

## WORKS + WORDS 2022

### CONTORTED CUMULUS

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#### cumulus

1650s, "a heap", from Latin *cumulus* "a heap, pile, mass, surplus," from PIE *\*ku-m-olo-*, suffixed shortened form of root *\*keue-* "to swell." Meteorological use for "rounded mass of clouds, snowy white at the top with a darker, horizontal base" is attested by 1803.

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### ACCUMULATING ROOTS

The root system of the world's oldest tree, Old Tjikko, a Norway Spruce situated in Sweden, is estimated to be 9500 years old. The oldest living individual tree, Methusaleh, a twisted and distorted Bristlecone Pine growing in California, is estimated to be 4850 years of age. Ironically, the oldest recorded tree, Prometheus, was cut down in 1965 only to establish its age, which was no less than 4900 years<sup>1</sup>. The trees in this account have names and characters, often situated at faraway outposts - secret mythological locations known only to the few, as lone rangers or witnesses of the world's comings and goings. However, Old Tjikko, a character amongst many, is part of a vast green belt of conifers, stretching its green lungs 7000 km across from Norway to Siberia, and is as such only a small component of one of the most important organisms of the Northern Hemisphere<sup>2</sup>. Trees represent a bridge between geology and humans, through their temporality and through their materiality. Trees and other photosynthetic lifeforms make the atmosphere, their decomposed bodies lay ground for other lifeforms to evolve, and their mineralized remains help shaping the planet's crust. Trees are the robust representative of this entangled development<sup>3</sup>. Their bodies mirroring our own, both in terms of scale and composition.

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<sup>1</sup> Both Carbon-14 dating, and Dendrochronology are well established methods for accessing knowledge of the past. In addition to being used as a scientific dating method in archeology and history, the basis of dendrochronology is utilized in the study of the past and present climate, in the study of hydrological phenomena like floods and in the study of glacier movements. Luckily technologies like the CT scan, offer novel non-invasive methods of tree-ring dating.

<sup>2</sup> As expressed by Professor Emeritus of Mycology, Henning Knudsen in 'Old Tjikko'. *Nikolai Howalt, 'Old Tjikko', Fabrikbooks (2019)*

<sup>3</sup> Emanuele Coccia writes extensively on this topic in *The Life of Plants: A Metaphysics of Mixture (2018)*

This project takes as its starting point an arboretum outside Copenhagen, whose dense and entangled state highly contrasts its initial scientific purpose, which was to categorize, maintain and keep order of taxonomies. Meticulously fixed plaques, accounting the deep-rooted nomenclature of Carl von Linné, renders visible the anterior ambition. However, the invasive bramble and rhododendron tend to suffocate surrounding plants and ever since its scientific abandonment in 2007 the deterioration of the arboretum seems inevitable. Contorted trees and shrubs mix and intertwine in an ever-messier melee, and while individual trees embody ideals of knowledge, the accumulated forest suggests chaos and decay. In our case study, the arboretum becomes a wondrous model for a historically rooted, yet abandoned, and misshapen landscape where city, land, nature, and culture can never be distinguished.

Trees are protagonists of the living world, as both singular upright beings, and as great networks capable of communication and caring, yet large parts of the tree is dead tissue. In its hybrid form, where dead parts of the tree paradoxically become the strength and the core of the living body<sup>4</sup>, the tree is both young and old, dead, and living, thus presenting a monstrous figure to which we devote considerable interest<sup>5</sup>. In the arboretum, noteworthy specimens of the Mammoth tree (*Sequoiadendron giganteum*) and the Chinese Water Spruce (*Metasequoia glyptostroboides*) has caught our attention. The Mammoth tree, well known for its grandeur and unusually long lifespan, can in its native California grow for millennia. As for the Water Spruce, the species were long believed to be extinct, only known through petrification, and fossils remains, yet a live specimen was discovered in 1944, and is in scientific circles often referred to as a living fossil. These specimens present interesting anachronistic figures, models for inquiring concepts of non-linear time.

## CUMULUS AND OTHER CLOUDS

Seeking to capture snapshots of these young-old specimens, we used state-of-the-art LIDAR-scanning, to produce 3D point cloud models of the trees and their environment. As with all

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<sup>4</sup> Elegantly unfolded by Emanuele Coccia in *'Wooden Life', Formafantasma: Cambio*. Serpentine Koenig books, 2020

<sup>5</sup> The term 'monstrous' has interested us for some time and has come into consideration following several related concepts like artificiality, assemblage, interspace, diagrams, and topology. The concept is drawn from Marcel Proust, through Bruno Latour, Donna Haraway and Timothy Morton.

photographic media and other sight-accelerating technologies, the 3D-scanner contributes to our cyborg attributes, enhancing our ability to perceive the world. The FARO scanner employed, mounted on a static tripod (its point-of view), renders a 360-degree photographic image, creating a stage or scene, which in turn can be altered, animated, and stitched together in the computer software. Characteristically, the digital aesthetics is that of perforated skin or a cloud of points, where surfaces are permeable and elusive. Although embedding extraordinary precision and range, the 3D scan's ephemeral point cloud does not resemble the world as we know or see it. Are we then able to evoke new natures, or do we see nature with different or new eyes?<sup>6</sup> Challenging the objective accuracy of the digital tool, we seek to address this spatial permeability with an artistic aim, and we ask how these types of images relate to the more traditional of the architect's media, such as the drawing, the photograph, and the model, and perhaps to the more atypical media, like virtual- and augmented reality.

## SOFT AMBIGUITY

A single tree is the pivotal point in Canadian artist Char Davis' interactive Virtual Reality (VR) work 'Osmose'. Along with 'Ephémère', the two installations present an impressive and pioneering body of work within the oeuvre of immersive art, developed during the mid-nineties. Davis created 360-degrees digital arenas to convey ephemeral landscapes with intended *painterly aesthetics*<sup>7</sup>, into which participants are immersed through the interface of VR-goggles and a vest containing an interactive breath-and-balance device. Davis seeks to blend realms of foreground, middle ground, and background into a spatial experience of soft ambiguity, transparent and slightly out of focus. The immersive environments advocate a bodily sensibility to the material world through awareness, and slowness, allowing for marvel as the *immersant* drifts through permeable celestial bodies, plant seeds, tree roots and fleeting waterbodies. She describes her intent of 'amplifying the sensations and emotions of being conscious, embodied, and mortal, of heightening sensations of the body as the

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<sup>6</sup> Prof. Christophe Girod, Chair of Landscape Architecture at ETH Zürich describes a cloudist revolution: 'The degree of accuracy and potential interplay of a design embedded in a point cloud model is impressive: it not only changes our gaze, but also transforms the material, historical and spatial meanings of the landscape we are working in.-, "Cloudism": Towards a New Culture of Making Landscapes', *Routledge Research Companion to Landscape Architecture*, eds. Ellen Braae & Henriette Steiner, 2019

<sup>7</sup> 'Osmose and Ephémère avoid the hard-edged mimetic realism toward which most VR aspires, instead relying on semiabstract semitransparent figuration to create an ambiguous, evocative painterly aesthetic that actively engages the participant's imagination in the Work'. Char Davis, '*Landscapes of Ephemeral Embrace*' p. 197, Ph.D. thesis, 2005

site of consciousness occupying space'<sup>8</sup>. While the term landscape derives from a painterly tradition, as something we frame and look upon from a distance, Davis' contribution, directing our gaze towards a situated spatial immersion, seems more relevant than ever<sup>9</sup>. Today, Davis' legacy is perhaps most clearly manifest in the mixed reality works by contemporary artist Jakob Kudsk Steensen, in his endeavors to rewild the digital space while representing and presenting new natures in an ambiguous, yet high resolution<sup>10</sup>.

In the photographic realm, representing 'nature' has always been a key topic. In the early days of photography, while attempting to master the chemical processes of fixatives and sun light, the technology was praised for nature's ability to bypass the painter's subjective interpretation (i.e., in landscape painting) to render itself visible through natural processes. These early 'imprints of nature'<sup>11</sup> or so-called objective images, relates to, what in recent decades seems to be an obsession with photo realism, a fixation certainly traceable in architectural codes of representation. With the speedy advent of image generating software<sup>12</sup>, or so-called AI image making, it is pressing to direct a new attention to photographic media. We are neither in search of hyperrealism, nor anxious about the 'artificial' in artificial intelligence (as we have learned, we are already cyborgs), rather the very speediness of advanced pattern recognition poses questions concerning the creative process in architectural production. In Contorted Cumulus gaps and interspace are crucial. As such, it is no wonder the ambiguous and indefinite environments of Davis and Kudsk resonate with us, more importantly, the distinct slowness embedded in their approach seems meaningful to accentuate.

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<sup>8</sup> Ibid. p. 198

<sup>9</sup> Davis' artistic practice include simultaneous work on her land in Quebec, a natural reserve she calls the Reverie. Along with her work on natural preservation, she is currently developing an immense digital forest, based on this land. She asserts that her VR works are not intended as escapist virtual worlds, rather she seek to remind people of their biological, spiritual, and psychological connections to the natural environment.

<sup>10</sup> Notably in his VR work *BERL-BERL* (2021) and the Serpentine AR commission *The Deep Listener* (2019)

<sup>11</sup> At the time of proto-photography, speculations of the nature of Nature were ubiquitous. The earliest photographs were contact prints of leaves and flowers, and in the 1830's Daguerre spoke of 'the spontaneous reproduction of the images of nature received in the camera obscura', delivering 'effects of nature', 'a perfect image of nature' and 'the imprint of nature'. He describes how 'the Daguerreotypes is not merely an instrument which serves to draw nature; on the contrary it is a chemical and physical process which gives her the power to reproduce herself'. Geoffrey Batchen, *Burning with Desire: The Conception of Photography* p.66 , MIT Press, 1997

<sup>12</sup> I.e. software like Midjourney and Dall-E

## IMMERSION

In the works of Char Davis, the divide between the ‘artificial’ and the ‘natural’, is mediated through the act of breathing. As the work refuses a ‘disembodied eye and probing hand’, balance and breathing are the means of navigation, allowing for movement and agency while traversing the enveloping landscapes. To immerse means to submerge into liquid, in this case a fluid space, where kinesthetics awareness and interaction blend borders between subject, object and environment. Science has made every effort to slice and separate, classify, and distinguish elements from each other, yet recent strive for connectedness in the Anthropocene condition, has brought about numerous new concepts and hybridizations. For Emanuele Coccia, not only is the subject and its environment totally mixed, rather everything exists only through the immanent rhythm of a shared *Breath* made possible in the Atmosphere. To Coccia, immersion<sup>13</sup> is not a ‘temporary condition of a body in another body. Nor is it a relation between two bodies’<sup>14</sup>, rather ‘To breath means to be plunged into a medium that penetrates us in the same way and with the same intensity as we penetrate it’<sup>15</sup>. In Coccia’s topological manifest *everything is in everything*, and everything is always becoming. ‘The plant, then, is the paradigm of immersion’, he declares<sup>16</sup>. To Coccia, the plant is not only key to the upholding of the Atmosphere and the all-encompassing *Breath*, furthermore, in its seed every thinkable actualization in the world is already immanent. These concepts of immersion present mind-tingling philosophical openings towards processes of transformation, where time and relation, not category, are the new guidelines for a *modus operandi*.

## FLESH, WOOD, AND DIGITS

Central to our project is the exploration of how to combine physical material and digital layers in architectural models, enabling immersive experiences of augmented reality (AR) - mixed articulations combining blocks of solid wood (resonating with the species found in the arboretum) with ephemeral point clouds (captured in the arboretum). A characteristic trait of the 3D scanning is that it only captures visible surfaces. Yet, while panning through the digital model, the backside of

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<sup>13</sup> Immersion translates to ‘Indlejrning’ in the Danish version, ‘*Planternes liv - Blandingens metafysik*’ (2021)

<sup>14</sup> Emanuele Coccia, *The Life of Plants, A Metaphysics of Mixture* p.67, Polity Press, 2019.

<sup>15</sup> Ibid. p. 53

<sup>16</sup> Ibid. p. 53

the surface can be accessed, as an impression of the front. In our point cloud models, these non-surfaces recall that of the tree's bark, a threshold between the concave and convex - exterior and interior, informing the morphology of CNC milled wooden landscape models. The joint output is a time-based, interactive experience, accessed through the interface of mobile screens, affording spatial agency and bodily movement. The interconnection of sibling morphology is sought to articulate potential counterpoints in the physical and digital models, as we aim to express the entanglement of tactile matter and the elusive yet detailed cumulus of the tree's distorted root and bark. The laminar presentation recalls the ambiguity of both ephemeral and enduring qualities of trees, as monstrous accumulated compositions, mirroring our own bodies.

## ARCHITECTURAL CODE

In her essay series on trees in architectural drawing, Sylvia Lavin outlines how in the 18<sup>th</sup> century 'trees became unavoidable material and symbolic pressure points for architects that had to be either deliberately drawn or erased from the world, but that were never native to architectural systems of representation', yet 'when trees moved into architecture's linear dictionary they disturbed its conventions, generating anomalies in the field that make possible new knowledge of how architecture once managed, and might yet still manage, the surface of the earth'<sup>17</sup>. As with these early quakes in the foundation of architectural representation, the ongoing discourse of interspecies connectedness, such as those of trees, fungi, and bacteria, spur new motifs in architecture and mapping<sup>18</sup>. *Contorted Cumulus* is a prototype for such mapping, and pursue a certain type of entanglement, where we speculate on how material space can communicate with digital space beyond the conventional interfaces. Through an aesthetic approach to new digital technologies, we investigate their scope of representation and creation of architectural space, and how extended reality can accumulate meaning in matter.

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<sup>17</sup> Sylvia Lavin "Trees Move In", *Log 49*, p.68, Anyone Corp, 2020

<sup>18</sup> See for example the works of Frédérique Aït-Touati, Alexandra Arènes, & Axelle Grégoire, "Terra Forma", in *Feral Atlas* <https://feralatlantlas.org/>, ed. Anna L. Tsing et al.