchased in 1982
© Adagp, Paris 2012, © Centre Pompidou-Metz / Photos : Rémi Villaggi
<https://www.centrepompidou-metz.fr/en/sol-lewitt-wall-drawings-1968-2007>

⁵³ *Sol LeWitt: 4 Decades*. Directed by Michael Blackwood. Michael Blackwood Productions, 2005, at 23:60min. Accessed March 3, 2019. <https://unimelb.kanopy.com/video/sol-lewitt-4-decades>

conceptually, 110mins of the earth turning, now occupies the space of two rooms not an A2 piece of paper. More importantly, when viewed from the gnomon viewpoint – that is, when all of the triangular components are aligned and uniform in scale (Fig 25 top left) – it reveals the appearance of an image that has significant volume in space, and not just the surface or plane of the wall.

In *Notes on the Index*, Rosalind Krauss discusses the intermediality of photography and abstract installation works, through their shared relationship with reality and realism of ‘place’, and their shared reference to the ‘uncoded’ photographic index.⁵⁴ Here, Krauss is referring to Roland Barthes theory that photography delivers ‘a message without a code’, which she parallels with abstract installation as delivering an ‘indexical trace’. The *Gnomon Drawing Installation* is indexical as the connection with the earth’s rotation is not immediately evident in the work. It is hinted at in the title, but largely sits as an adjunct to the work. Both the *Gnomon Drawing Installation* and Sol LeWitt’s *Wall Drawings* share aspects such as reproducibility, adaptability to space, and the process of installation as an event in itself. The realism of ‘place’, that Krauss refers to, is how an abstract installation, when it inhabits actual concrete space - a building, a gallery, and so on - inherits its features, some of its context (or even ideologies), and some of its past. Krauss parallels this with the ‘temporal distance’ of the photographic message, and a ‘paradox of a presence seen as past’, she refers to Barthes idea of photographic space-time; the *here* and the *formerly*.

*Photography set up, in effect, not a perception of the ‘being-there’ of an object which all copies are able to provoke, but a perception of its ‘having-been-there’. It is a question therefore of a new space-time; spatial immediacy and temporal anteriority. Photography produces an illogical conjunction of the here and the formerly.*⁵⁵

For the *Gnomon Drawing Installation* this ‘temporal distance’ is twofold; it is not just a notation of distance traversed past the sun, or a simple time-frame captured from the past. It is a reproduction of a timeframe in the earth’s movement, represented in two-dimensional space, which is then reproduced in three-dimensional space. It is twofold representation because the image itself represents a timeframe in the past but is also reproduced and re-contextualised

⁵⁴ Krauss, Rosalind. *Notes on the Index: Seventies Art in America Part 2*, October, Vol. 4, Autumn 1977, MIT Press

⁵⁵ Barthes, Roland, “Rhetorique de l’image”, p47, as quoted in Krauss, Rosalind. *Notes on the Index: Seventies Art in America Part 2*, October, Vol. 4, Autumn 1977, MIT Press

in the present. This timeframe and movement occupy new space, a new context, a geometric form, an anamorphic distortion, an optical illusion, and a new embodied spatial experience.

Gnomon XYZ Locator: Pictogram of Space

The *Gnomon XYZ Locator* which started as a wall and floor drawing and then evolved as a three-dimensional sculptural work, is an interpretation of the co-ordinate system used in three-dimensional Euclidean space to locate a point in space. The first iteration of the work was a vinyl tape line drawing (Fig 27) that used the corner walls and floor space of the gallery as xyz directional planes, with an axonometric projection of lines extending into an imaginary space behind it. Thus, if the viewer stands in a centrally located viewpoint, at a given distance from the work, looking down into the centre, the resulting image is the illusion of space divided into four directions around a central axis, or a three-dimensional Cartesian co-ordinate system. The viewing point is fairly flexible within around fifty centimeters or so in any direction. From any other location or distance around the work, it appears as an abstract form, with constantly changing lines and shape.

The second iteration of this work was constructed at the same scale, in steel, as a three-dimensional sculptural work, with the same title (Fig 28). In July 2019, I was fortunate to be part of the *VCA Access, Praxis 5* exhibition and residency at the Sarang Building, Yogyakarta, and had the work constructed while there. Although I had originally imagined the piece to be shown in a clean gallery environment, with minimal conflicting background lines, it was instead shown outdoors on grass. Whilst not ideal for clean lines, it powerfully occupied the space. The birds-eye perspective provided by the balcony views, and the aerial space created by the internal courtyard, allowed the lines to take on architectural proportions. Although not quite as thin as a Fred Sandback acrylic thread, the work did convey a lightness of line in the space, especially at a distance. Like Sandback's work it brought presence to the air. The contrasts between this three-dimensional sculptural *Gnomon XYZ Locator* and the three-plane wall drawing are:

1. 360° movement around the work
2. transparency of the object
3. complex layering and merging of lines due to the transparency
4. casts a shadow if lit which adds to the complexity of lines

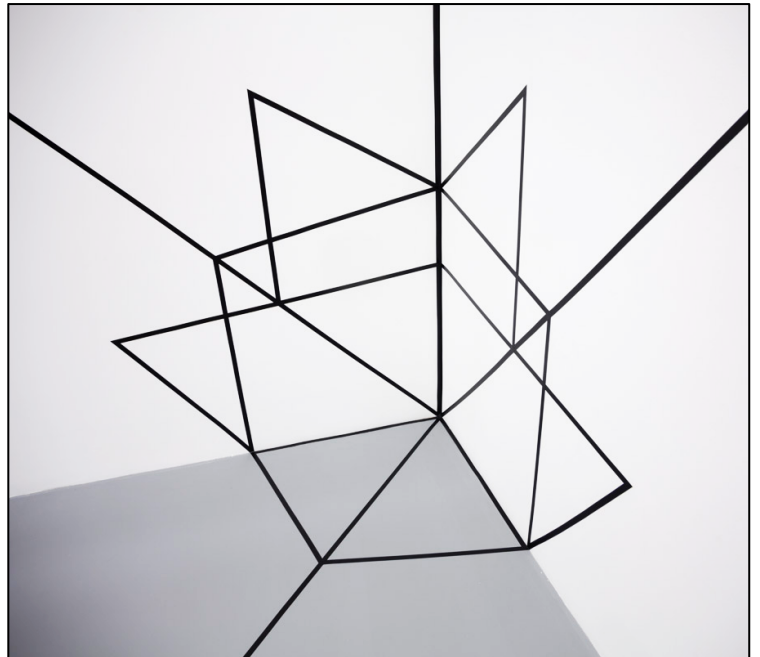
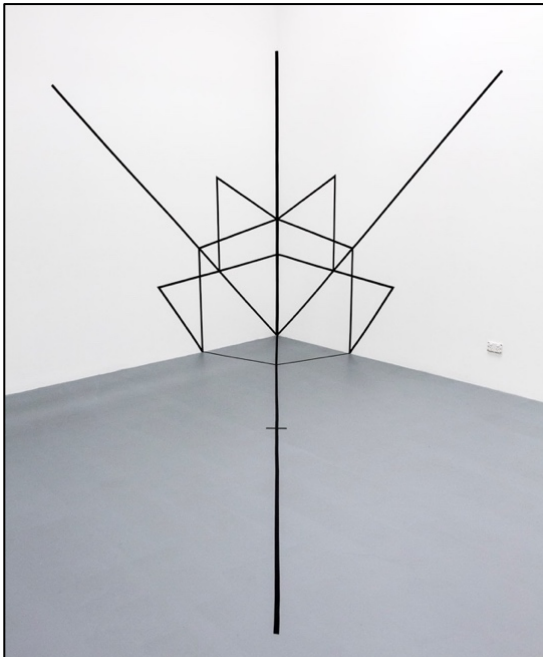
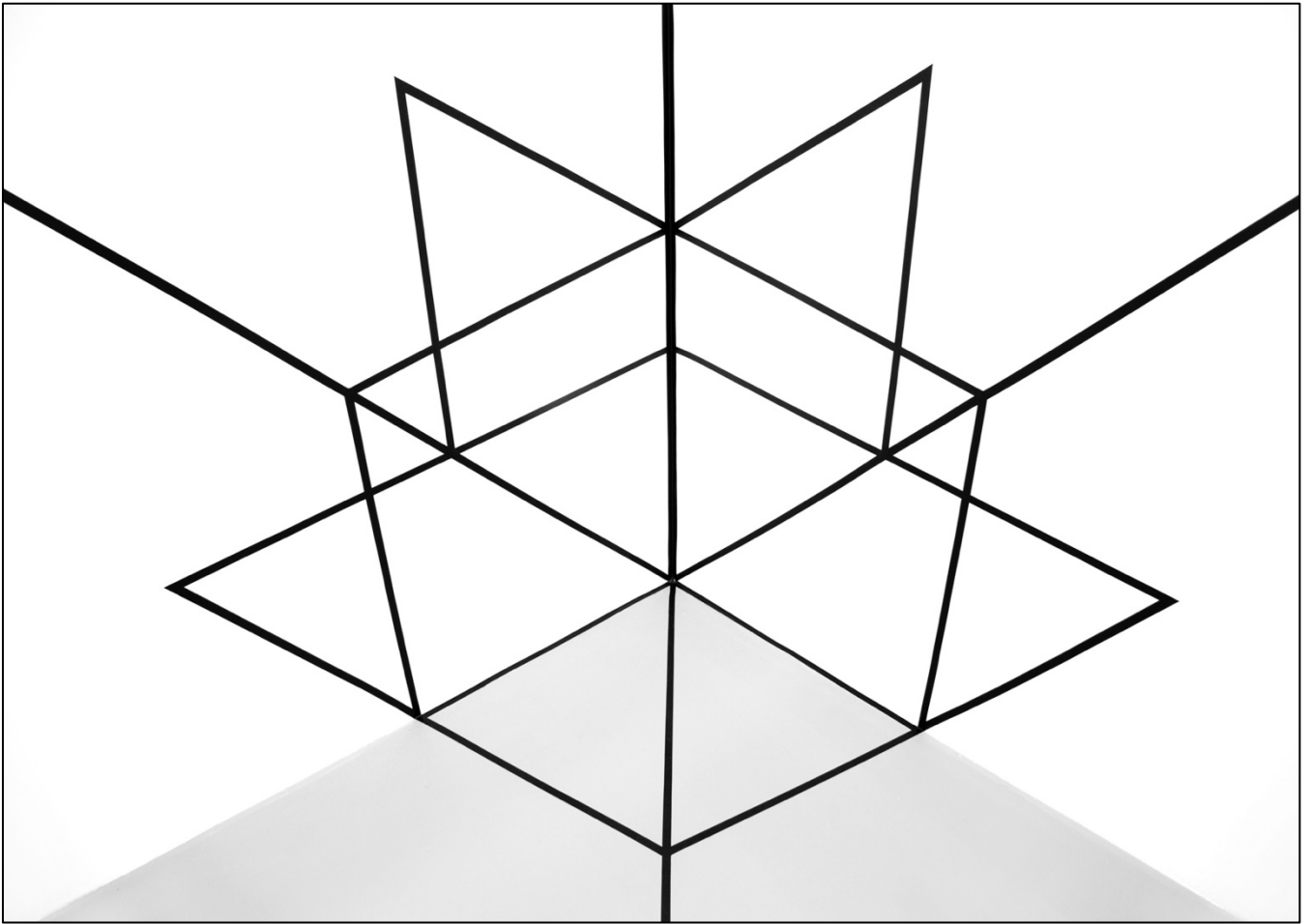


Fig 27: Lucia Rossi, Gnomon Locator XYZ (4 corners), 2018, vinyl tape, H:251 x W:228 x D:341cm



Fig 28: Lucia Rossi, Gnomon Locator XYZ, 2019, steel, H:251 x W:228 x D:341cm

This was a pivotal work in the research. This iconic pictogram of Cartesian three-dimensional space, points literally and directly to geometry and mathematical systems of understanding space. Like other works the 'image' was only apparent if you stood in a designated viewing location, otherwise the work appeared as a set of abstract lines. Particularly with the sculptural version, the extended lines gave the sensation of an almost impossible balance, reaching into the space at unexpected angles, depending on which angle it was viewed from. As you moved the lines constantly re-configured themselves in the space.

Gnomon Triangle Room: Solid & Void

Gnomon Triangle Room #1 at Rubicon ARI (Fig 29) was inspired by my physical experience of enlarging the first *Gnomon Drawing Installation* into the gallery space, during which I experienced very strong visceral sensations of being 'inside' the drawing. As I moved back and forwards between drawing the line and standing at the fixed view-point, my vision constantly moved in and out of scale, between wide and close-up view, and a sharp and soft focus, and it was here that the drawing informed me of a much more immersive experience – the 'looking into' rather than 'looking at'. Although I included a *Gnomon Drawing* reproduction and enlargement as part of the *Gnomon Triangle Room #1* at Rubicon ARI, it did not sit as a singular object. It was the first time where I started to realise the drawing not just as an object in space, or a timeframe representation, but as entire space, or the entire room. By painting the floor, the feeling of a 'ground' was diminished, instead the space became a much more unified whole. The solid painted form of the black triangle floating in space (left) was contrasted with the large black 'void' (right) that could be 'entered into'. The 'solidness' also contrasted with the vibrations of the hand drawn chalk outline of the *Gnomon Drawing Installation* pattern. When this was viewed from a fixed point at the entrance, the succession of smaller triangles created a strong sensation of vibration, tunnelling and drawing the viewer in, which resonated with the larger solid triangle. I also recorded a number of stop motion animation sequences from this work (Fig 30). It also became evident that the works emitted a much stronger sense of presence and energy when there is a degree of gestural quality, hand-drawn by eye, and painted rather than using vinyl cut-out or tape. The Rubicon ARI installation signalled a turning point.

Gnomon Triangle Room #2 (Fig 31) shifted all the indexical traces mentioned so far in the genealogy of the research, into a further abstraction. It became even more minimal, reduced to three forms that 'hold' the space and immersed the viewer in the work. Unlike a sculpture

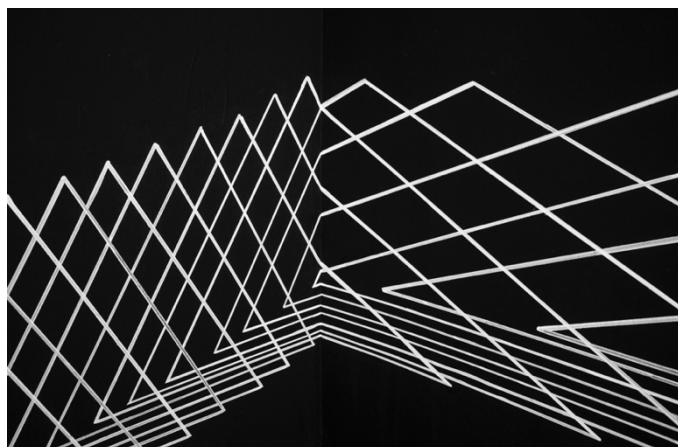
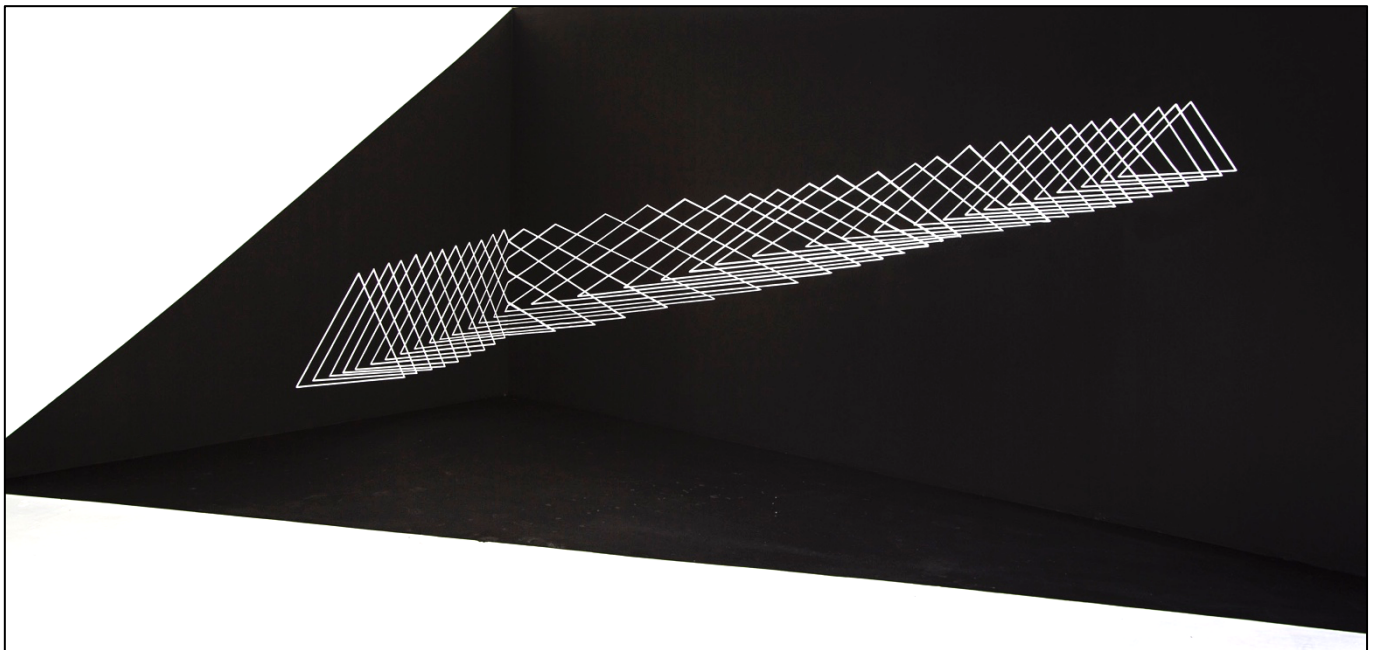


Fig 29: Lucia Rossi, Gnomon Triangle Room #1, 2019, acrylic paint, chalk pen, Rubicon Ari, Gallery 3

that you move around or even through, you are contained within the room, immersed, as one is immersed in the universe. It had a much stronger balance of proportion of body and space, positive and negative shape and space, and a sense of solidity and void was achieved. The narrower entrance of this particular space gave the installation a much greater sense of containment and a sense of entering an internal space. People were also asked to remove their shoes on entering, and this created a heightened visceral sensation, with direct sensorial contact with the ground. It was not just a room, or a gallery, you were now inside the artwork. Like Turrell's *Ganzfeld* and Colombo's *Spazio Elastico*, the *Gnomon Triangle Room #2* is about being inside the drawing, but it is also about being able to access something from within oneself, and to tune into the experience of perceiving space as actual and imagined.

With the *Gnomon Triangle Room #2*, there is a visual fragmentation that occurs in the viewer's vision as they move around the space, and a feeling of motion appears through certain 'framed' glimpses. This is enhanced by an optical effect created by the high tonal contrast and a sort of 'after-image' occurring in the eye. As one moves around the space, different perspectives become like stop-motion frames in the mind, particularly because of the high contrast lines. As you move around the space, different mental images build on top of each other. This dynamic kinetic movement is happening in the eye. I would argue that these visual fragments, these after-images, are the smaller works, within the larger work, that Heinz Mack was referring to.

The *Gnomon Triangle Room #2* combines two and three dimensions, and a combination of flatness and volume. People 'see' triangles, but in reality, the painted shapes are irregular polygons drawn over two or three intersecting planes. This highlights the notion of 'actual' and 'apparent' perception, where there is the cognitive shift between seeing and knowing. As with other works, the fixed viewpoint at the threshold revealed the appearance of regular shapes – a sense of 'order' - and then as the viewer walked into the space, the image ruptured, which served to not only destabilise the viewer's perception, but also forced them to reconsider the structure of the space and the shapes within it. The work and the space were activated by the viewer's movement and active perception. At times the black shapes appeared as if they were solids, or at other times they appeared as if they were a void. This loss of 'ground' transpired in both the painted forms and also in the negative spaces around them. The space was disorienting, in a similar way to Turrell's *Ganzfeld* works, except rather than a sense of lightness and total loss of depth perception, the result was more about a sense of volume, and

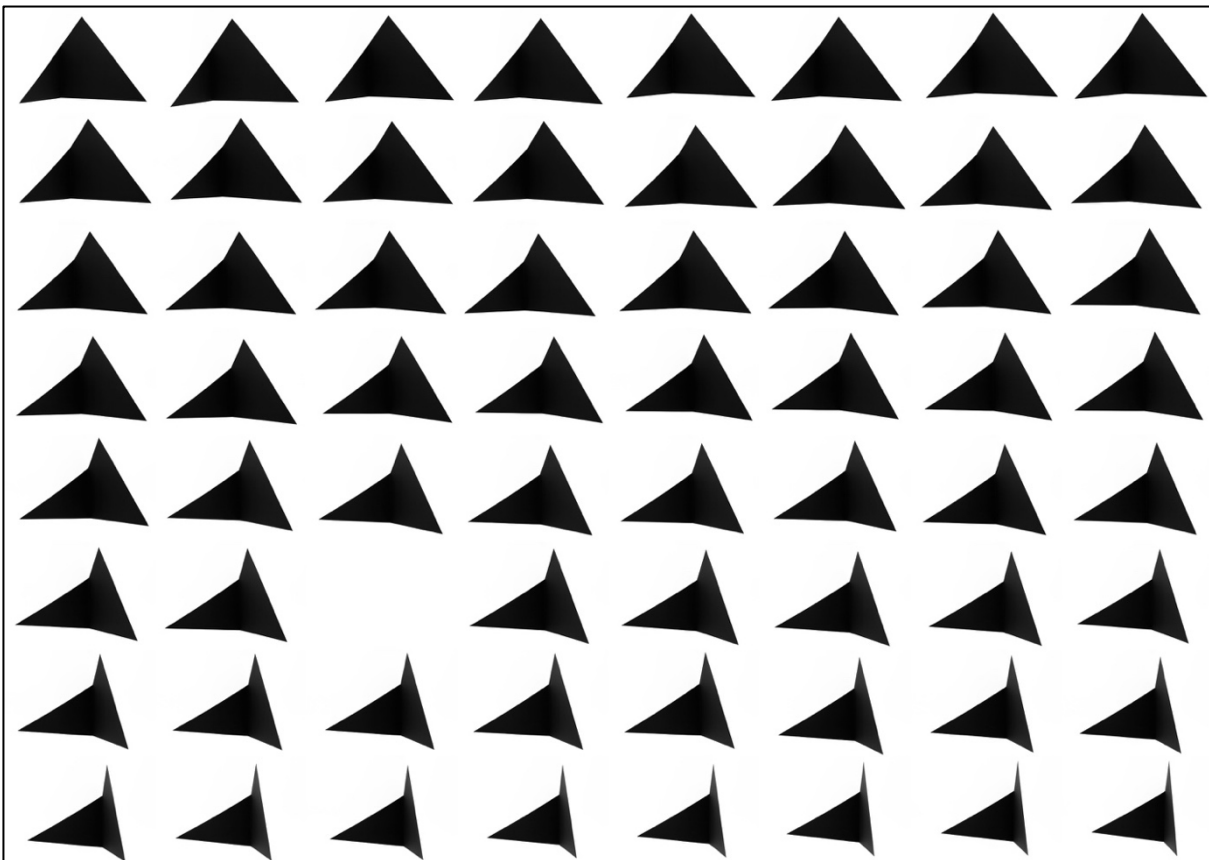
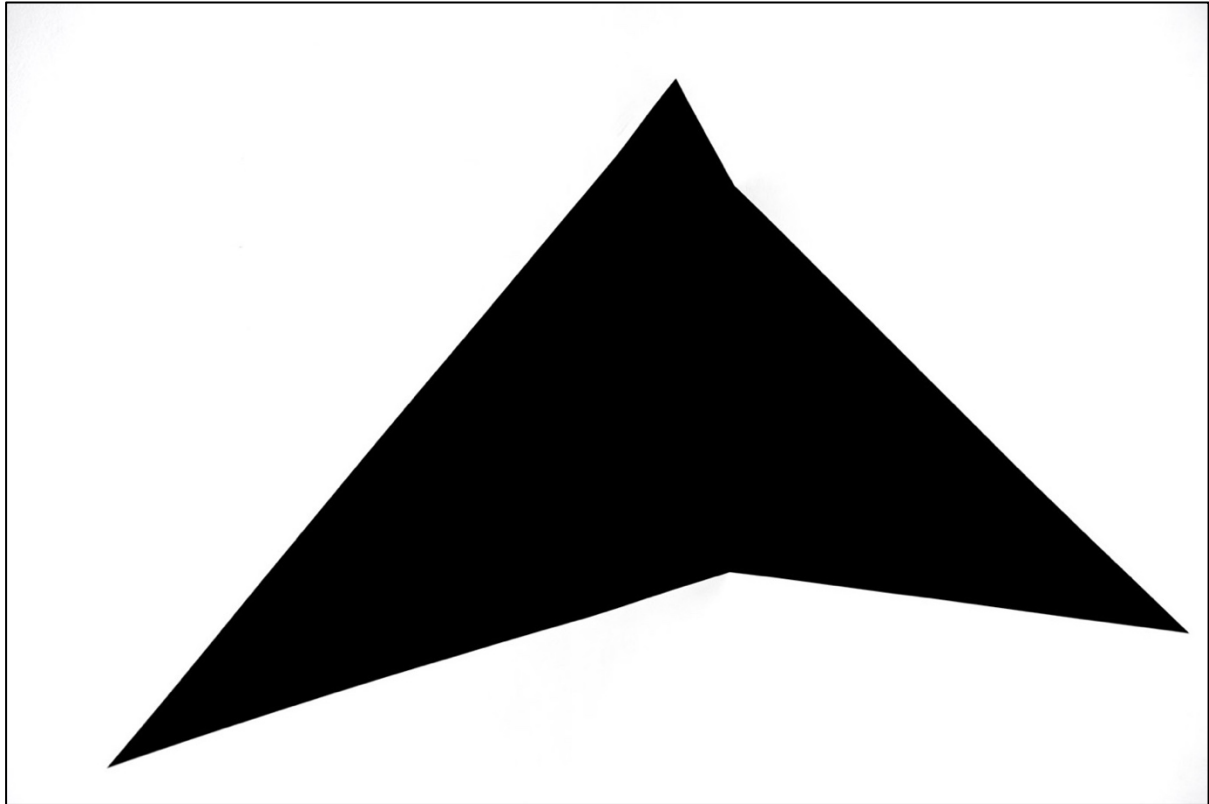


Fig 30: Lucia Rossi, Gnomon Triangle Room #1 (detail & animation stills montage), 2019

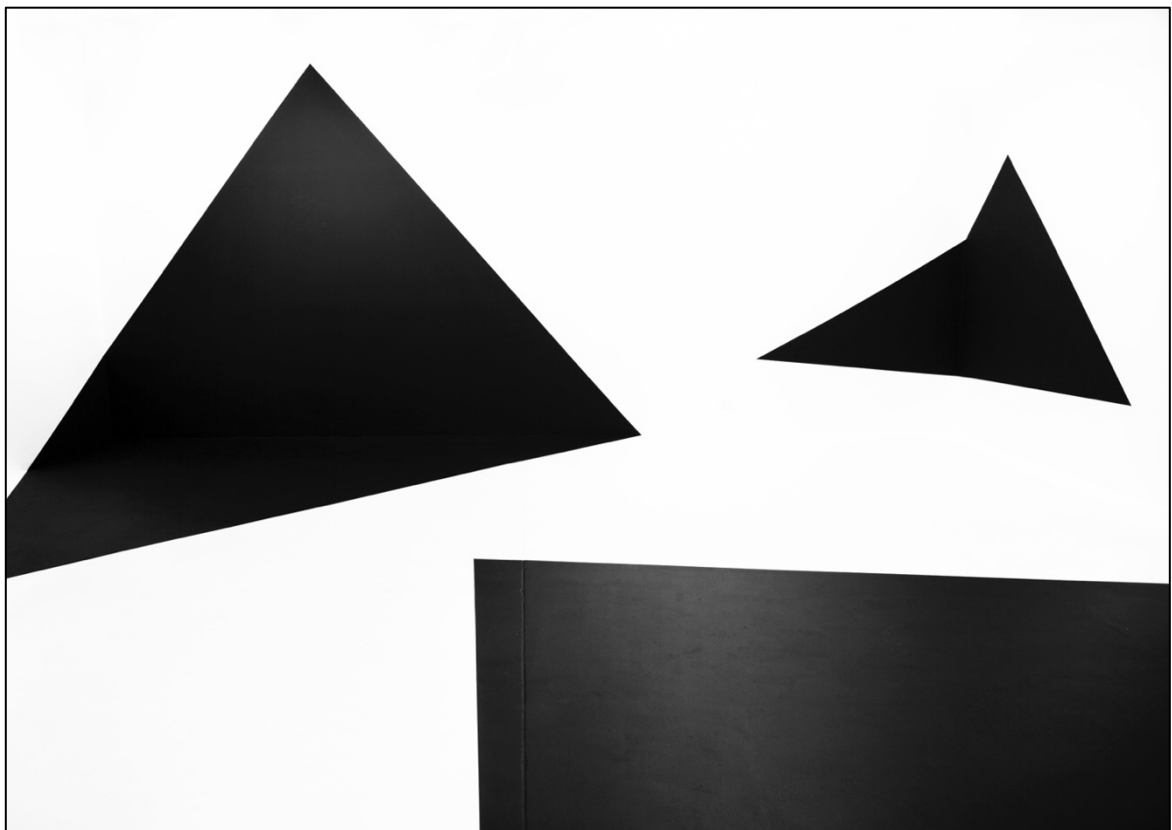
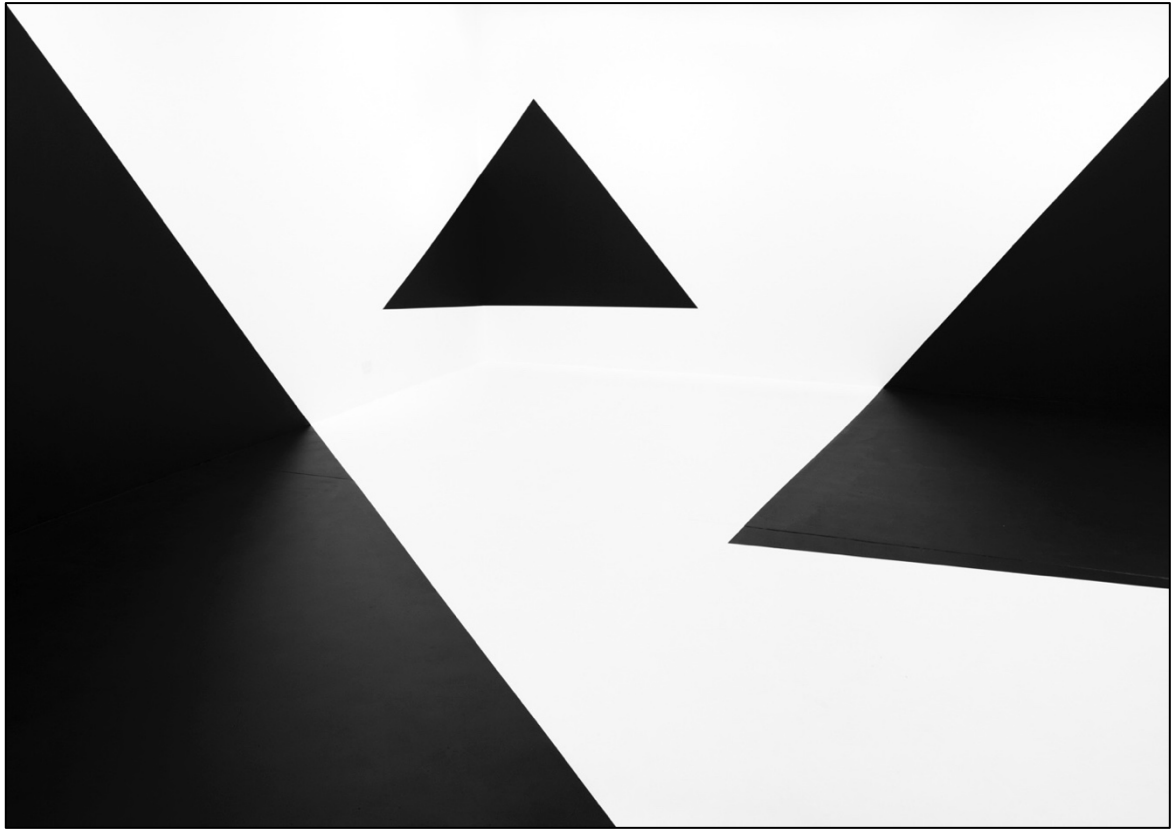


Fig 31: Lucia Rossi, Gnomon Triangle Room #2, 2019, acrylic paint, 270 x 800 x 800cm

a vague sensation that one might either fall into a hole, or bump into a solid. As the viewer interacted with these subtle sensations, there was also the conscious thought that this was just a painted room, and that there were, in fact, no objects present. The work amplifies the presence of the room.

The sensation of both negative and positive volume, of weight and weightlessness, is an important aspect of the work. The choice not to use colour is part of this. Colour is too subjective, and too symbolic for this work. Black and white - the highest degree of tonal edge contrast - not only intensifies the abstraction, it also produces a visual vibration, a sense of advancing and receding, and a sort of heightened alertness on the part of the spectator.⁵⁶ Both Eva Hesse and Richard Serra use a sense of volume, weight and weightlessness in different ways, to establish a presence and shape of space in their work. Hesse's juxtaposition of both transparent and opaque materials, and the way that she suspends and leans sculptural elements in the space has strong visceral, biological, and psychological qualities. Whereas Richard Serra's torqued steel works which he has described as 'weighted spaces', are exactly considered in direct relation to the scale and movement of the body, through space, whilst being viewed. He calls this 'peripatetic perception'.⁵⁷ These curved steel works contrast the sensations of interior and exterior through the concave and convex lines and opposing dark and light relationships between sky, work, and floor.

Image removed due to copyright

*Fig 32: Richard Serra.
Torqued Spiral, 2000.
Weatherproof steel. 13 ½ x 45 x 36
½ feet. Plate thickness: 2 inches.
Collection of the Pulitzer
Foundation for the Arts, Saint
Louis. Photo by Dirk Reinartz. ©
2008 Richard Serra/Artists Rights
Society, New York*

⁵⁶ Alloway, Lawrence. *Systemic Painting*, catalogue essay for the exhibition, Solomon R. Guggenheim Foundation, 1966

⁵⁷ Romaine, James. 'Gravity and Grace: the Art of Richard Serra', in *Image: Art, Faith, Mystery*, Issue 57, <https://imagejournal.org/article/gravity-and-grace/>

*'They are more than volume of form they are volume of space defined by the curve.'*⁵⁸ Fascinatingly, his *Torqued Ellipses* (Fig 32) which began in the early 1990's, were initially inspired by a perceived visual anomaly that Serra experienced in the Church of San Carlo alle Quattro Fontane by Francesco Borromini in Rome. While he was approaching the central area

of the church, he thought he observed an ellipse shape on the floor, that was somehow turned at an angle in relationship to another ellipse that was overhead on the ceiling. However, as he walked closer, he realized that it was just a regular ellipse in exact correspondence with the ceiling ellipse above. What interested him was the initial visual misinterpretation.

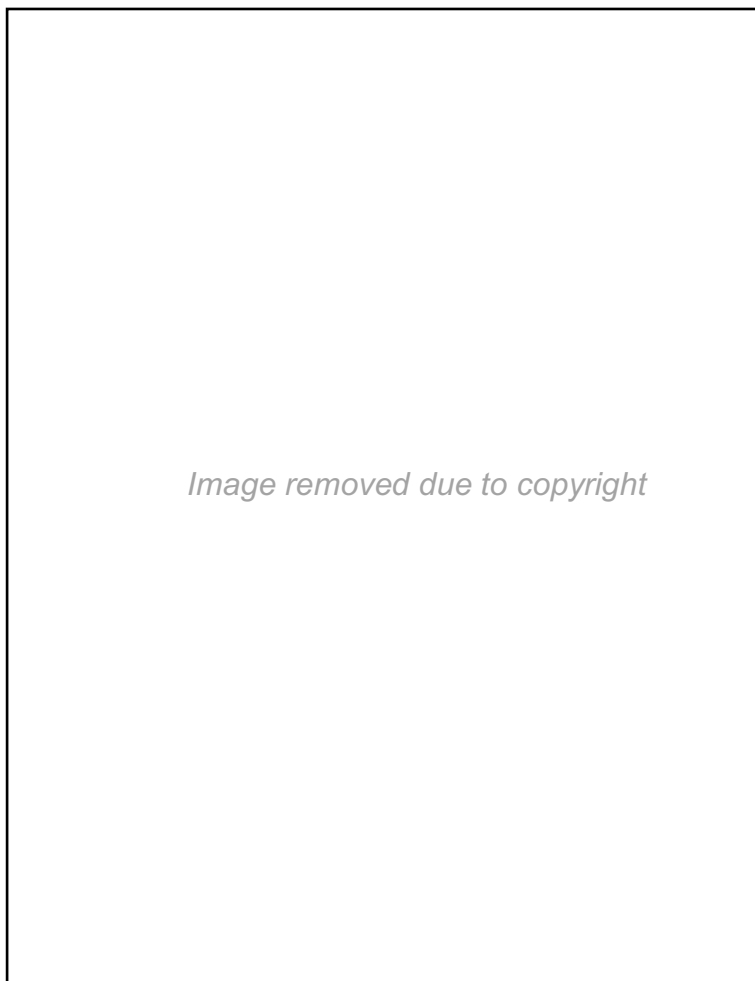
The *Gnomon Triangle Room #2* gives the impression that it is one part of an ongoing pattern. It could be a minimal reduction of a *Gnomon Drawing*, or like Bridget Riley's *Quiver* wall work, a microscopic enlargement. The room structure is its own

Image removed due to copyright

Fig 33: Claude Bragdon, Plate 30, *A Primer of Higher Space: The Fourth Dimension*, The Manas Press, Rochester, NY 1913

⁵⁸ Ibid.

geometric shape, and the black shapes are like geometric planar projections – that is, the cross-section shapes created when a solid volume passes through a plane – in this case, it is the right-angle planes of the corner sections of the room. The painted shapes give the impression that something has passed through. In his renown book *A Primer of Higher Space: a Fourth Dimension*, Claude Bragdon likens the shapes made by cubes as they pass through a plane to our ‘higher selves’ passing through the phenomenal world, and the remaining cross-section shapes as the ‘lower space aspects’ or the ‘personalities’ (Fig 33).⁵⁹ If the painted shapes in the *Gnomon Triangle Room #2* were produced as solid shapes they would not appear as triangles - except if they were constructed to have a singular fixed view-point like the room installation, and placed in exactly the same angle as the orthographic projection. As



solids, they would hypothetically be irregular forms, with many different plane surfaces. They would be even more abstracted if presented as negative spaces taken out of an overall solid form.⁶⁰ There is a sensation that these painted shapes, that at first instance seemed so ordered and equilateral, are in fact entirely illogical shapes that have been squeezed into the room.

This also recalls Agnes Denes series *Study of Distortions: Isometric Systems in Isotropic Space* (Fig 34). Denes used the structure of map projections and the symbology of the grid, geometry, and mathematics to challenge our conceived ideas of space and worldview. Denes painted the grid

Fig 34: Agnes Denes, *Study of Distortions: Isometric Systems in Isotropic Space*, 1978, Watercolour, gouache and ink on graph paper and mylar, 43.2 x 35.6cm

⁵⁹ Bragdon, Claude, *A Primer of Higher Space: the Fourth Dimension*, Plate 30, The Manas Press, Rochester, NY

⁶⁰ I am currently in the process of materializing these ideas as the next phase of the work.

and world map on a background paper, then overlaid a clear mylar sheet with the geometric drawing layered over the top. She used a range of different forms - pyramid, torus, shell, or ovoid – to contain these beautifully painted world views, which either appear as sitting on the surface of the shape or squeezed inside it when the two layers are brought together. Denes' shapes, like the room in my *Gnomon Triangle* installation, delineate a space, and raise questions of how we conform to this structured space. Once Denes' mylar sheet containing the geometric form is removed, we see a world that has been shaped by it. A similar concept could be imagined with the triangle shapes in the *Gnomon Triangle Room #2* installation; if I removed the room, what sort of black shapes would remain? Is it solid matter or is it empty space? The immersive nature and experience of the *Gnomon Room* work lends itself to imagining that the shapes could extend either into or beyond the surface; either as solid shapes or as formed space. Agnes Denes sums it up:

*There is no solid matter and no empty space; time becomes an earthbound reality but remains an enigma in the fourth dimension. We must create a new language, consider a transitory state of new illusions and layers of validity and accept the possibility that there may be no language to describe ultimate reality, beyond the language of visions.*⁶¹

The *Gnomon Triangle Room #2*, at first creates the expectancy of something organised and rational, which quickly falls apart as one moves into the space. It has the complex axis of both presence and absence of perspectival space and conveys a sense of being both three-dimensional and two-dimensional. It is intended to extend and challenge the fixed dimensions and spatially mapped coordinates embedded in photography's construction of the world. By using its own logic but playfully manipulating the space using the 'programs' of photography, an alternative space is created. This space is one of uncertainty, some anxiety, but also, it is hoped, of beauty and complexity. It is an expanded consideration of space that also seeks to re-engage the body within space. To highlight the actualities of vision rather than the abstract certainties of photography. The *Gnomon Triangle Room* asks you to look, but also to feel the body in space, to sense the external and the internal space, and to be present in the presence of space.

⁶¹ Denes, Agnes, 'Notes on a Visual Philosophy', in *Comp. & Maths. With Appls.* Vol 12B, Nos. ¾, pp.835-848, 1986, Pergamon Press Ltd, Great Britain

Conclusion

This research examined the self-reinforcing nature of pictorial perspective, and the technical image (photography, screen, and optical), in limiting and defining modes of perception. It considered how they have influenced the experience and expression of space, time and dimensions in spatial practice, and how this relates to an understanding of our place in a wider universe. Drawing on theoretical and artistic examples, an associated investigation considered aspects of embodied perception and illusion as an active ingredient in spatial practice, and how these might reveal the manner in which we sculpt or construct our understanding of reality. The measurement and representation of three-dimensional space has had a profound effect on perception and experience of real space. Whether it is mathematics, language, linear perspective or photography, we embody these systems, our perception adapts, and we become the systems of measurement that we create. This self-reinforcing nature of the expression and experience of space also relates to our lived experience and understanding of being located in, and connected with, a wider universe.

Yet, because these systems are abstractions and reductions of phenomenon they, by necessity, exclude many aspects of experience, sensation and perception. The effect can be to mistake or substitute the map for the territory, to privilege the idealized known over the actual perception, as discussed in the early part of the thesis. The works do not propose some grand alternative to these systems, but they are intended to evoke the possibilities of alternatives and to allude to those things that are unseen or 'not in focus'. They are also intended to heighten the viewer's perceptions and experience of their own embodied experience and perception. To make one aware that illusion lies even at the heart of certainty.

Gnomon Triangle Room #3, MFA Grad Show, Margaret Lawrence Gallery, Dec 2019

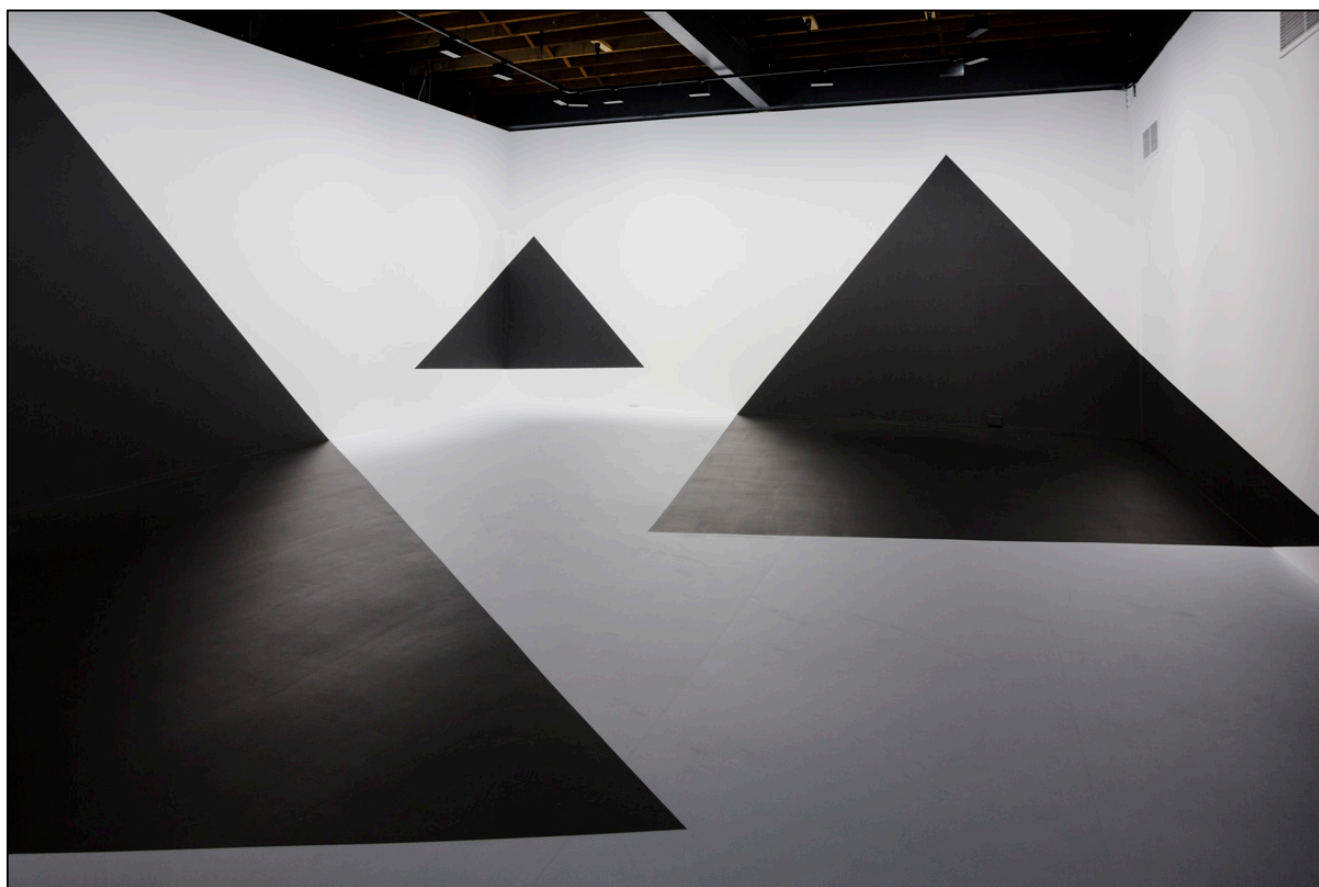


Fig 35: Gnomon Triangle Room #3, acrylic paint on walls and floor, h: 380 x w: 900 x d: 750cm. Facing page top: fixed view-point perspective shows alignment of triangles as three regular shapes of different proportions. Facing page bottom and below: the same triangles seen from different view-points showing how the shapes varies from different view-points

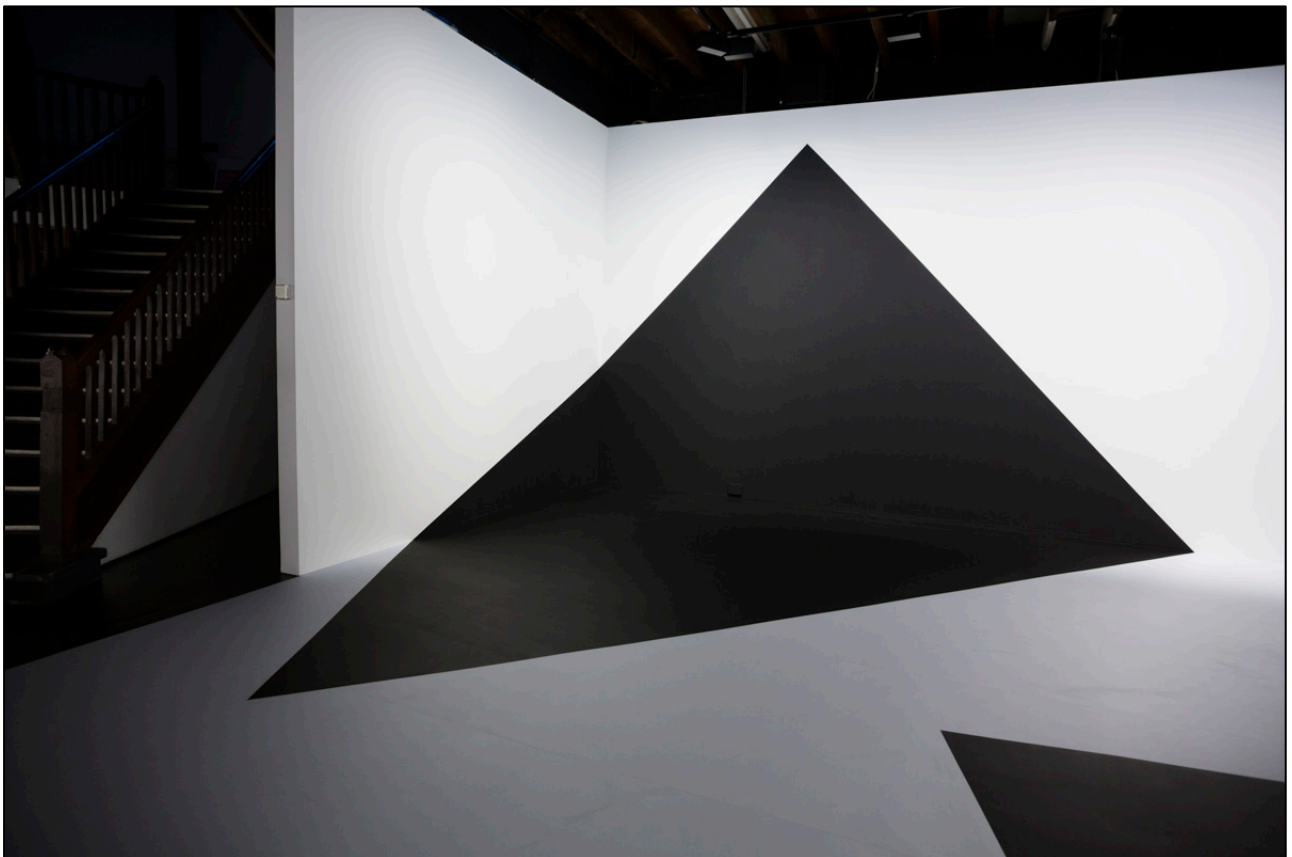
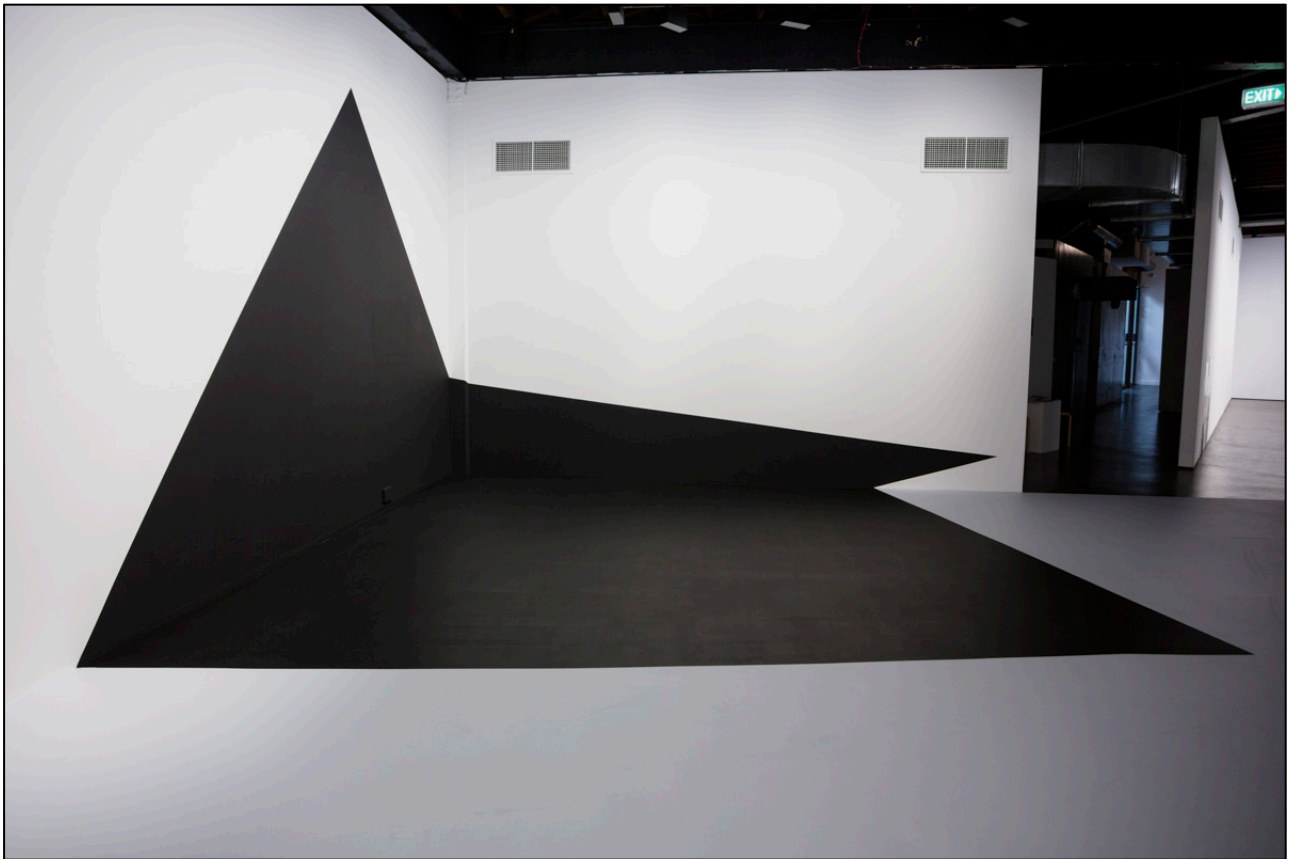




Fig 36: Different approaches to the work, also showing seating area and accompanying wall artworks

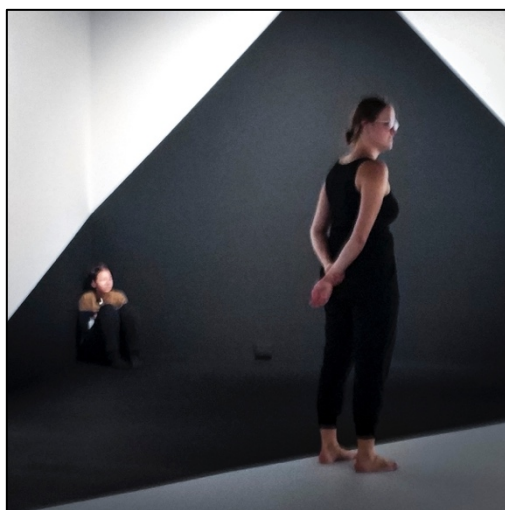
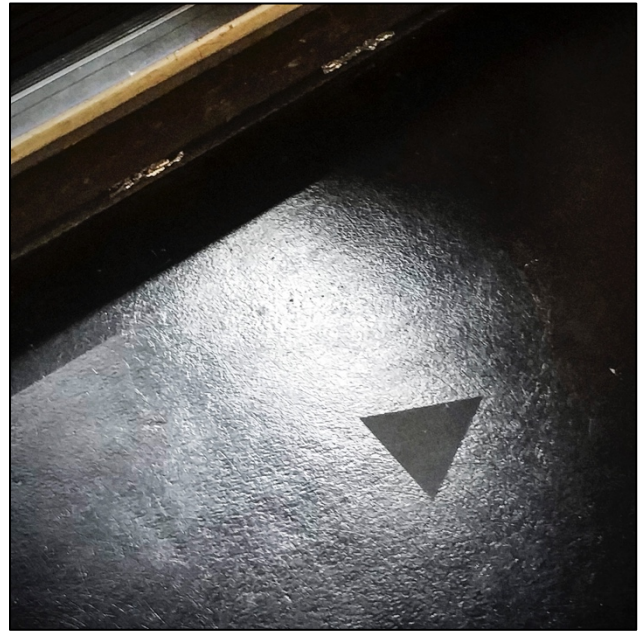


Fig 37: Top left: Participants take shoes off to enter the work. Top right: Small triangle on the floor at the foot of the stairs that signals the fixed view-point where the room triangles align. Other images show participants experiencing the work

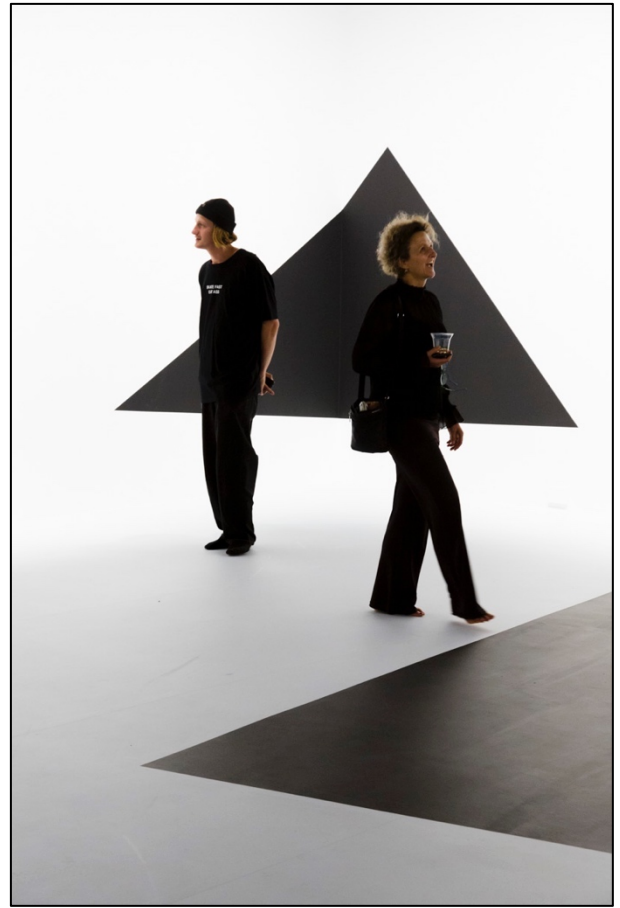


Fig 39: Participants experiencing the work

Fig 38: View of the work upon entering the gallery

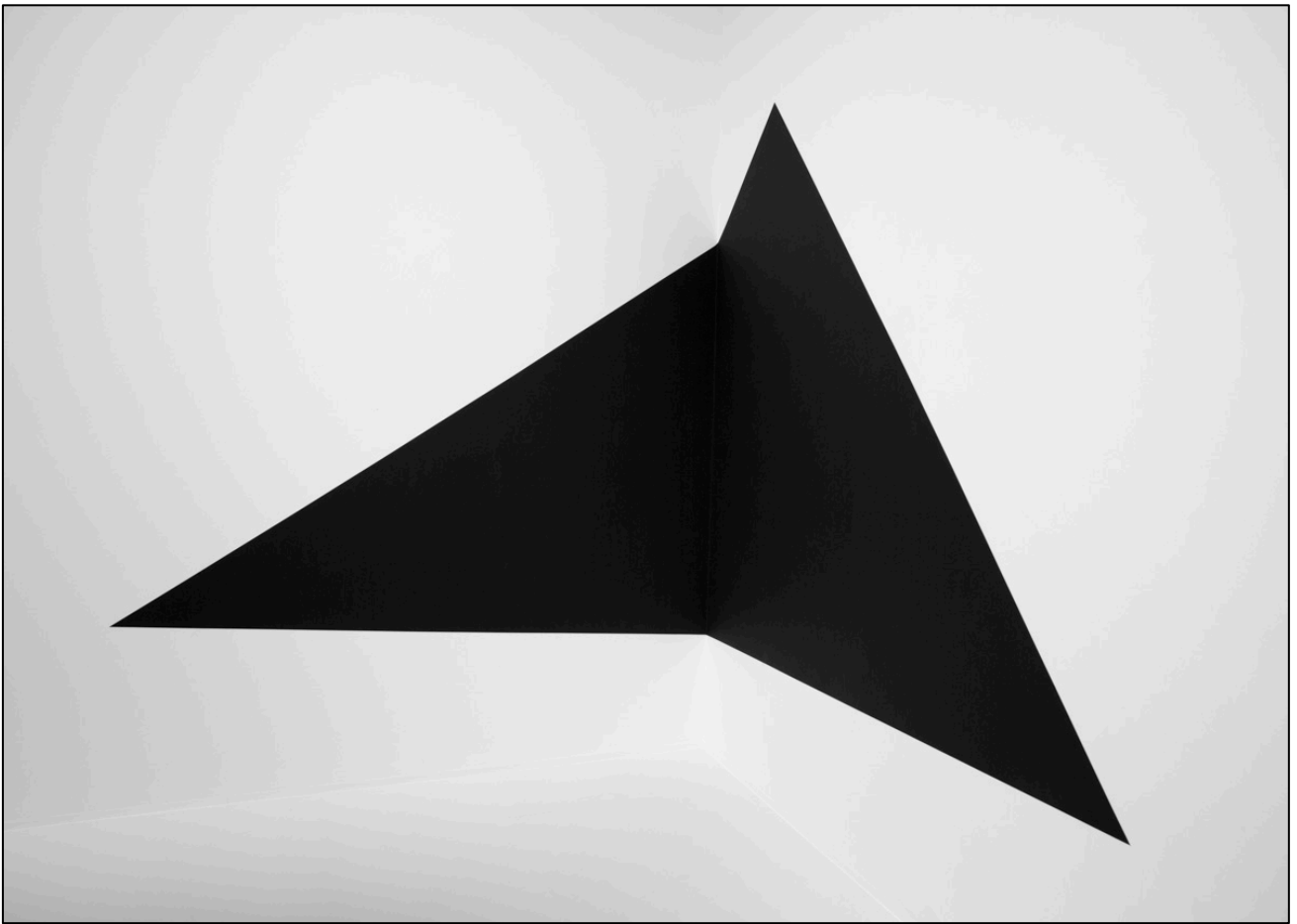
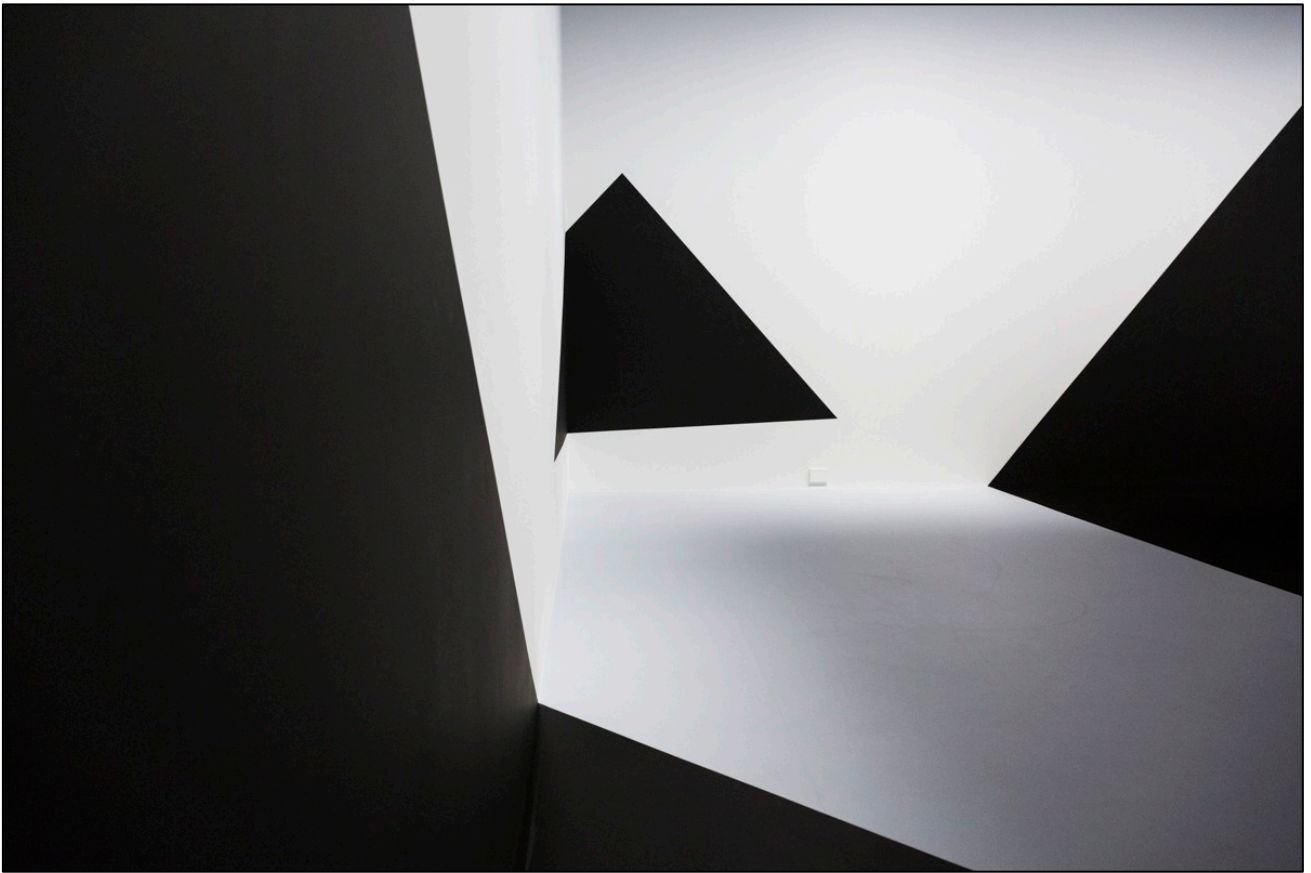


Fig 40: Different views of the central triangle



Fig 41: Wall works placed in relation to the Gnomon Triangle Room #3
 Left: Gnomon #4 (110mins), 2019, dye transfer aluminium print, 40 x 30cm
 Right: Gnomon #7, 2019, dye transfer aluminium print, 40 x 30cm



Appendix – Other *Gnomon Experiments* not directly mentioned in thesis

Gnomon Stop Motion Animations - Projected

VCA ArtSpace (May 2019) & George Paton Gallery (March 2019) - Melbourne, Australia

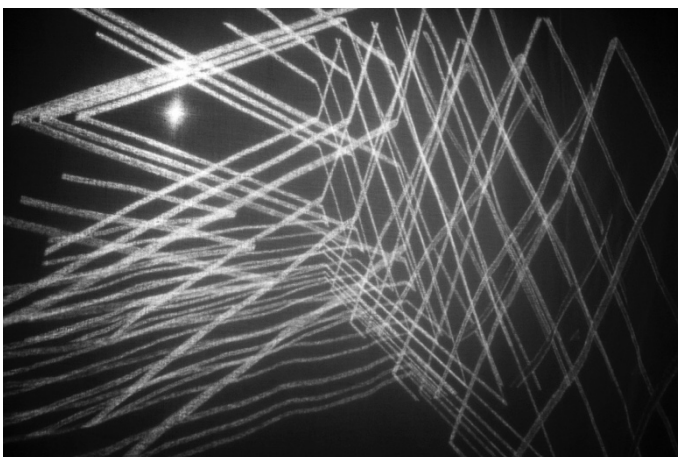
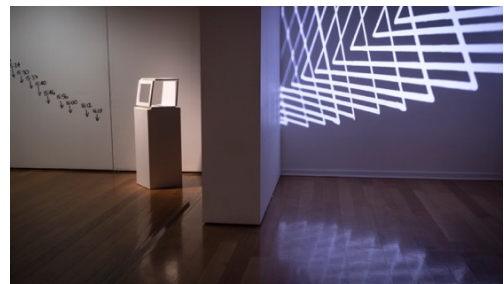
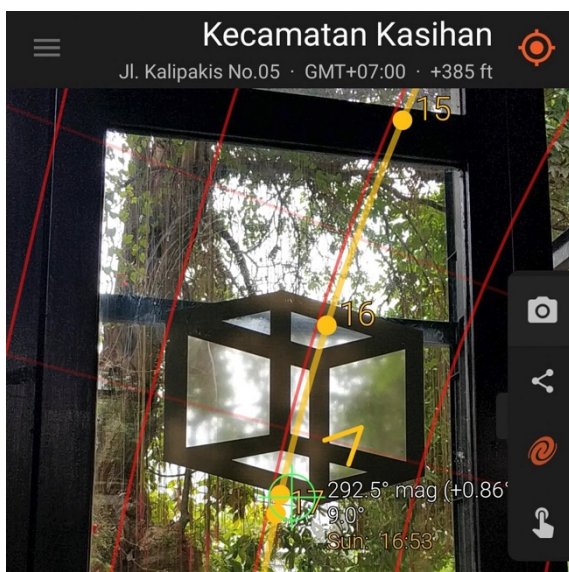
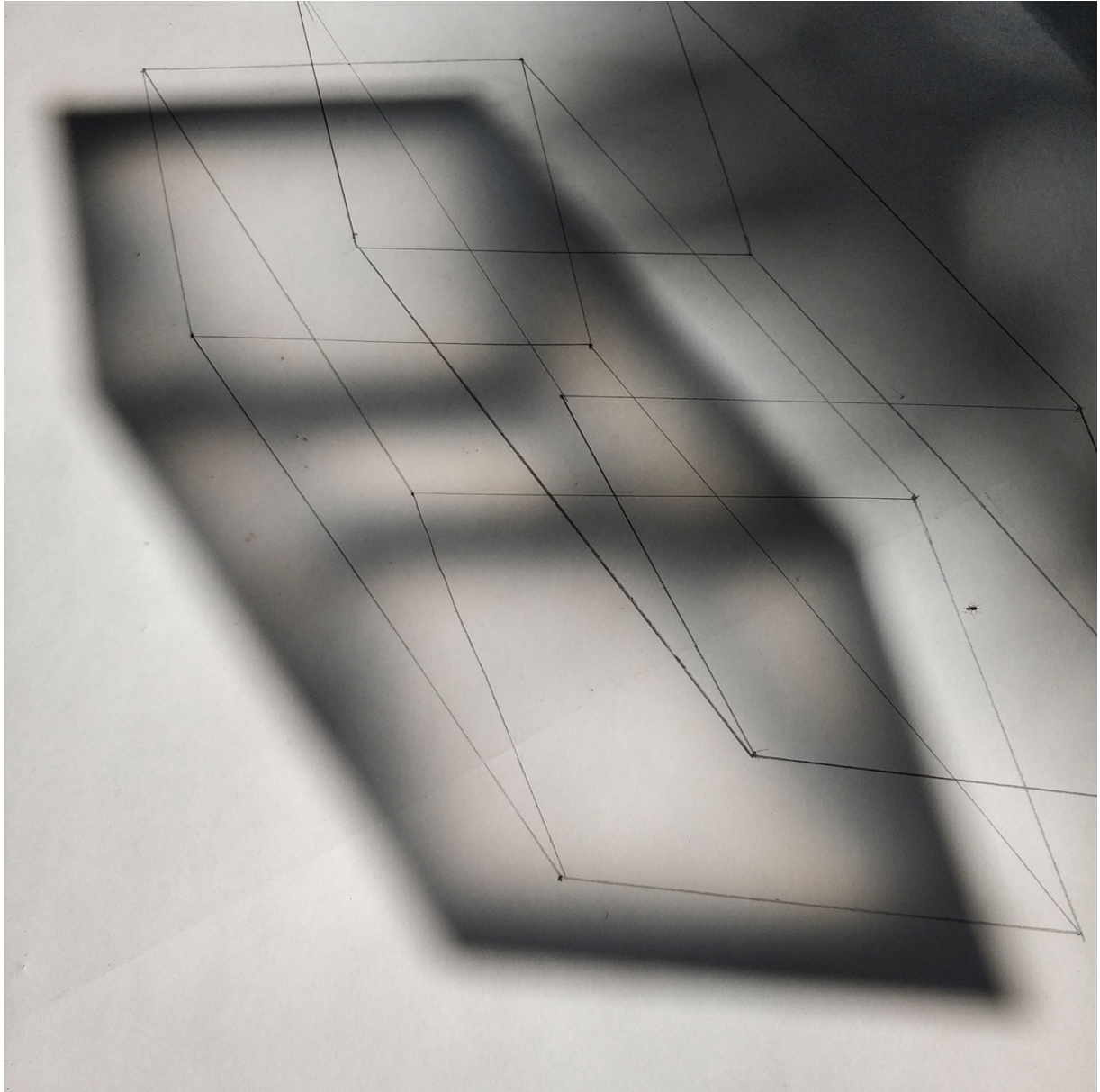
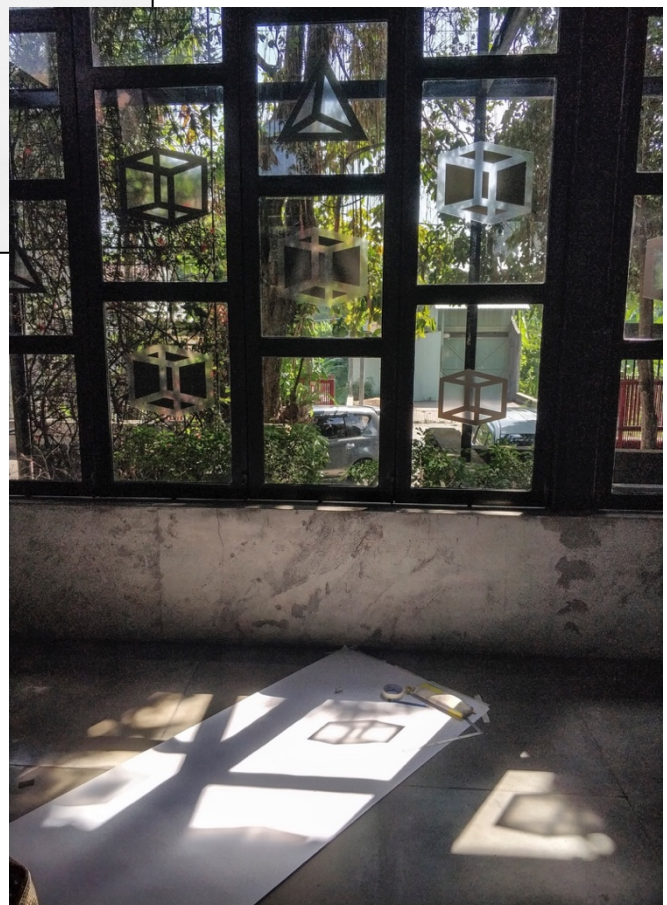
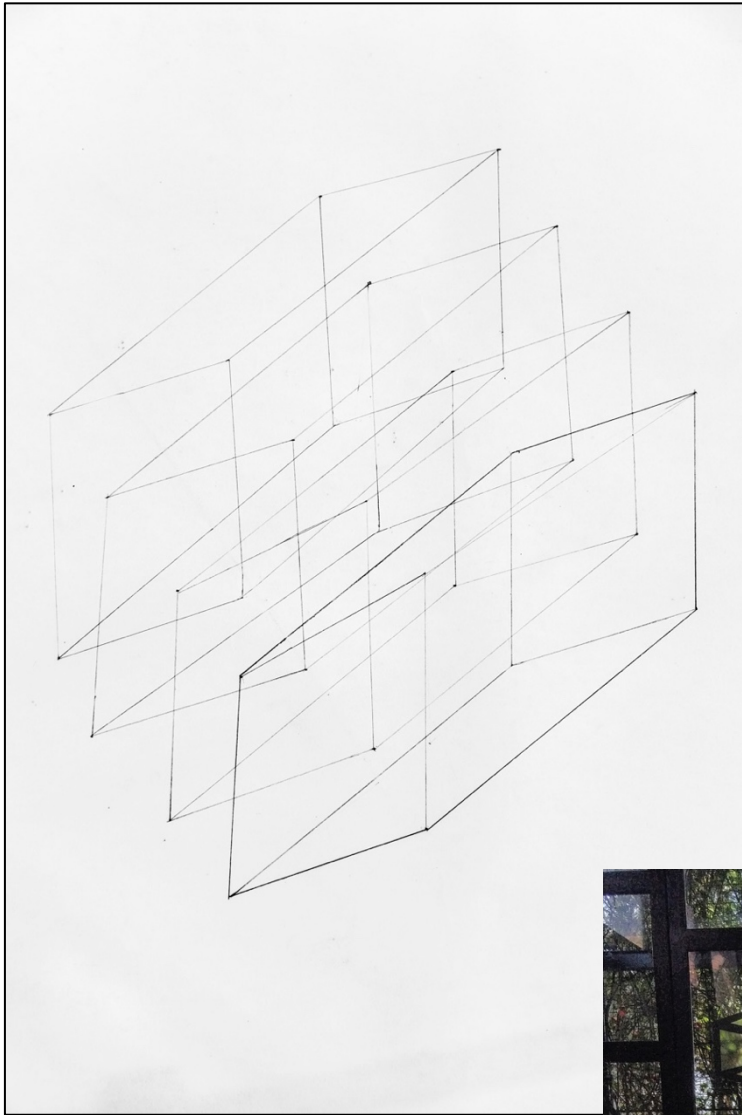


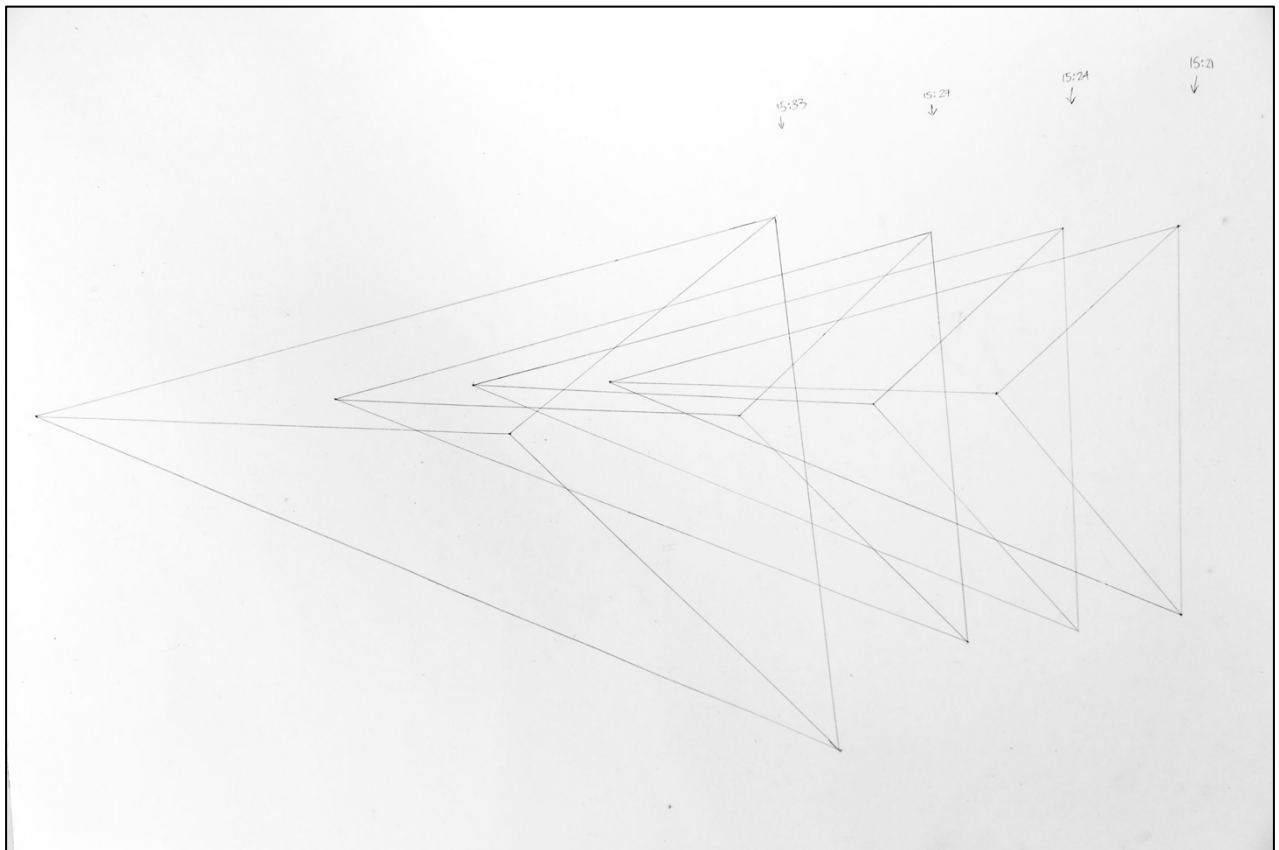
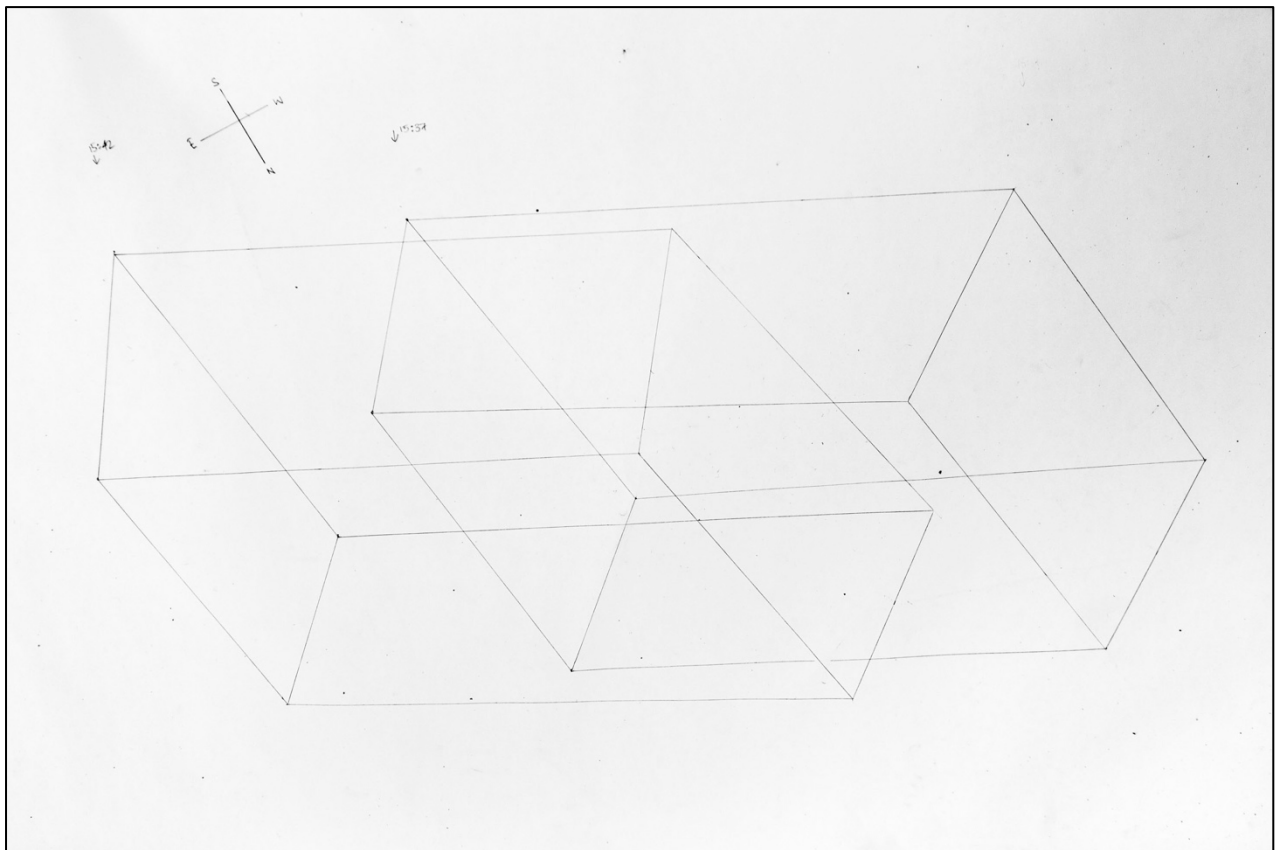
Fig 42: Lucia Rossi, *Gnomon Drawing #0*, Stop-Motion Animation, 2:40mins



Fig 43: Lucia Rossi, Gnomon Window Projections, 2019, vinyl cutouts & sunlight, projections 1-4:30pm approximately, Sarang Building, Yogyakarta, Indonesia







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Nancy Holt, Michael Heizer, Michaela Gleave, Natasha Johns-Messenger, Daniel von Sturmer, David Hockney, Robert Irwin, Mel Bochner, Mikala Dwyer, Brian O'Doherty, Taree MacKenzie, Len Lye, John Whitney, Paul Laffoley, Jess Johnson & Simon Ward, Stephen Haley, Stephen Bram, Oskar Schlemmer, Laressa Kosloff, Frantisek Kupka, and Kasimir Malevich.