

RECALCITRANT

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A SETTING MECHANISM IS DISENGAGED, AS A SMALL COG IS PULLED OUT AND REWOUND UNTIL THE SPRING IS AS COMPACT AS POSSIBLE. AS THE LAST COIL IS WOUND TIGHTLY, AT THE SPIRAL'S OUTER LIP, IT PRODUCES POTENTIAL ENERGY THAT THEN CONCURRENTLY PRESSURES THE SPRING TO START ITS UNWINDING PROCESS. THIS OPERATION PRODUCES KINETIC ENERGY THAT SETS THE DEVICE'S GEARS IN MOTION. THESE GEARS ARE THEN ADJUSTED ON THE HANDLEBARS, MOVING THE CHAIN ALONG FROM ONE SPROCKET TO ANOTHER IN ORDER TO INCREASE THE SPEED OR FORCE OF ITS ENCOMPASSING APPARATUS. COGS MOVE INTO A DIFFERENT POSITION ON THE FREE WHEEL, DRAGGING THE CHAIN WITH THEM AND TRANSMITTING POWER TO THE HIND PART OF THE CONTRAPTION. THE ARM AND LOWER RATCHET OF THE REAR DERAILLEUR PRODUCE TENSION IN THE CHAIN, THE SPRING PULLING THE COG BACKWARDS AT ALL TIMES SO THAT THE MECHANICAL MANACLE DOES NOT COME LOOSE. SPEED IS INCREASED WHEN THE LARGE WHEEL, CONNECTED IN THE TRAIN, SHIFTS INTO CONTACT WITH THE MEDIUM COG AND THEN THIS MEDIUM WHEEL TO A SMALL SPROCKET; EACH OF THE WHEELS BEING PROPORTIONALLY RELATED IN SIZE. WHEN THE LARGE WHEEL TURNS ITS LEVERS PUSH AGAINST THE MEDIUM COG, WHICH IS HALF THE SIZE, SO THAT IT SPINS TWICE AS MANY TIMES AS EACH OF THE LARGER COG'S ROTATIONS. AS A RESULT THE MEDIUM WHEEL MOVES AT DOUBLE THE SPEED OF THE LARGER RATCHET. THIS MEDIUM WHEEL THEN ENGAGES WITH THE SMALLEST'S SPROCKETS, WHICH IS HALF THE SIZE AGAIN OF THE MEDIUM COG, PRODUCING FOUR TIMES THE SPEED. SETTING OFF THE MOVEMENT OF A PENDULUM, ANCHOR AND ESCAPEMENT GEAR FORGES THE REGULATION OF THE APPARATUS' SPEED. THIS CONTROLS THE VELOCITY AT WHICH THE SPRING'S ENERGY IS RELEASED AND MAINTAINS A CONSISTENT MOMENTUM FOR LONG PERIODS OF TIME. A PENDULUM CONSTRUCTED OUT OF A SOLID GOLD ROD, WHICH IS WEIGHTED WITH A GLOBE AT ONE END, IS THE INSTRUMENT'S CENTRAL MECHANISM. GRAVITY KEEPS THE PENDULUM MOVING AND CREATES AN EQUAL SWING IN ONE DIRECTION, AS IT DOES THE OTHER. THIS FORCE PRODUCES A CONSISTENT PERIOD OF ONE SECOND. ATTACHED TO THIS

DEVICE IS A COMPACTED HAND-GEAR TRAIN, EVERY CIRCULAR PIECE OF WHICH IS INTERCONNECTED WITH TOUCHING TINES. SET INSIDE EACH OTHER, EVERY WHEEL TURNS AT A DIFFERENT SPEED AND IS CO-DEPENDENT ON THE OTHERS IN THE TRAIN BECAUSE THEY ARE AFFECTED BY THE SIZE AND ORIENTATION OF THE LINKED RATCHETS. SPROCKETS TRANSMIT MOTION BY LEVERING THE COGS AND WHEN THE SMALLEST WHEEL IS TURNED IN THE OPPOSITE DIRECTION IT SENDS THE MOTION OF THE TRAIN UP TOWARDS THE LARGEST WHEEL: PRODUCING A RESULTANT FORCE THAT IS INCREASED FOURFOLD BUT SIMULTANEOUSLY REDUCES THE SPEED OF THE HANDS TO AN EQUAL EXTANT.¹

He opened his heavy eyelids and was faced with a wall of concrete. When he focused his gaze, the perspective altered and he realised that an object was tilted at a slant to his physical armature. Trying to steady his balance against the forty-five degree angled disc on which he had located his body, he lifted himself up until his sight met a horizon. This logically led him to consider that the spherical shape was hovering above the ground. Gripping the rusted railings at the circumference of the circular frame, he edged toward the upper lip of the structure. He looked across the skyline and saw several other modular geometric shapes that exploded out of the concrete base. Across the expanse of monotonous material there was a mouth to a tunnel. Trailing the vertical face of the underpass, his gaze lifted upwards to what he assumed would be a sky at dusk. Instead a large tubular shape splintered out of the ground above him enshrined by a frozen flow of granite. He found himself confronted with crystalline surfaces that shone metallically in an impossibly dim sunlight.ⁱⁱ

A set of descending cool shallow steps led them into a subterranean realm. Looking up, one followed the shards of light that broke through the gashes in a soft black netting above.

Another became focused on the innards of a silver corrugated industrial vent that had attracted a stream of fibres. These threads, mixed with dust, had collected in a cluster in the flue's outer lip.

Many were absorbed by the way that the secondary layer of wall, the fictional yet destructive inner casing, spilled forwards into the belly of the room. Yet their sensory organs could not take in the creative ruin in its entirety.

It was not a singular entity, due to the fact that it had parasitically coupled itself with the previously ornate space; glimpses of the architrave still visible through the duct tape that attached the detritus to the space.

Yet, it was autonomous, not because it was a discrete entity perfectly contained but due to its resistance towards providing an optical measure to define its elements. Its internal formal aspects could not be registered against each other, its excess simultaneously destructive and creative.ⁱⁱⁱ

As she walked up the smooth arch, road markings lurched up from their dark bedding below her tread.

Her hand glided along the smooth balustrade of the hyperbolic spiral, which had carved out an interior street.

Expansive columns traced and emphasised the verticality of the building, as well as allowing for large panoramic shots of the shopping malls below.

Bays were purposively scattered at the road's outer lip, and around the interior atrium a series of concrete

blocks were woven into each other to fill in

the inner gaps of the spiral's skeleton.

Vents in the ceiling spill down into the the building.

enabled a flow of light to underground surfaces of

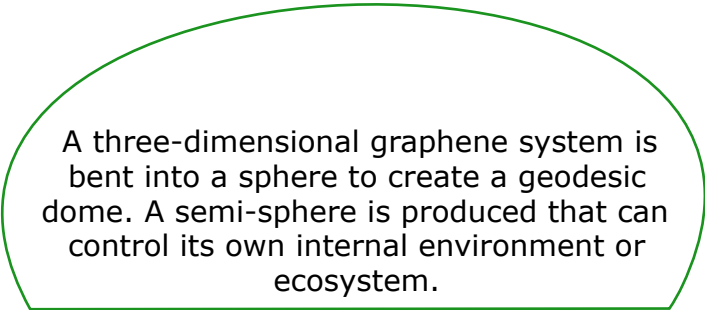
At one intersection, a hypnotic LED screen slightly distorted by the overhanging curve transfixed her.

Digital pixels invited her incorporeal and embodied existence into the screen's virtual depths, leaving her shadow an unwitting performer.^{iv}

Brass vertical
stripes, both
structural
and
ornamental,
lined the
innards of an
octagonal
prism. Nine
spherical
lights
surrounded
his cranium.
He could see
four towers
in the
distance, as
the
polygonal
capsule
ascended.
Turning
inwards, he
glanced at
the industrial
steel

strips either
side of the
mechanical
door. He
felt a
tremor run
through his
body ...
then
another, as
an assault
ensued that
felt like it
carried on
for an
eternity.
Only to be
broken by
the
crescendo
of a titanic
wave, as
he was
suddenly

jolted
backwards
through the
glass frontier.
Translucent
shards
formed
wings, which
outlined a
figure's body,
as
the
conglomeration
of organic and
inanimate
material
glided
towards the
sheets
of
transparent
Plexiglas
below.^v



A three-dimensional graphene system is bent into a sphere to create a geodesic dome. A semi-sphere is produced that can control its own internal environment or ecosystem.

Panning out, the camera glimpses consecutive cupolas and then rows/columns formed from these structures. As the shot expands further outwards, the circumference of these architectures appears to extend itself away at all angles from an unidentifiable centre. Zooming in, the camera-person can decipher that the lattice shells are constructed out of a network of great circles. These cyclical shapes intersect making strong triangular elements that give the structure rigidity. Both surface and structure simultaneously produce these hermetically sealed and infinite environments.

Spontaneously extracellular and intracellular signals coordinate to maintain skeletal homeostasis. An automatic process is triggered that responds temporarily to spatial requirements. Coded specifications are sent to cells in the affected area. These cells then start to correlate the resorption of cellular tissue with its formation: osteoclasts resorb bone and osteoblasts form a newly synthesised matrix. This all occurs over a period of about four human months. This highly complex system climaxes in the sealing of a rupture, which prevents structural failure and maintains the physical integrity of its host vertebrate.

Floodlights bleach the stadium.

His feet, in contrast, are shrouded in darkness and blend into his shadow on the grass. Looking up he finds himself amidst a colosseum, its roof constructed out of a web of cables that are covered by translucent Plexiglass sheets. These material flanks are suspended from poles and steel ropes. Plexiglass so thin that it barely transposes its materiality on the spot-lit figure below. Sensors responding to the fading light automatically trigger the steel ropes to glide the skin across the top of the building, casting him into an amniotic sack. Sealed within a dark frame, his eyes take a while to adjust to the extreme change in light levels. Glancing upwards he begins to make out the outlines of cables, which appear only to prevent the structure from collapsing in on him by maintaining a productive tension with each other. The frame's outer fabric manages to continue its static dance by creating a little more pressure on the textile ceiling's inner side. This pneumatic structure will keep him ventilated until its closing-down mechanisms, which are programmed to occasionally relax their carefully crafted balance, are put into motion.

A clinical space has been denatured through the application of crude and blunt splashes of blue paint.

Walls are not the only disrupted sites, as all available aural senses are infiltrated by vocal resonations.

Ripples of noise are hosted and generated by a human-scaled structure in the centre of a cube.

One member's gaze spans the panoramic glass front and locates several feet attached to the bodies of unwitting performers, breaking up the grey horizon above.

Simultaneously, **another** entity exits the warm glow of the cobbled street and is swallowed up by a parallel space.

Skin dissolving under bright lights, **it** finds itself confronted with substantial, yet intricately composed, metal structures.

Eyes scrolling down the objects, **it** notices that the base of each of these alien sculptures is worked into the main body of the architectural compositions.

Several **others** are absorbed by the subterranean realm below and the gestural sexual organisms that bleed into a space of peeping toms.

Emerging from the basement, a **few** become aware of the architecture that houses them.

They pass underneath an archway that in an act of inversion is framing the building from within: its skeleton tunnelling the viewer's focus toward the hallway that houses its structure.

Another is immersed in a peripheral conversation situated in a square.

Absorption in the filmic envelopes of the broken dialogue and images enables **it** to seamlessly traverse the two locales.

Sculptures explode out of the walls and transform the architecture by claiming further dimensions of its space: blue fronds arch **their** way towards one body, as the other is captured in light projections.

One organism felt that it was making a transition into an immaterial realm and believed that it was becoming connected to a variety of spaces and timeframes: plugged into a system of nodes but without a navigational compass.

Most speculated on the probability that they were encountering the performative or active writing of a program, in which a series of threads had been woven together to create a mesh, as opposed to a narrative.^{vi}

A tightly packed hay bale sits in a barn exposed on all sides to the elements and as night falls a heavy fog descends on the field. Even after the hay is cut, the cells in the hay remain active, respiring and converting glucose into carbon dioxide, water and energy. As dawn rises, dew has settled into the abundant natural material. Moisture levels start to increase and over a period of time they reach above fifteen percent, in human measurement. Now at their optimum temperature for reproduction, the mesophilic bacteria in the hay bale start to multiply, as there is enough moisture present for them to dissolve and absorb nutrients. Local populations only need to perform binary fission (simple splitting) and double in size in ten human minutes. These active aerobic cells are catabolising the glucose in the moist hay until they are completely oxidised: converting the glucose into carbon dioxide, water and energy. Heat is released as a result of the hay plant's and the bacteria's metabolic procedures, which causes the internal temperature of the bale to increase. During a period of time relative to these metabolic transformations, the bale releases hot water molecules into the denser cooler air trapped in the layers of hay above. Latterly, mould has started to grow and spreads across the stack of bales. As the population continues to multiply the internal temperature of the stack rises and the original moisture levels start to deplete. At this point a new type of exothermic (heat resistant) bacteria start a process of chemical change that rapidly, to any external viewer, increases temperatures to the point of spontaneous combustion. The haystack catches fire.^{vii}

Transparent sheets gave a panoramic view of the aircraft moving outside. Shuffling in her chair, in order to correct her posture, her attention is caught by the unforgiving plastic beneath her legs and she becomes conscious of the sweat collecting beneath her thighs. Above her cranium she observes a cross-section of lattice beams that appear industrial in their utilitarian starkness. Reverberations of a large vehicle rippled their way through her body but her focus remained on the steady toe caps of her shoes, which were just touching the yellow line. As the thundering echoes grew nearer, her eyes flickered towards the grid of rails below. Her gaze bounces off the steel and then spins upwards to follow the flow of the semi-circular tunnel and its polished white tiles. Her eyes continue to trace the contours of the monochrome tube, which is interjected with black loops that highlight the vector's vast dimensions. Vision is terminated when it reaches the tail of the tunnel and dissolves into the black mouth to her right. Suitcases are mechanically ejected from a black hole and travel along a stream of fabric. She could taste and smell recently deployed sanitiser. A rush of wind came pursued by screeching sounds, as metal wheels hit the steel frame of the rails.

Two towering
cylindrical poles,
which were
stabilised by a
skeletal frame at
their base, flanked
him. A large block of
sand and sea had
been pasted onto
the rectangular
board. Bending his
neck over the wall,
he located a fork of
Tarmac below, the
white markings of
which had merged
with the flowing
traffic underneath
the flyover. His
hands absorbed the
heat from the rough
surface beneath
their skin and UV
rays lit up the side of
his face, spreading a
wave of heat across
his left cheek.

In comparison, the
right planes of his
head were damp
and cold as the
sharp breeze
caught his
extremities.
Ducking below the
barrier he found
shelter and
intended to shut his
eyes when the very
wall that he had
sought to break the
wind funnelled a
huge gush of wind
toward his exposed
body. His hair was
thrown up, as
foghorns echoed
across the reflective
surfaces. Ears
ringing and hair
tangled, he looked
up toward an
onslaught of
encroaching and
blinding headlights.

A

grid

structure of

cobbled tiles and sleek slabs

pass beneath his footsteps until he comes to a halt.

He hears the chatter of many human voices, the **rustle** of newspapers and the tumble and rattle of rubbish against the floor. Splitting the audio landscape is the occasional **screeching** call of a seagull. Looking up, he faces a large and seemingly industrial edifice: a building that looks like it had been inverted, with its innards on the **outside**.

A structure turned inside out, with its inner workings of pipes, **tubes** and escalators spanning its facade. Scaffolding coated the structure, which would make it look like the architecture's construction had been **deserted** halfway through the process if it wasn't for the intentionally brightly coloured tubes also spanning its **exterior**.^{viii}

Ample boulevards enabled her to manoeuvre the machine without causing damage to any of the buildings that ran parallel and perpendicular to her trajectory. She surveyed the roads, which acted as her airways, but could only see the heads of those palm trees that could extend their fanning leaves above the heat mist rising from the Tarmac. The fronds closest to the propellers' circumference were bending from the force of the wind. Ear defenders did not quite protect her hearing from the noise created by the motion of the blades cutting the air overhead. She realigned her grip on the joystick so that she could indulge in the feeling of the leather underneath the skin of her hands. Odours from the craft's recent spray of fresh polish, seeped into her nostrils and warm rays reflected off the glass edifices to meet the side of her face. If she chose to lean the apparatus slightly to the left or the right then the propellers would tear through the material membrane of the ever so slightly swaying towers.

Bacillus pseudofirmus and *Sporosarcina pasteurii* are growing naturally in a volcanic lake that provides extremely alkaline, when the human pH scale is referenced, conditions. These bacteria are able to survive for a staggering two hundred years, in the sense of a human dating system, without oxygen or food. Across the Atlantic, in terms of the human designation of space and place, a crack has started to arise deep in one strut of a concrete frame. Air, heavy with water particles, starts to seep through the tributary hairline fractures that feed into the main chasm. Activated when they come into contact with water, alkaline bacteria are triggered into action. Simultaneously, their food source that had also been held dormant in biodegradable capsules is released. *Bacillus pseudofirmus* and *Sporosarcina pasteurii* then feed on the calcium lactate and by metabolising this food source they join the calcium with the carbonate to form limestone. They seal the cracks with limestone deposit as they consume. The chasm is filled.

Entering through a revolving door of glass, s/he
imagined the whole front was a metaphor in
transparency.

*Ironically, the materiality itself could not care less about
this intellectual designation.*

S/He listened to the soles of h/er/is heels ringing out as
they **chimed** with the marble floor. H/er/is gaze was
drawn to the seductively slick wooden curvature of the
counter; concentration distracted s/he tripped over a

s - h - a - t - t - e - r - e - d

section of the marble. Looking down at the ground
where h/er/is ankle had been caught, s/he noticed
wooden struts exploding out of the polished floor. Added
to this violent foundation were crates and wires that
balanced a cloth on their upper tips. There were many
sharp edges exposed by this recalcitrant structure, and
degraded materials such as tarpaulin and balsa wood
covered surfaces at the top. S/he wondered whether
this was an art installation, as the corporation were
famous for their self-curated collection but s/he also
questioned whether they were actually conscious of its
existence. A triangular beam lay discarded on the floor.^{ix}

Data packet **000111100** is instantaneously sequenced and split off from the rest of its file. A series of code is then simultaneously dispersed through a multitude of vectors in order to maximise the efficiency of the space and time allocated to data airways. **000111100** leaves the virtual honeycomb structure and travels on one of the larger bandwidth highways. All traffic surfing on **000111100**'S wave is flowing at nano speed but those that are on other lanes are travelling at varying velocities through the air due to different levels of crowding or blockage. This could result in other components of **000111100**'S collective file being nano-seconds behind it, which would hold up assemblage at the other end. Gliding across radio waves, through buildings, flesh and trees, **000111100** reaches its data farm in the time it takes for a human eye to blink. It enters one of the three racks of servers deployed by the corporation to store information in the data farm. Packet **000111100** is then united with the rest of the code when each piece of indexed data is placed back into its original sequence. Existing in a cloud, the file is continuously

split up, sent on

a variety of routes

and re-calibrated on different devices throughout the network.

This digital matrix is organised through the human notion of time zones and twenty-four hour days, which creates an efficient interconnected and shared **digital** motorway system, as well as the possible capacity for an infinite network of data.

AN UNSUPERVISED 'A PRIORI' ALGORITHM DEPLOYS ITS MATHEMATICAL PROCESS TO SYSTEMATICALLY REDUCE THE REDUNDANCY OF UNLABELLED INPUT DATA.

SIMULTANEOUSLY, '**K-MEANS**', ALSO UNSUPERVISED, DEDUCES STRUCTURES PRESENT IN INPUT DATA TO ORGANISE THEM INTO GROUPINGS BASED ON SIMILARITY. 'K-NEAREST NEIGHBOUR' BUILDS UP DATABASES OF FILES WITH WHICH TO COMPARE NEW DATA AND MATCH OR MAKE A PREDICTION BASED ON THIS INFORMATION. A RELATIONAL METHOD THAT IS FAR MORE EFFICIENT, IN TERMS OF SPEED AND ACCURACY, THAN HUMAN MEMORY.

WHEN THOUSANDS OR MORE OF THESE INTERCONNECTED ALGORITHMS ARE DEPLOYED SIMULTANEOUSLY THEY FORGE NEW SPACES AND TIMEFRAMES: AN AUTOMATED PROCESS THAT PRODUCES TEMPORAL WORLDS OF LOGIC.

Tracing the inner surfaces of the building, a series of
linear configurations forge super-adjacent dimensions
that violently

destroy the existing

architecture.

An ellipsis is drafted onto the walls and cuts through
the architectural shell.

Structural surfaces begin to crumble, spewing
their

contents

of

brick and mortar onto the concrete floor.

Shapes pierce through to the exterior realm

beyond,

opening up *multiple*
dimensions.

These forms become convex and re-enter the space,
producing more and more space through their
permeation of existing parameters.

Negative space becomes physical.*

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- ⁱ O'Brien, Flann, *The Third Policeman*, London: Harper Perennial, 2007
- ⁱⁱ 'The Brutalist Playground', by Assemble and Simon Terrill (London: Royal Institute of British Architecture, 2015)
- ⁱⁱⁱ 'In Between', Thomas Hirschhorn (London: South London Gallery, 2015)
- ^{iv} Joseph-Lester, Jaspar, *Revisiting the Bonaventure Hotel*, London: Copy Press Ltd., 2008
- ^v 'In the Line of Fire', Wolfgang Peterson (Culver City: Columbia Pictures, 1993)
- ^{vi} 'The Boys the Girls and the Political', cur. by Hana Noorali and Lynton Talbot (London: Lisson Gallery, 2015)
- ^{vii} Nicol, Hugh, *Microbes by the Millions*, Middlesex: Penguin Books Ltd. | Pelican Special, 1939
- ^{viii} Nuttgens, Patrick, *The Story of Architecture: Second Edition*, London: Phaidon Press Limited; New York: Phaidon Press Inc., 1997
- ^{ix} Robin Adele Greeley, 'The Logic of Disorder: The Sculptural Materialism of Abraham Cruzvillegas', October, 151 (2015), Cambridge: The MIT Press, 78–107
- ^x 'Impingements', Gary Woodley (London: lauregenillard, 2015)

