

ETHERIUM



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AN EXHIBITION OF FRAMED SPACE

BY NOBBY SEYMOUR

EXHIBITION DATES: 6TH MARCH – 3RD APRIL, 2016

AT **WOODBINE ART**

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'ART MAKES THE
UNSEEN VISIBLE'
– Jean Luc Marion

FOREWORD

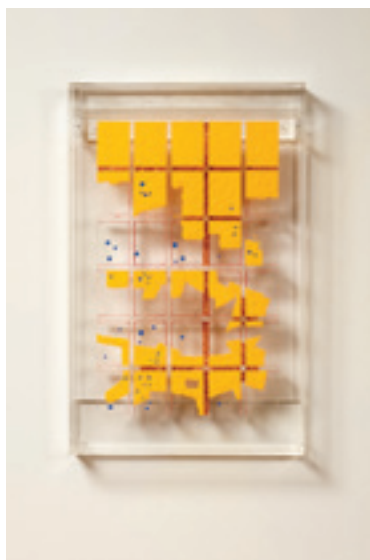
My last exhibition, Grey Matters in March, 2013, focussed on memory and intuition. The delicate works were encased in clear acrylic covers as I had observed optical qualities peculiar to acrylic. I subsequently designed several pieces leading towards a new exhibition which optimised these qualities – particularly in respect to a paradoxical reading of the surface/depth of field of the material.

Initially the components for two of the pieces were cut out by my fabricator who then declared “Enough – no more!”

My ignorance of the material’s properties were not only creating stress but proving to be an expensive exercise.

It was back to the drawing board, but not before taking a scheduled break in Hawaii. Soon after taking off from Melbourne Airport, a Chardonnay at 12,000 meters prompted a flood of creative thought and over the next seven days and the flight back, I had the skeleton of this exhibition, inspired by an earlier reading of Gaston Bachelard’s *‘Poetics of Space’*.¹

‘Number One Yellow 2013’ is the solitary product of the initial path taken but serves as a curious link between Memory/Intuition and the role of memory in our reading of intimate space.



Number One Yellow 2013

1 The Poetics of Space – the classic look at how we experience intimate spaces by Gaston Bachelard; Translated from the French by Maria Jolas. Beacon Press, Boston, 1994 edition.

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Glamis Castle Scotland; The King, Duncan, arrives with his royal retinue to stay with the Macbeths. He enters the castle.

Duncan. *This castle hath a pleasant seat; the air
Nimble and sweetly recommends itself
Unto our gentle senses.*

Banquo. *This guest of summer,
The temple- haunting martlet, does approve
By his lov'd mansionry that the heaven's breath
Smells wooingly here: no jutty, frieze,
Buttress, nor coign of vantage, but this bird
Hath made his pendent bed and procreant cradle:
Where they most breed and haunt, I have observ'd
The air is delicate.²*

Thus Shakespeare cosies us up. We have arrived at the Macbeth's charming castle and we settle back in our seats in full knowledge of exactly what Banquo and Duncan are on about – sometimes we too have walked into someone's home and it just feels right. Shakespeare is petting us in a dramatic play so that the horror of the subsequent events is enhanced.

Four hundred years later, a German mathematician and philosopher Edmund Husserl outlined his thoughts on how we human beings perceive the world around us. Thus began a new school of philosophy, Phenomenology, which was to play a major role in the development of intellectual thought in the twentieth century. The dialectic of Phenomenology becomes very complex so I am taking the outrageous liberty of summing it up in a sentence:

PHENOMENOLOGY CONCERNS THE WAY WE AS HUMANS READ THE WORLD AROUND US.

A very short sentence – but the word read is all important. It sufficed for William Shakespeare, who had his characters Duncan and Banquo read the atmosphere in Glamis Castle and I am hoping that it will suffice for me, and ultimately you, so that you will be able to read the spaces I have created in these artworks or just celebrate its everyday occurrence in our surrounds. Our memory plays a significant part in this reading but I will touch on this in the Conclusion.

In 1958 Gaston Bachelard, a French Philosopher and Phenomenologist, wrote a book *"The Poetics of Space"* which has influenced thinking in Architecture but has had a much lesser impact in the Visual Arts. I read it in early 2013 and frankly thought the man was bonkers. I am fairly slow to grasp important concepts but over the next couple of months *"The Poetics.."* kept on percolating through my consciousness and I slowly came to understand the point that Bachelard was making, which is we measure space not with callipers and a yardstick, but with our sensibility.

2 Macbeth, scene vi, Act 1. Shakspeare's works Vol X. Kegan Paul, Trench & Co MDCCCLXXXIX

Bachelard wrote of everyday spaces in the home, the space cupped in a birds nest or nestled in a drawer and he illuminated these descriptions quoting passages from local poets rather than with the semantic jargon that latter day phenomenology had become imbued with.

I was hooked; my art journey had primarily been an exploration of space. I had commenced full time in 1984 painting murals, trompe-l'oeil, at which I became very successful as my architectural background had provided a rigorous training in perspectival projection but perhaps more importantly taught me how to seamlessly integrate the illusion of trompe l'oeil into the fabric of the structure.

After twelve years of travel and swinging on scaffolds I was ready to become a studio painter. In my first exhibition I indulged in the texture of oil paint, a novelty after the flatness of polymer emulsion required for murals, but from there I followed on with my spatial exploration. The terminally curious can follow my progress on www.nobbyseymour.com.au. I was never conscious of the path taken at the time, it is only in retrospect that I am able to discern this intuitive development.

'*The Poetics of Space*' had set me thinking about space in general. It had earlier occurred to me that gravity, at least indirectly, affects our spatial conception. Our spatial experience is prejudiced in favour of the horizontal plane we exist in; consider the following locations and distances. Conventionally distances above ground level are considered positive and distances below negative.

I. AROUND 2000 METRES,

The Vertical Axis, (+ve): Ascending Mt Bogong, the highest peak in Victoria.

The Vertical Axis, (-ve): Descending down into the Krubera Cave, the world's deepest cave in the Western Caucasus, Abkhazia, Georgia.

The Horizontal Axis: (That is along ground level) – just a twenty minute stroll.

II. AROUND 9000 METRES,

The Vertical Axis, (+ve): Climbing Mt Everest, the highest peak above sea level on Earth.

The Vertical Axis, (-ve): We are located in Jules Verne's³ imagination now.

The Horizontal Axis: Setting out at a brisk pace, you should cover it in 1 hour 30 minutes.

The Vertical Axis could also be referred to as the Gravity Vector.

From these examples we can observe how a horizontal dimension of little consequence becomes epic when translated to a vertical scale. It is not only that we are culturally accustomed to a horizontal plane, our physiognomy has evolved such that the eyeballs within our orbital sockets occupy a horizontal axis.

I hope these examples also serve to indicate that our spatial experience is influenced by more than our perception of dimension. I will now outline and expand on some of the discoveries I have made during my years of 'exploring space'. Bear in mind that these are the experiences of a man of the Western Culture; other cultures experience many aspects of our world quite differently.

3 Journey to the Centre of the Earth by Jules Verne; First published 1864

THE ETHERIUM

We have been accustomed to focussing on objects (surface, form etc.) in space but rather, concentrate on the *space* around/between the surfaces. The word *space* carries connotations so I am replacing it with a nifty neologism – Etherium. Etherium is that through which we perceive objects, be it the vase on the table and the wall behind or the distant moon in the night sky. Clarity is the essence, the etherium does not exist under water or in a foggy atmosphere as the interval between the object and viewer will itself have taken on a corporeal being.

The etherium is not as old as our universe. About one billion years after the Big Bang, the primordial plasma began to coalesce into galaxies and planets and the etherium, as I describe it, became apparent.

THE IMPLIED VOLUME

Think of a cube, for example, its six faces made up of linear members (fig i). Remove these linear members until only twelve edges defining the cube remain (fig ii); remove one more, and its suggested form of a cube is lost. I posit that we continue to read this cube as enclosing an implied cubic volume. I am going to place an object within this implied volume. Now we have two volumes for our senses to perceive – the explicit volume of the object and the implied volume within the cube and without the form (fig iii). Therefore our reading of an implied volume in toto negates our reading of the etherium within the volume.

Now remove the object from the implied volume and suspend it in the etherium (fig iv); we read only the explicit volume of the object (implied by its surface).

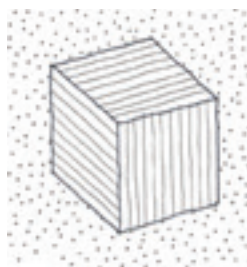


FIG I

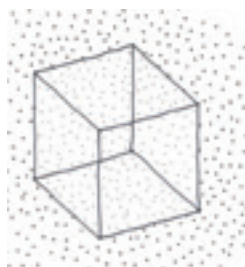


FIG II

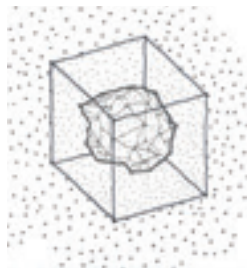


FIG III

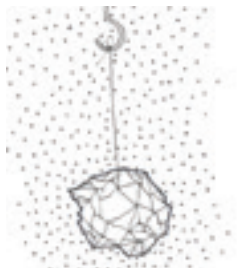
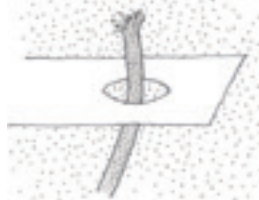


FIG IV

THE DYNAMICS OF THE VOID

Cut a hole in the plane of a sheet of paper, and you have a void in the plane of the paper but we read the plane of the paper as carrying across the void (fig v). Pass a piece of cord through the void and the assumed plane is now ruptured (fig vi). A new dynamic has been introduced and spatial relationships are occurring between the surface of the cord and the edge of the void. Once aware of these relationships, they are very pleasurable to observe.



PARALLAX

Imagine walking down the aisle of a cathedral; as you proceed, the observed *beyond* becomes obscured behind a column, then comes into view again ... but it is not quite the same, your viewing point has changed and you are observing the *beyond* from a slightly altered angle, edges previously unseen are revealed and perhaps there is even a glimpse of beyond the *beyond*. It is odd perhaps but we are more acutely aware of this phenomenon when we are quite stationary, in a cinema seat, and the camera does the moving for us. The tracking or dolly shot is used to great effect by cinematographers and it is also generates great pleasure for us viewers. I will attempt to explain the reason for this in my Conclusion.

THE POTENTIALITY OF PROXIMITY

I am not aware of any rational explanation for the following phenomenon:

On a two dimensional plane, two tonal masses floating on a monotone ground will generate a tension between the edge of their masses as they approach. This phenomenon has been used by artists throughout time – Michelangelo used it to great effect on the Sistine Ceiling; there is enough tension between the forefingers of Adam and his Creator to power the Renaissance. The power of this proximity is not confined to two dimensional art. It is effectively employed by sculptors, particularly modern ones like the American Richard Serra whose warped spaces between 6mm plates of steel are thrilling to experience as you walk through them or closer to home, Ron Robertson Swann's 'Vault'. Earlier, in referring to the Dynamics of the Void, I anticipated this dynamic tension in describing the cord and its relationship with the edges of the void.

CONCLUSION

The development of our spatial intelligence⁴ rewards us with a sensual appreciation of this constant that is around and throughout our very being. As I worked creating constructions for 'Etherium' I was continually drawing parallels in my mind with Music. Between our ears there exists an infinity of space, a universe occupied by our imagination. I have an affinity for Wagner and German Romantic music generally; far, far away, way past a distant galaxy, I might hear the faintest notes of violins. They hijack Time and as they swell in magnitude they are joined by other forces, the brass, the woodwind until the sound fills the universe. In early 2014 I created a construction, 'Passage' which although static expresses my sentiments for the music in a manner which relates it to the discoveries I have made in exploring space.

I mentioned the pleasure that the phenomenon of Parallax gives us. The reason for this, I believe, is Bergsonian. We are moved by our perception of the present moment linking with the past, whether the past is distant or immediate. This expands our consciousness by adding the dimension of time.

As I write this, a timely article by the classical pianist and writer Anna Goldsworthy has appeared in a current edition of The Monthly.⁵ I quote:-

'One theory of music is that – like poetry – it evolved as a mnemonic device. Memory is the key structural element of any one piece of music, allowing us to make sense of its processes, its developments and recapitulations. On a larger scale, even before the advent of "historical programming", composers have always addressed each other in their music. It is an even more pronounced "anxiety of influence" than in literature, as the very language of music only has meaning in the context of what has passed before. The conversation creates the language. This occurs in ways that are both hidden and overt, through quotation, key meanings, adherence to and subversion of forms. Occasionally a composer raises a voice to address a peer in the distant past. The open chord spacing of Bach's first Prelude and Fugue in C is embedded in Shostakovich's Prelude and Fugue in C, which picks up a conversational thread 230 years later. Bach's co-operative polyphony is re-imagined in a Soviet context, implying alienation within the crowd, and yet there is a vast comfort in that conversation: across cultures, across ideologies, across the ages.'

In no less a manner, memory is a key structural element of our enjoyment of space and the development of our Spatial Intelligence. We live in the post- Einsteinian universe of spacetime, warped by mass/energy resulting in gravity. Just as our nervous system is sensible to mass/energy, it is our memory which is sensible to time.

4 Practical Poetics in Architecture, Leon Van Schaik; 2015 John Wiley & Sons Ltd.

The book examines the influence of the poetics, of Bachelard amongst others, on contemporary architecture.

5 The Lost Art of Listening by Anna Goldsworthy, the Monthly October 2015.



PRESENCE AND BEYOND;

2014.

W 108cm x D 44cm, H 222cm.

Timber (KDH), calico, linen cord, synthetic fibre filling and beeswax on MDF stand.

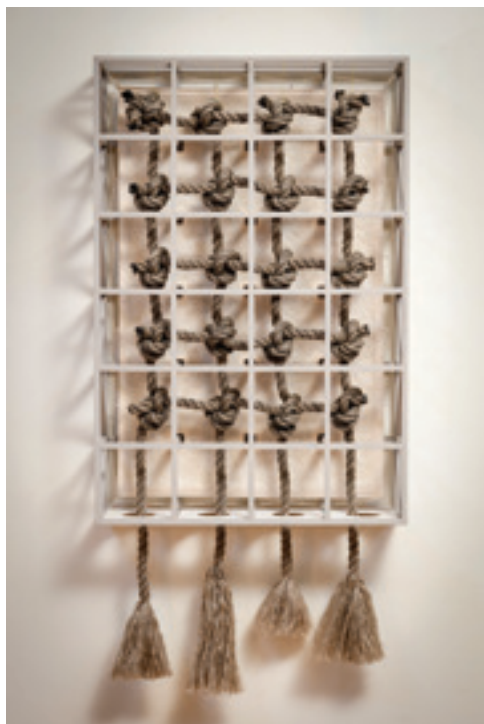


WEFT;

2014

W 73cm D 19.5cm H 73cm

Timber (KDH), sash cord, Arches Paper and beeswax.

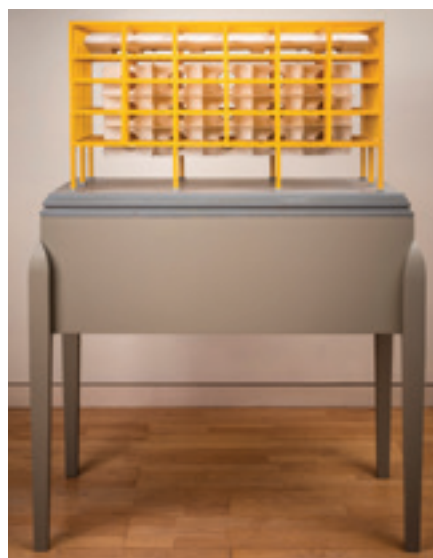
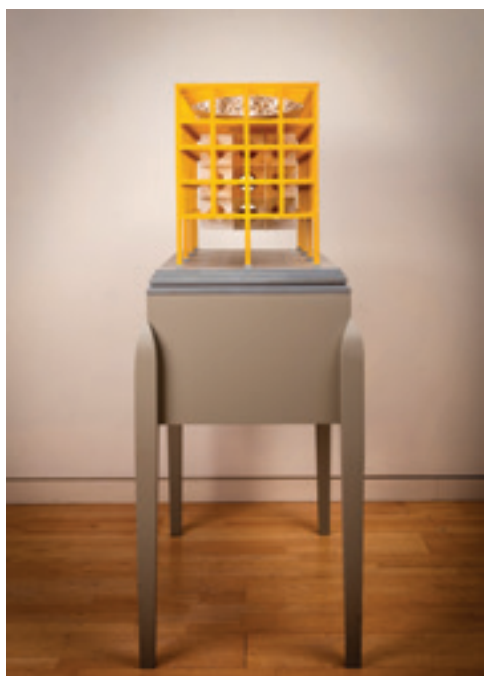


THE CAPTOR CAPTIVE;

2014

W 61cm D 6.5 cm H 30cm

Rope, Timber (KDH), Calico and cotton string, Paper, Beeswax.



A MODEL FOR THE PAVILION OF CO-EXISTENCE;

2013

W 98cm D 52cm H 133cm

Timber (KDH), Arches paper, thread, beeswax and MDF stand.



PASSAGE;
2014
W 145cm D 19.5cm H 37cm
Timber (KDH), Arches paper, sash cord and beeswax.



GRAVITY/WAVE;
2015
W 181cm D 19.5cm H 50cm
Timber (KDH), Galvanised chain, Birch ply, drafting paper and beeswax



TALL TALES;

2014

W 37.5cm 19.5cm H 145cm

Timber (KDH), Rope, Arches paper, beeswax and lead weights.



HOVERARK

2015

W 114cm D 36.5cm H variable (Ark 30cm).

Timber (walnut), Arches paper, thread, wire, beeswax and chain.

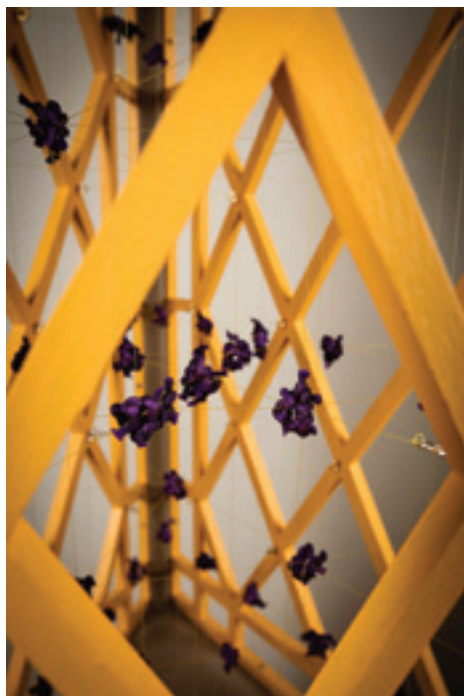


PUNCTUATION;

2015

W 64cm D 56cm H 190

MDF (structural frame), grilles and treillage KDH, Birch ply, thread, string and lead weights.



PUNCTUATION;
2015
W 64cm D 56cm H 190
MDF (structural frame), grilles and treillage KDH, Birch ply,
thread, string and lead weights.

ON NOBBY SEYMOUR'S ETHERIUM

A Reflection on Conversations around the works.

Where do you draw the line? Colloquially we ask this of ourselves and of our significant others, seeking to map – what exactly? Boundaries of morally acceptable behaviours; of shared enthusiasms and adversities; of class (people like us); of educational background... Boundaries, I suggest, of the mental spaces that we create and then inhabit. Coming close to an unfamiliar edge, we may feel uneasy, wary of seeing through other eyes... Changes of perspective can make us queasy...

Architects making art are boundary riders, sniped at from both sides. Those who protest the boundlessness of the creative act fire from one side, those who protest the avoidance of social usefulness take aim from the other. Yet this boundary is not that well defined. The 2015 Turner Prize has been awarded to Assemble, a group of young architects working as urban activists in a deprived area. There have been agonised opinion pieces headlined: "Is this the end of art?" What Assemble have created is a practice that creatively engages the inhabitants of the area in which they have chosen to work in the act of envisaging a better future. Assemble provide the tools with which their clients can guide the changing of their place. Through making models they are making sense, and through that making meaning.

Isn't that what we all try to do? Draw lines from our past, from our own and our family's history in space and project these into the future as the stories that we live. Listen to our anecdotes: "On a dark and stormy night I was driving south from Naracoorte, fearful of falling trees and tree limbs. Rounding a bend my headlamps picked up a scene of horror. A body lay in the road, recently run over by a car. An eye was gouged out, red and gory. Then I looked again, and it was a tree branch oozing red gum...! What the brain makes of what is seen as it searches for a meaning!" Primed to expect an accident, here it created an accident by thus framing what was half seen. Then as more information became available another frame was launched. In my Book *Spatial Intelligence*⁶ I describe the neurology behind this phenomenon and how we construct our worlds as plausible mental spaces. More recently Groh's 'Making Space'⁷ has assembled all the current neurological knowledge about the ways in which our sense receive impulses and transmit them to the centres of our sense making. The more we know though, the further we seem to be from any ability to define the consciousness that enables that sense making... What I am sure of however is that we will not reach that understanding simply through taking thought. For me phenomenology is to neurology as alchemy is to science: a quaint history of fruitless endeavour.

⁶ Schaik, Leon van, 2008 *Spatial Intelligence: New Futures for Architecture*, John Wiley & Sons Chichester

⁷ Jennifer M. Groh, 2014 *Making Space, How the Brain Knows Where Things Are*, Belknap Press Harvard

It doesn't take much to guess that these are the observations that are, driven by conversations with Nobby Seymour. That is his anecdote, not mine. A shared interest in Bachelard's *Poetics of Space* has brought us together and caused me to write about this set of works by Nobby Seymour. But while Nobby sets Bachelard in the chain of phenomenologists, what attracts me to the French historian of science, history being a science rather than a philosophy, is that when Bachelard became obsessed with the differing qualities of space, he found himself bereft of a language for describing the differences. And turned to the acute qualitative descriptions of poets. Just as Nobby turns to Shakespeare to widen the terrain upon which his works should be contemplated. So, as I argue in my book *Practical Poetics*, Bachelard's *Poetics* are really poetries – theories derived from the acute observations contained in poetry.⁸

Now Nobby is the product of a certain kind of classical education. The Western Districts loom large, with their presumptions of continuity with England, Ireland and Scotland. It is no accident that Powell's 'A Dance to the Music of Time'⁹ resonates. Connections are framed through schooling and then revisited and reframed through life experience. Thus escaping the mundane practice of architecture through catering in board rooms and painting flowers he develops a practice in *tromp l'oeil* that takes him around the world, exercising an understanding of just what triggers the mind's eye into seeing intricate details that over-description would kill. And working in New York he

reads Steven Hawking's *A Brief History of Time*.¹⁰ String theory chimes exactly with the impression creating process of painting realistic vistas on walls. Here begins an interest in abstraction well beyond the phenomenal. "What," he muses, embarking on lessons with a mathematician, "would a mathematical understanding of quantum mechanics do to my art?" His studio is littered with formulae. "Do you know", he asks, pointing to the catenary arc of chain in the work *Gravity/Wave*, "that a hanging chain only becomes a parabola when it is loaded?" He points to diagrams that could have come from D'Arcy Wentworth Thompson's 'On Growth and Form'.¹¹ "And this work (*Punctuation*) is based on Pascal's Triangle!"

Nobby and his partner have lived between two tree-lined sunken ovals for 37 years, one in Victoria Gardens (of which Nobby has been a protector) was designed by William Sangster in the 1850s and the other mimicking it in the Princess Gardens adjacent to nearby Housing Commission flats was designed by Tract. (Steve Calhoun, a principal of Tract, was the inaugural President of Friends of Victoria Gardens, with Nobby as Secretary.) These two holes in the ground surface are like the post-holing of anthropologists or biologists seeking to sample a wide terrain by taking material from a grid or frame of locations. From these positions much is posited. How could you live near such interventions into the surface of the earth without speculating on the abstractions of existence? How could you escape the reality of their facture, their occasional flooding?

8 Schaik, van L., 2015 *Practical Poetics in Architecture*, Wiley Chichester

9 All twelve volumes.

10 Hawking, Stephen W Sagan, Carl, 1989 *A Brief History of Time*, Bantam Press London, N.Y, Toronto

11 D'Arcy Wentworth Thompson, Bonner, J.T, 1966 *On Growth and Form* On Growth and Form, Cambridge Uni. Press London (first published 1917)

In these works we have a partial answer to the uses of mathematics in Nobby's art. The threading and weaving through waffles of paper, held within but not touching frames refer to his understanding of general relativity – the time space continuum that is deformed by the masses within it, the passage of anything falling through it... Nobby shows a rectangle of paper with a hole in it. "Boring." Then he inserts a rope through it: a relationship! The iconic origin of this show is the frame of a cube, dangling from the ceiling on a thread. And a cotton-wool cloud, also so hanging. Now bring the cloud into the frame, and a relationship is manifest. Here in these works are nine ways of thinking about material and its presence: how we know – once a line has been drawn – that it exists.

So through this abstraction, Nobby frees himself from his cultural history in space. But culture comes crashing back in on its own parabolas: the pure mathematical wonder of Pascal's Triangle – demonstrated in three dimensions by fishing line plumbed in place by lead weights with each intersection marked by a knot taken from a book of fisherman's knots – needs a frame. And prosaically making this frame, each logical step leads inexorably to a cabinet that references Chippendale chinoiserie in its yellow lattice, in its tip-toe feet; and it talks to William Chamber's Pagoda at Kew as its top knots are concealed behind three curved panels. The work 'Pavilion' sits on a plinth that could have come from Paestum; and that in turn sits on a cabinet reminiscent of a hall table that arcs out its legs in 18th Century cascades, its legs turned to make what is possibly the lightest possible touch to the ground in a mute riposte to Murcutt's famous aphorism.

How are we to look at these works? We are to imagine that we are being driven past them, well distributed in time and space, our driver so intent on the road ahead that he does not see them. We however catch a blur in the corner of our eyes and turn to gaze. The driver is speeding; we are late for a lunch in the Hamptons of Victoria. The corner of a pavilion reels away to the right and we cannot be sure whether we have seen an elaborate post box or a full-scale temple folly. To the left an encased pillow of calico looms up, towering above the cedars of a windbreak, and it is gone. Later at lunch we will recount what we have seen to an incredulous driver but to conspiratorially in-the-know hosts and other chauffeured guests. We have had a glimpse of meaning making at work, both abstract and general and specific and cultural. Thus we are made aware that no matter how we strive to escape it, we are the slaves of our self-constructed mental space. We interpret what we see.

Leon van Schaik AO
*Professor of Architecture (Innovation Chair)
Design Practice Research RMIT*

From his base in Melbourne he has promoted local and international architectural culture, through practice based research. In 2006 he was awarded an Order of Australia for service to Architecture as an academic, practitioner and educator to the community through involvement with a wide range of boards and organisations related to architecture, culture and the arts. He is the author of numerous books his latest publication being 'Spatial Intelligence : New Futures for Architecture'.

NOTES FOR NERDS

As this exhibition relates to spatial perception, I am keen to link it with space as we attempt to understand it post Einstein, rather than the classical concept prior to Einstein. Any incorrect assumptions are all my own work.

A MODEL FOR THE PAVILION OF COEXISTENCE:

These comments are exclusive of the canopy, lenticular in section, intended in full scale as a protection against the weather; in model form its primary purpose is to deflect dust.

In respect of the waffle/grid system below it, the following observations are made.

I. THE PLANAR (paper waffle) component consists of:-

One horizontal vector,

Two vertical vectors (latitudinal and longitudinal)

II. THE LINEAR (yellow grid) component consists of:-

Two horizontal vectors (latitudinal and longitudinal)

One vertical vector

The system is symmetrical when rotated about the x,y and z axis. Rotating it through 90° quadrants about a

Longitudinal linear member

Latitudinal linear member

Vertical linear member

Implies the conditions described in i) and ii) remain constant. The opposing relationship of the planar and linear members, 1:2 and 2:1, remains invariant throughout the rotations about the three separate axes – which seems odd.

NOTE OF GREAT NERDIC INTEREST: In addition to the three conventional x,y,z, axes of space, the 20th century German mathematician Hermann Minkowski introduced another coordinate as a complex number, which is an ordinary number multiplied by the *imaginary unit i*, which provided Einstein with the fourth dimension required for his Theory of Special Relativity¹² and thereby the spacetime continuum.

(*i* is the *imaginary unit*).

The same symmetrical system is employed in the 'Hoverark' waffle, (see Images) except the voids were burnt out – a challenging process.

Google '**A Topological Illogicality**', filmed by James Braund, which documents the construction of 'A Pavilion for Co Existence'. Find it on YouTube: https://youtu.be/RH_SD5tITiw

12 The Universe Within, by Neil Turok; Chapter 'Our Imaginary Reality', p.94

WEFT

It's curious how it happens in life, our present is sometimes invented in our past.

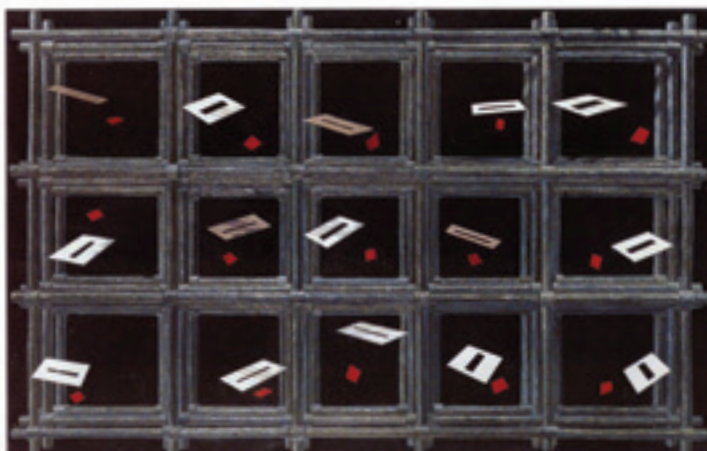
About eighteen years ago, I painted '*...Its Mostly in the Frame...*' which featured a reptile weaving itself through implied voids between gilded oak leaves in an ornate frame.

'Weft' distils the concept and translates it into three dimensions.

Similarly, another painting from the same exhibition¹³ – '*Scaffold Frame*' – touches on the prospect of reading the surface of forms within the implied volume of a frame.



Its Mostly in the Frame



Scaffold Frame

¹³ ...And Now a Few Words from the Frame...; William Mora Galleries, June 2000

TALL TALES

Tall tales indeed! If gravity is the result of mass bending the spacetime continuum, then these two ropes indicate the geodesic,¹⁴ which is the straight line through spacetime representing the longest time between the two end points.

We read the ropes as being parallel but then if we imagine them suspended from a stationary object 50km above we will measure a significant difference in the interval between them at the top and bottom.

A FURTHER REFLECTION ON PARALLEL LINES:¹⁵

In 'The Elements' Euclid listed five obvious truths and five less obvious *postulates*. His fifth postulate states:-

"That if a straight line falling on two straight lines makes the interior angles on the same side less than two right angles, the two straight lines, if produced indefinitely, meet on that side on which angles are less than two right angles."

(Or briefly, if the sum of two interior angles formed by adding a straight line to TWO straight lines equals 180° , then those TWO straight lines will be parallel.)

The existence of this postulate has caused consternation through the ages and has come to be known as The Parallel Postulate. Apparently geometers felt that the preceding proofs and postulates should have precluded the necessity for the final fifth postulate but in fact Euclid, although troubled by it, showed great prescience in its inclusion for it became instrumental in the development of curved space geometry, ultimately providing the surface upon which Einstein could lay out his Theory of General Relativity. In 1823 a Russian mathematician, Nicolai Lobachevsky wrote, in deliberate contradiction of The Parallel Postulate:-

"Through a point C lying outside a line AB there can be drawn more than one line in the plane and not meeting AB".

Try it on a flat sheet of paper – you won't have much luck; then try it on a soccer ball... and thus a new geometry is born, based on negatively and positively curved planes rather than the flat plane employed by Euclid.

In association with the Hungarian, Janos Bolyai, they concluded 'The parallel postulate cannot be derived from the other postulates since (it shows) that the geometry developed from the nine assumptions PLUS the opposite postulate gives a geometry as consistent as Euclid's"¹⁶

Another thing we do know for a fact; Time is passing faster at the top of the rope than it is at the bottom though at this scale the difference is undiscernible. Not so when signals are bounced off satellites, then the GPS in your car, for example, has to incorporate the Theory of General Relativity and its implications into its computations.

14 Einstein's Relativity by Robert Rankin.- 'Reconciling Einstein with Newton' – P.126.

15 I am indebted to Dr Malcolm Cameron and his book 'Heritage Mathematics' for this material. Sadly out of print, were it made freely available, upon request, to any secondary level student the expense would reverse the sad decline of science and mathematics in our nation as we enter the Asian Century.

16 Ibid. Chapter 4 'The Modern Crisis – Einstein's Geometry' p.32

PRESENCE AND BEYOND

If you don't quite grasp my concept of Etherium, which is the unseen medium through which we perceive objects, this particular Artwork may enlighten you. As I previously stated in my comments in *The Implied Volume*, our subconscious reads:-

- I. the occupied volume (in this case the form of padded calico)
 - II. the unoccupied volume, without the calico and within the frame
- as two separate volumes.

In this work I have a rectangular opening in the implied volume, which the etherium continues through and beyond. As previously stated, the etherium does not exist within the implied volume as implied volume is equivalent to unstated form and thus the unseen medium is violated. This applies only when the implied volume is seen in toto and we are reading it as such. Standing up close to a frame and peering through to the beyond, the etherium still exists. It is therefore all in the manner our mind processes the perception and is thus phenomenological.

GRAVITY/WAVE

A chain passes through a serpentine curve without coming into contact. The chain, supported at both ends, forms a catenary curve.

The equation for the curve is resolved using trigonometry and calculus – ironically using a procedure in calculus known as The Chain Rule. The word '*Catenary*' is derived from the Latin for chain.¹⁷

One of the force vectors considered in resolving the equation is the *weight* of the chain; – weight, not mass, – therefore gravity is a factor.

- I. I wonder then, at what value above zero gravity will the chain assume its catenary form?
- II. As the weight of the chain and its tensile limit converge (due to an increased gravitational field), will the chain maintain the same catenary curve?

¹⁷ My Maths guru Will advises me that many people wrongly believe that the equation of a hanging chain is mapped by a quadratic, not a catenary. He goes on to ask "...what physical phenomena in our world would be required to change, for a chain to be mapped out by a quadratic – air Resistance? Tensile forces, or the strength of gravity?

PUNCTUATION

By threading the prismatic implied volume both laterally and vertically and attaching what I call 'knots' at the vertices, a reading of the volume thus becomes tangible. For rigidity I chose an equilateral triangular plan as my Maths mates introduced me to Pascals Triangle. Although its magic is peripheral to the purpose of this particular piece, I settled on a six node triangle which gave me 21 vertices.

The next problem was to provide lateral support for the cross-threading while maintaining maximum visibility. People have seen the trellised screens as an attractive decorative feature but in fact their form is entirely generated by function. A lateral threading at one level renders 18 of the possible 21 knots, while the next level at mid-point above or below, provides the three knots missed in the threading at the previous level.

The project required scrupulous attention to accurate construction. James Hu, who also built the stands for two of the other art works, constructed the skeletal form for '*Punctuation*'. When I came to thread it all together, the lateral and vertical vertices all linked up in the implied volume exactly as drawn on plan.

A CLOSING THOUGHT

There will be people who question whether these mathematical and scientific references are appropriate in any form of art text.

Just as our society is nourished by the embrace of different cultures, so too Art is energised and enriched by entanglement with other disciplines.

Post Einstein, it would appear that the First and Second dimensions exist as Euclidian constructs. Although Time is referred to as the Fourth Dimension, I believe it is inherent in the Third Dimension.

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