Arhitektura, raziskave
/ Architecture, Research

Korespondence
/ Correspondences

AR

KAZALO
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Narava je svetišče, kjer živi stebrí
zašepetajo včasih zmedene glasove;
tam človek hodi mimo skoz gozdove
simbolov, ki vanj zro z domačimi očmi.

Kot se podaljšani odmevi sred daljave
stopijo v temačno in globoko enost,
prostrano kakor noč in kakor čudna jasnost,
tako soglašajo barve, zvoki in vonjave.

So vonji sveži, kot otroška polt umiti,
mili kot oboa, zeleni kot prerije,
– in drugi, gnili in bogati, zmagoviti,

ki derejo povsod, kjer se neskončnost skrije,
kot vonji smol, kadila, ambre, mošusa,
ki pôjejo zanosnost čutov in duha.

KORESPONDENCE
/   CORRESPONDENCES

All nature is a temple whose living pillars seem
At times to babble confused words, half understood;
Man journey's there through an obscure symbolic wood,
Aware of eyes that peep with a familiar gleam.

Like endless echoes that from somewhere far beyond
Mingling, in one profound and cryptic whole unites,
Vast as the twin immensities of night and light,
So do all colors, sounds, and perfumes correspond.

Perfumes there are as fresh as children's bodies, springs
Of fragrance sweet as oboes, green and full of peace
As prairies. And there are others, proud, corrupt, intense,

Having the all-pervasiveness of infinite things,
Like a burning spice or resin, musk or ambergris,
That sing the raptures of the spirit and the sense.

Charles Baudelaire

/   **EDITOR'S FOREWORD**

Correspondences shape our perception of experience through reciprocal actions; they bridge distances as whispers and echoes, as spontaneous reactions and resonant associations processed through the agency of time. One corresponds with one's self. Archaically, letters are written. We call, we send e-mails, texts, and truncated thoughts—tweets—delivered as digital shouts while impatiently we wait for plethoric responses, connectivity and agreement. Words and images entropically collapse upon each other; experience is distanced from reality by the architecture of virtual transmutations. Once cherished as a means for repose and reflection, time is reduced to an intrusive interloper, attacking the technologies of convenience.

A contemporaneous action is valuated by its perceived correspondence with analogues held within the interpretive frame of the past; a past action, event or artifact is valuated through its correspondence with the irrevocable presence—the politic—of becoming.

Entwined within the intercourse of human correspondences is the less overt interface between temporal distances shaped by the artifacts of culture - *things.* Now, for better or for worse, the global matrix of information supporting once identifiable cultural signs upends traditional taxonomies and hierarchies. The correspondences between things—at times tacit, anarchic—are resonant documents of life lived within the ever-morphing world of our experiences.

Perhaps no one better foretold the manifesting schisms in classical analogs—*correspondences*—than Charles Baudelaire. In the first chapter of his luminous book, *La Folie Baudelaire,* Roberto Calasso interprets Baudelaire's phrase the "natural obscurity of things" as the most common perception, and to "tackle" the "commonest" one must embrace *analogy* as the means "to access the knowledge 'which sheds a magical and supernatural light on the natural obscurity of things." Calasso infers that for Baudelaire, analogy was a science, "perhaps even, the supreme science, if the imagination is the 'queen of facilities." Quoting from a letter written by Baudelaire to Alphonse Toussenel, he continues "...the imagination is the most scientific of the facilities, because it is the only one to understand the universal analogy, or that which a mystical religion calls *correspondence.*" Baudelaire refers to one's correspondence with the

world: "...everything, form, movement, number, color, scent, be it in the spiritual world or the natural sphere, is meaningful, reciprocal, converted, and *corresponding*"; Calasso concludes: "This last is a revealing word. *Analogy* and *correspondences* are, for Baudelaire, equivalent terms."

Before Baudelaire, analogy was defined via the classical "canons", wherein correspondences were limited to regulated "systems" of interpretation. With Baudelaire these systems were jettisoned; the canonic rules were abandoned in favor of more anarchic, non-systematized, modes of correspondence. Baudelaire's prophetic verse has yet to settle; our correspondences with the world continue to be shaped by the irrepressible pace of modernity.

The editors of *AR/Architecture Research* 2018 have sought writings that engage the science of the imagination through a body of correspondences within the disciplines of architecture and art. Content ranges from neurophenomenolgy to the politics of sight, to the transferences between artist and architect and the inevitable influences of these entwinements within the academy. AR 2018's conceptual core is bound by the exploration, nature and diversity of contemporary *correspondences*.

Paul O Robinson
/   Guest Editor 2018

1

Izraz korespondence ima v tem uvodniku, kot tudi v naslovu te tematske izdaje revije, dva pomena: izraža ujemanje in komunikacijo. (Op. prev.)

2

Vsi citati so prevedeni iz angleščine. (Op. prev.)

/   **UVODNIK**

Korespondence[1] oblikujejo naše dojemanje izkušenj preko vzajemnih dejanj; premoščajo razdalje kot šepetanja in odmevi, kot spontani odzivi in odzvočne asociacije, ki jih predela delovanje časa. Korespondiramo sami s sabo. Lahko se poslužimo arhaičnega medija, pisma. Kličemo, pošiljamo elektronsko pošto, sms-e in prisekane misli – tvite, ki so dostavljeni kot digitalni vzkliki, medtem ko nestrpno čakamo na plaz odzivov, na povezanost in strinjanje. Besede in slike se entropično sesedajo ena na drugo, medtem ko arhitektura virtualnih transmutacij izkušnjo oddaljuje od resničnosti. Čas, nekoč cenjen, saj je omogočal počitek in razmislek, je le še nadležen vsiljivec, ki napada tehnologije udobja.

Sočasno dejanje je ovrednoteno na podlagi svoje zaznane korespondence z analognimi dejanji znotraj interpretativnega okvira preteklosti; preteklo dejanje, dogodek ali artefakt je ovrednoten preko svoje korespondence z dokončno prisotnostjo – s političnostjo – postajanja.

Z medčloveškimi korespondencami se prepletajo manj očitne povezave med časovnimi razdaljami, ki jih oblikujejo kulturni artefakti – *stvari*. Danes, najsi bodo posledice dobre ali slabe, globalna informacijska matrika, ki podpira nekoč določljive kulturne znake (in analogije), obrača tradicionalne taksonomije in hierarhije na glavo. Korespondence med stvarmi (včasih tihe, anarhične) so odzvočni dokumenti življenja znotraj nenehno preoblikujočega se sveta naših izkušenj.

Nakazujočega se razpada klasičnih analogij – *korespondenc* – morda nihče ni napovedal bolje kot Charles Baudelaire. V prvem poglavju svojega sijajnega dela La Folie Baudelaire italijanski pisec Roberto Calasso Baudelairovo besedno zvezo »naravna zastrtost stvari«[2] interpretira kot najobičajnejšo zaznavo; in da bi se z »najobičajnejšim« lahko »spopadli«, moramo sprejeti *analogijo* kot orodje za »dostopanje do vedenja, 'ki naravno zastrtost stvari osvetli s čarobno in nadnaravno lučjo'«. Calasso sklepa, da je Baudelaire na analogijo gledal kot na znanost, »morda najvišjo znanost, če drži, da je domišljija 'kraljica med zmožnostmi'«. Avtor nadalje citira iz Baudelairovega pisma Alphonsu Toussenelu: »[D]omišljija je najbolj znanstvena izmed vseh zmožnosti, saj edina razume univerzalno analogijo oziroma to, kar neka mistična religija imenuje *korespondenca*.« Baudelaire govori o človekovi korespondenci s svetom: »[V]se, oblika, gib, število, barva, vonj, najsi

bo v duhovnem svetu ali v naravi, je smiselno, vzajemno, pretvorjeno in *korespondira*.« Calasso ugotavlja: »Prav ta zadnja beseda nam razkriva, da sta pojma *analogija* in *korespondence* pri Baudelairu enakovredna.«

Pred Baudelairom je bila analognost opredeljena preko klasičnih »kanonov«, v katerih so bile korespondence omejene na regulirane »sisteme« interpretacije. Z Baudelairom so ti sistemi odpadli; kanone so zamenjali bolj anarhični, nesistematizirani načini korespondiranja. Baudelairovi preroški verzi se še niso ustalili; neobrzdani ritem sodobnosti še naprej oblikuje naše korespondence s svetom.

Uredništvo letošnje izdaje revije AR/Arhitektura, raziskave je iskalo članke, ki se preko korespondenc v arhitekturi in umetnosti ukvarjajo z domišljijo kot znanostjo. Vsebina sega od nevrofenomenologije do politik, ki oblikujejo naš pogled, od transferenc med umetnikom in arhitektom do neizogibnih odrazov teh prepletanj v akademski sferi. Konceptualno jedro izdaje določajo raziskovanje, narava in raznolikost sodobnih *korespondenc*.

Paul O Robinson
/   gostujoči urednik 2018

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Correspondence and Cable-Cars
/
Letter from Chiatura, Georgia

Philip Ursprung

Zürich, November 2018

Dear Reader

The editor asked me to share some ideas about the notion of correspondence. I am doing this in the form of a letter. A couple of decades ago this would have been very normal. Between the 18th and the late 20th century, thoughts were developed by correspondence. To respond to each other – from Latin *correspondere* ("mutually answering each other", "harmonize", "resonate") – was an effective form of reflection and theorizing. Slower than a "conversation" and more focused than mere "resonance", the notion "correspondence" implies that there is a spatial and temporal distance between the correspondents and ample time to reflect. This tradition ended in the late 20th century. I rarely have the patience to write a letter. I exchange ideas quickly in the office, on a panel, on the phone, by e-mail. I interview people or I am being interviewed, because this takes less time than writing an article and because it is more flexible. Like most people I consider meaning not as a static thing, but as a process, something that has be negotiated, revised, questioned, not fixated. To some extent this idea already prevails in the tradition of exchanging letters and even in Antiquity in Platos's famous imaginary dialogues with Socrates. But today, interlocutors can react immediately. They can adjust their opinion constantly. With this letter, a hybrid between a journalistic report of a news-correspondent and a theoretical speculation, I will try to slow down a little and ask how the notion of correspondence can be brought into play again.

In October 2018, I traveled with my students on a seminar week to Georgia. We visited the capital Tbilisi. From the ruins of socialism, culture sprouts everywhere. The fear that Russia might invade Georgia is palpable. But the youth does not let this spoil its optimism and celebrates techno parties in the foundations of bridges. The literary, theater and art scenes are triumphant. An architectural biennial has also been launched. Old caravansaries remind of the time of the Silk Road. A synagogue, a mosque, even the ruins of a Zoroastrian temple testify to religious tolerance. Like many troubled

1

See F. Beyschlag, P. Krusch, *Deutschlands künftige Versorgung mit Eisen—und Manganerzen. Ein lagerstättekundliches Gutachten, im Auftrag des Vereins Deutscher Eisen—und Stahlindustrieller und des Vereins Deutscher Eisenhüttenleute*, Berlin (no publisher), Dezember 1917, pp. 142-143.

2

Ibid., p. 143

3

Richard Levine, Glenn Wallace, "The Mineral Industry of Georgia", in *2007 Minerals Yearbook, U.S. Department of the Interior, U.S. Geological Survey*, 2010, p. 17.2.

4

In 2016 the mines were shut down for four months because of lack of demand. See *Democracy and Freedom Watch*, 14 April 2016 (www.dfwatch.net, accessed November 2018).

cities, Tbilissi is "poor and sexy." It attracts the *jeunesse dorée*, investors and the creative industries—and is considered a "new Berlin". After embracing the wooden balconies, crumbling Art Nouveau palaces and Soviet monuments of the capital it was not easy to move on to Chiatura, an industrial town two hours west of Tbilisi. Towards the late 19th century, Chiatura was one of the world's largest producers of manganese, an element that is essential for the fabrication of stainless steel. According to a study published in Germany during World War I, exploitation of the reserves started in 1848 and began to raise substantially in 1879. In 1911 and 1912, most of the ore went to the German Empire. [1] Like today, as it is trapped by its own resources of gas and oil, Russia was already subject to its natural riches. In the words of the authors: "Russia has enormous reserves of manganese, for which the indigenous iron industry has no use. It depends on export." [2]

You might not be familiar with the economic history or Georgia, so please allow, dear reader, some more information: Following the Russian Revolution, the manganese was still extracted by international companies and exported. Only in the 1950s it started to go mainly into Soviet steel production and Chiatura prospered. Public buildings were erected. And, most interesting, a dense network of cable-cars was installed, which brought the ore from the mines to the factory and the workers from their home to the plants and the city center. Like the opulent subway stations in Moscow and Leningrad, the stations of the cable cars were designed as palaces for the workers, with colonnades and ornamentation. But since the collapse of the Soviet Union, the independence of Georgia in 1991 and the Russo-Georgian War in 2008, Chiatura is a "shrinking city." About half of the original deposits remain. The reserves are estimated to be 239 million tons in seven mines and four quarries. 261.000 metric tons manganese ore, and 400.000 tons manganese concentrate. [3] The Georgian Manganese Holding, daughter of the British company Stemcor, which owns the Zestafoni Ferroalloy Plant and Chiaturmanganumi in Chiatura and employs about two thousand people is said to have invested a 100 million dollars in the mines and plants.

During our visit, we found no evidence of the alleged investments. The international market obviously has not replaced the planned economy of the Soviet Union. We heard about blackouts and the interruption of the water supply, about accidents and strikes. [4] It rained. The sun was not visible the whole day. The gloomy mood matched the atmosphere of the partially decaying city, which lies in a dark, deep canyon, along a black river. It is hard to tell which factories are functioning and which ones are decaying. Everything is covered by a grey patina of manganese dust. I was amazed that in such a

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The scenery of Chiatura is featured in Ariel Kleiman's film *Partisan* (2015) and in Rati Oneli's documentary *City of the Sun* (2017).

topography a city could even emerge. It draws steeply up the slopes. Some residential areas are located on levels high above the gorge. Aside from a few posters with politicians, I saw no advertising. Only the main roads are paved. Between the houses I stood in the black mud. In comparison, the set of Tarkovsky's film *Stalker* is idyllic. [5]

Despite the desolate situation, several of the cable cars are still operating, and our students were eager to ride them. Transport is free throughout the city. Some cable-cars transport the ore to the factories. Others connect the individual quarters with the city center. A new central hub is under construction. The stations from the early 1950s still recall former wealth, even though the paint has peeled off the columns and the fountains are dry. I'm afraid of heights, but I dared to get into one of the completely rusty cabins. I could not guess the original color anymore. The sheet metal walls are dented, the window panes cloudy, in the rusty floor gaping holes. I felt more in a *Mad Max* movie than in the Swiss mountains. The woman who operated the cabin and issued the order to depart via an ancient telephone offered to open the windows so I could take pictures. I preferred not to look down.

While I was trying to avoid looking into the abyss opening beneath me, I recalled the splendid view we had three days earlier when visiting Dawit Garedscha, a medieval monastery consisting of dozens of caves. In medieval times, the monastery was a town with 5000 inhabitants. It is located on a rim that is part of oblique sediments from the Miocene and Pilocene overlooking a plain that goes on to Aserbeidschan. In Chiatura as well, I could look over the plateau with its deep ravines and valleys and imagine the spectacle of the earth folding and eroding. Of course, there is no relation between the monastery founded in the sixth century and abandoned in the 13th century and the modern mining town. However, in my imagination, the two phenomena corresponded with each other due to the relation to the earth, the role of excavation and extraction, and the visibility of the terrain.

I can assure you that I was afraid. But everything went well and I stepped out of the cable car. I saw half abandoned khrushchyovkas, as the prefabricated concrete apartment buildings from the 1960s are nicknamed. Many apartments were empty. Windows, doors, metal frames were dismantled, the shells of the buildings remained. Only individual apartments seemed still inhabited, the remaining balconies serve as a wooden storage. Chicken are held between the apartment blocks. As I waited for the cable-car to take me back down to the valley, the essay *Naples* by Walter Benjamin and Asja Lacis came to my mind. The essay was published in *Denkbilder*, a series of short essays that were originally published in newspapers in the mid 1920s. In their essay, the authors

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Walter Benjamin and Asja Lacis, "Naples,"
in Walter Benjamin, *Reflections, Essays,
Aphorisms, Autobiographical Writings*, transl.
by Edmund Jephcott, New York, Harcourt
Brace Jovanovich, 1978, pp. 163-173, quote:
p.165.

7

Ibid., p. 167.

8

Li Tavor, *Listen, Architects. Collective tape
music composition with 50 architects and 50
smart phones. Field recording from the mining
city of Chiatura, Georgia – Performed within
the walls of the an abandoned sanatorim in
Tskaltubo, Georgia*, 2018.

9

Lara Almarcegui, Oral presentation, Tskaltubo,
25 October 2018.

evoke porosity as metaphor for the spatiality, the life and the society of Naples. They evoke the grottoes and caves carved into the rock that the city is built open and state: "As porous as this stone is the architecture." [6] They perceived the city as a scenography for performance that is on-going night and day, blurring the stage with the actors and spectators. The backdrop inspired the play, and the actors animate their environment. "Buildings are used as a popular stage. They are all divided into innumerable, simultaneously animated theaters. Balcony, courtyard, window, gateway, staircase, roof are at the same time stage and boxes", the authors write. [7] Naples is not only built on the ground of Vesuvius, it is also constructed with its material. Most buildings, streets, walls and squares are made of porous, volcanic stone. Benjamin and Asja recall that the city looks "grey" rather than colorful. The same relation of the ground and the town can be found in Chiatura. The processes of erosion and extraction are intimately tied to all three sites, they reveal the ground on which they stand. In Chiatura and in Dawit Goradsche, much of this life was absent, and in fact, today they look more like empty stages. Yet perforated spaces—porosity—prevails in both sites and corresponds to the urban structure that Benjamin and Lacis observed.

You need to know, dear reader, that during our seminar weeks, we avoid mere sight-seeing. The musician and architect Li Tavor realized the music performance *Listen, Architects*. [8] She asked us to collect sounds. With our smartphones, we followed the hammering of the pneumatic drills, the rattling of winches, the chuckle of gutters, the gasps of diesel engines, the grunts of pigs and the clucking of chickens. After a few hours we left the city and drove to Tskaltubo, a town of spas. During Soviet times, workers from Georgia and other Republics used to relax in pompous bathing hotels. Now, like in Chiatura, many were abandoned. In a ruined pavilion, probably from the 1960s, we performed our concert. Li Tavor conducted the noise orchestra. The students pulled out their smartphones and played the recordings. Surrounded by the buzzing, rattling and hammering of the phones, my image of Chiatura became clearer. Only then did I realize that we were not *voyeurs* because we were looking for sounds and not confiscating images. Our attitude was not what is often referred to as "ruin pornography", that is, the scandalous pleasure of observing misery from a supposedly safe distance. We were more akin to analysts who listen carefully in order to understand. Thanks to the access via my ears, I realized that Chiatura was not a ruin, but running. The artist Lara Almarcegui, who traveled with us, reminded us that mining is not an artifact "from the past, but something very much present". Mining, she told us, had indeed disappeared from the sight of the industrialized countries but it was indispensable here. [9]

Chiatura, Russia, United Press International
Photo, 1960

Be assured, dear reader, I do not want to romanticize Chiatura. The town lost most inhabitants and went through long time spans without electricity and water. Workers have been killed in mining accidents related to the lack of maintenance. Wages are extremely low. The poverty is shocking. But as a phenomenon, the visit to the town offered me an insight on temporality and history. Rarely have I encountered a place, where all the ingredients of urbanity were so clearly visible. Like in an open book I could read—and hear—everything, from resource extraction, fabrication to distribution, from work to recreation. I could oversee the ground on which the city stands, the limits that define it, and also its infrastructure - the cable cars that kept it moving.

How does this refer to the topic of "correspondence?" What struck me most in Chiatura were the many cable cars. Without the network of cable cars that connect the spaces of work with the domestic spaces, material and people, the city would have not differed from other mining towns. With the cable cars running steadily over the valley, connecting the center with the most remote peaks, operating slowly yet steadily, I was able to perceive the town as a system of correspondences. In my mind it turned into an image of the way history works, a dense network transporting meaning, with much material lost on the way, with different media in use, full of contingency, incidents, uncertainty, but always moving.

Architectural history—and history in general—, in my view is discontinuous. I find concepts such as "influence" misleading, because they presuppose that a certain building is a direct result of an earlier one and that there is a continuity of meaning. I also find the concept of "typology" problematic because it conceives phenomena within a strictly given framework and reduces history to the act of repeating certain types. And I cannot follow the categorizations of "styles", because they suggest that phenomena follow a common norm and can be squeezed into categories like books into bookshelves. To me it is as absurd to imagine that architectural theory is "based" on Vitruvius as it is to believe in historical "foundations." History, in my view, is a dynamic process, not a given, it is a texture (rather than just a text) that is constantly transformed by the present but that also transforms our understanding of the present. Standing in the noise of a factory built in 1937 where manganese ore is processed, I thought that history in fact corresponds with the mining of resources (or sources, as historiographers say), for instance, archival documents or oral history. These resources are moved, processed, treated and moved again, not unlike the manganese ore that I heard tumbling down from carts into the mill, where it is broken up and granulated before being shipped to the iron works. Precisely in its decay, Chiatura was strangely intact and real. Unlike

most inner cities—including that of Tbilisi—nothing was "curated" here. And unlike the Ethnographic Museum in Tbilissi that contains a typological collection of displaced farmhouses rebuilt in a park that we had visited earlier, the town of Chiatura was not a museum. In Chiatura, place, time—as the rhythms and melodies of the sound recordings made clear—had not stopped, but kept going. I was not in the past, but in the present. A good place to write history.

Yours,
Philip Ursprung

In Quest of Attuned Architectural Atmospheres
/
Contributions of Enactive Cognitive Theory and Neurophenomenology

Alberto Pérez-Gómez

1

Alberto Pérez-Gómez, *Attunement, Architectural Meaning after the Crisis of Modern Science* (Cambridge MA: MIT Press, 2016).

2

Aristotle tried to explain his concept with a fascinating analogy: "if the eye was a living creature, sight would be its soul," *De Anima* II, I, 412b 19. Cited by Evan Thompson, *Mind in Life, Biology, Phenomenology and the Sciences of Mind* (Cambridge MA: Harvard University Press, 2007), 226.

3

René Descartes, *Meditations of First Philosophy*, trans. J. Cottingham (Cambridge UK: Cambridge University Press, 1986), 19.

In a recent book I unpacked the centrality of the concept of atmosphere for architectural meaning and its historical roots.[1] I explained the relevance of our growing concern with attuned places, at odds with the dominant concept of architecture as a geometric, aesthetic object. I showed the association of *Stimmung*, the unique German term implying both atmosphere and mood, with the traditional aims of architectural meaning since Vitruvius, encompassed by terms such as harmony and temperance, explaining how architecture had traditionally sought psychosomatic health, framing lived experience with order and stability congruent with local cultural values. *Stimmung* became a central concern for artistic expression in view of the adverse cultural conditions of the late 18th and early 19th centuries, and was engaged by practices of resistance against the dominant formalistic and technological assumptions of mainstream modern planning and building production. In order to fully grasp the possibilities of *Stimmung* and its implementation nowadays, creating life-enhancing atmospheres responsive to human action and to *place* in the fullest sense (as both natural and cultural context), a proper understanding of consciousness and perception beyond Cartesian misunderstandings is absolutely indispensable. To this aim, the correspondences between the insights of 20th. Century phenomenology and neuroscientific findings, sometimes known by the compound term "neurophenomenology," and the propositions of recent "enactive" cognitive theory are immensely valuable.

Contrary to Aristotle, for whom mind and the living body were always united – since "soul" is the capacity of the organism to *act* in manifold ways from vegetative nourishment, sentience, motion and volition, to intellectual conceptualization[2] – Descartes must be held responsible for imagining and promoting the *separation* of consciousness and life, transforming the former into an inner experience accessible to the intellect, the *ego cogitans*, based exclusively in the soul (today's brain). In his "Second Meditation" he goes as far as to doubt the very existence of the body's sentience; indeed, he can even doubt about having a body. The power of the imagination belongs to his thinking and therefore "it *seems*" to him that he sees or touches.[3] This, he concludes, cannot be false (regardless of the origins of the sensation in fact

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Claude Perrault, *Ordonnance for the Five Kinds of Columns after the Method of the Ancients* and my own introductory study, trans. I.K. McEwen of the 1683 first edition, The Getty Center, Santa Monica, CA., 1993, and C. Perrault, *Les dix livres d'architecture de Vitruve*, Paris, 1684.

5

This is indeed, the fundamental purpose of his *Ordonnance*, a radical departure from pervious treatises in the European tradition. Op. cit. "Introduction," 33-38.

6

Drew Leder, *The Absent Body* (Chicago IL: University of Chicago Press, 1990), 69.

or delusion); but sensing, in this particular way, is simply a "thinking."

The Cartesian understanding of mind and perception first appeared in architectural theory toward the end of the 17th Century in the writings of Claude Perrault.[4] Perrault took for granted that architecture communicates its meanings to a disembodied mind, thoroughly bypassing the body with its complex feelings and emotions. He assumed perception to be passive and meaning to be merely the result of the association of concepts and images in the brain. Like Descartes, Perrault believed that human consciousness was enabled by the pineal gland at the back of the head, conceived as a geometric and monocular point of contact between the measurable, intelligible world – *res extensa* – and the disembodied, rational soul – *res cogitans*. This consciousness was capable of perspectival visual perception, manifested as a picture composed with precise lines, like a copper-plate engraving; it assured the human capacity to grasp the immutable geometric and mathematical truth of the external world, closing the divide between the two heterogeneous elements of reality. Thus Perrault could question, for the first time ever in the history of architectural theory, the bodily experience of "harmony" applicable to all the senses in *action*, embedded in kinesthesia. This life-enhancing phenomenon had always been taken for granted since Classical antiquity and believed to constitute the primary quality to be observed in architectural design – the ineluctable foundation of all architectural meanings. For Perrault, sight and hearing were autonomous and segregated receptors, and therefore the inveterate experience of "musical" harmony expressed in architectural settings appeared to be a fallacy. Consequently, the quality of desire (*venustas*) to be conveyed by the architectural object in order to generate harmonious (meaningful) *place* was substituted by abstract aesthetic composition producing a dispassionate beauty through the able manipulation of the proportions of the classical orders, reduced to a simple, precise and exclusively visual method for instrumental applications.[5]

Today many Cartesian assumptions remain unquestioned by virtue of the extraordinary successes of the instrumental sciences, down to so-called artificial intelligence. The *ego cogito* or "soul," which Descartes still believed shared its rational cognitive capacities with God, was eventually identified with an organic "brain" by behaviorism and early 20th Century neuroscientists and cognitive theorists; the material brain came to be understood as the exclusive seat of consciousness and conceptualized as an information processor and dualism remained unquestioned. The broader philosophical reasons for its pervasiveness are complex and beyond the scope of this essay. The fact is that our organic basis can be easily forgotten, particularly in healthy functioning individuals.[6] Buildings evidently acquire meanings by virtue of their

7

Greg Lynn, Michel Maltzan and Alessandro
Poli, *Other Space Odysseys, Exhibition
Catalogue* (Baden SW: Lars Müller/ CCA,
2010).

8

Jean Baptiste Dubos, *Réflexions critiques sur
la poésie et la peinture*, 2 vols., (Paris, 1719).

9

Thompson, *Mind in Life*, 228.

mere existence, and these are easily identified with "information," salient when it is communicated by novel and unusual forms so that little else seems to matter, leading to a significant disregard for more primary sensory meanings offered to a fully embodied consciousness by their materiality. Avant-garde architects obsessed with complexity for its own sake, such as Greg Lynn, have even celebrated architecture's "liberation" from gravity, assuming architectural meanings are possible ignoring the living body's fundamental condition as earth-bound and *placed*.[7]

While Cartesian epistemology eventually became dominant in European culture, the issue of feeling or *sentiment* as a crucial dimension of artistic expression could not be easily dismissed. Writers on art, like the celebrated Abbé Jean-Baptiste Dubos, started to argue that artistic judgment pertained to feelings, perceived by a "sixth sense."[8] Yet, during the 18th Century aesthetic feelings (taste) could easily become reasonable rules; convertibility was argued often, facilitated by Descartes' epistemology, and supposedly generated inductively, in emulation of rational Nature. French philosopher Marie-François-Pierre Maine de Biran (1766-1824), however, did start to recognize the limitations of Descartes' epistemology and tried to grasp the source of the personal "I" in a "feeling of existence," meaning the *bodily experience of exercising effort in movement*.[9] This concept was taken up and developed in the writings of Romantic philosophers such as Schelling and Novalis and became a precursor of the late 19th Century American pragmatism of William James and John Dewey, and of the early and mid-20th Century phenomenology of Edmund Husserl and Maurice Merleau-Ponty. It thus lay at the root of later developments in American philosophy, like the contemporary work of Mark Johnson, of contemporary American and European existential phenomenologists, and also of the recent revolution in the cognitive sciences that has reconciled this discipline with the previously mentioned philosophical positions, particularly in the works of Evan Thompson and Alva Noë.

While the differences among all these positions are complex, they are united by a fundamental questioning of Cartesian dualism and by an awareness of the deep continuities between mind and life. These developments also reiterate the fact that phenomenology is not "anti-scientific," as it has been regrettably misunderstood. Indeed, recent approaches in cognitive science have given up depending on analytic philosophy and computer brain models and started acknowledging the relations between cognitive processes and the real world. "Embodied dynamicism," a very recent position in cognitive science that arose in the 1990's, called into question the conception of cognition as a disembodied and abstract mental representation, adopting a critical stance towards the extrapolation of

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Thompson, *Mind in Life*, 10.

11

This insight is present in the Buddhist teachings of Nagarjuna from the 2nd. Century, titled *Stanzas of the Middle Way*. Cited in Francisco Varela, Evan Thompson and Eleanor Rosch, *The Embodied Mind* (Cambridge, MA: MIT Press, 1991), 220-1.

12

See Hans Jonas, *The Phenomenon of Life, Toward a Philosophical Biology* (Evanston IL: Northwestern University Press, 2001).

13

Nick Crossley, *The Social Body: Habit, identity and desire* (London UK: Sage, 2001), 70.

14

Ibid., 76-7.

15

Ibid., 245-7. See also Evan Thompson, *Waking, Dreaming, Being; Self and Consciousness in Neuroscience, Meditation and Philosophy* (New York: Columbia University Press, 2015), for a recent study of the nature of "self" that takes into consideration Hindu and Tibetan Buddhist insights and tests them through neurophenomenology.

all manner of computer models and its processes to explain the mind.[10] The mind and the world are simply *not* separate and independent of each other; nor is the mind merely a neural network in the head. Rather, the mind is an embodied dynamic system *in* the world. For Francisco Varela, Evan Thompson and Eleanor Rauch, who coined the term neurophenomenology in *The Embodied Mind* (1991), cognition is the exercise of skillful know-how in embodied and situated action, and cannot be reduced to pre-specified problem solving. In other words, the perceiver (subject), the perception (invariably affective *and* cognitive), and the thing perceived (object) could never be said to *exist* independently, they are always codependent and co-emergent.[11] In the same book they introduced the concept of cognition as "enaction," linking biological autopoiesis – the attribute of living beings as autonomous agents that actively generate and maintain themselves – with the emergence of cognitive domains. In this view the nervous system of any living being does not process information like a computer; rather it creates meaning, *i.e., the perception of purpose in life,* whose articulation becomes more sophisticated with the acquisition of language in higher animals, culminating in humanity's symbolic communication.[12] Indeed, in the human world the relationship of purposeful action to biological imperatives, such as primary homeostasis, is always opaque, since human actions are part of complex symbolic economies.[13]

The "life-world" in this model is not a pre-specified external realm represented objectively by the brain, but a relational domain enacted by a being's particular mode of coupling with the environment, beyond distinctions between nature and culture, and one in which cities and architecture play a prominent role. Let me emphasize the obvious: architecture is part of the life-world, not of some objective, material nature. For humans, the life-world is linguistic and symbolic, a setting of "perceived situation-work," beyond the "perception-action" of most animals and life in general.[14] *If only for this reason, the questions of architectural meaning and relevance can never be reduced to concepts such as sustainability, physical or psychological comfort and optimization.* Embodied experience in this approach is not a secondary issue (as it was after Descartes), but becomes central to the understanding of the mind itself. Though the nature of mind remains a contested issue in neuroscience, neurophenomenology recognizes that it is irreducible to the physical brain. The "I" as a *bodily subjectivity* radically does away with Cartesian dualism.[15] Being-in-the-world is thus beyond any subject-object dichotomy; it is neither first-personal (subjective) nor third-personal (objective), it is an existential structure that remains prior to all abstractions. While neurophenomenology calls upon both first person accounts and third person, scientific narratives to fully grasp

16
Alva Noë, *Out of our Heads: Why you are not your Brain and other Lessons from the biology of consciousness* (New York: Hill and Wang, 2009).

the nature of mind, it rejects the possibility of biometrics becoming an instrumental tool directed to the optimization of existential meanings, as in the case of urban design and so-called "intelligent" architecture.

In his 1907 lectures, Edmund Husserl recognized that every visual or tactile perception was accompanied and intrinsically linked to the sensing of one's body movements: in watching a train go by, for example, the train is given in conjunction with my sensing of head and eye movements. Husserl believed that kinesthesis was therefore a constitutive condition of ordinary perception, and this became a central point of departure for Merleau-Ponty's *Phenomenology of Perception*. In this seminal book, Merleau-Ponty rejected the explanations of associationism and behavioral psychology, and the idea of perception as the mere sum of stimuli conveyed by independent senses, simply communicating data to a brain where a synthesis of some kind might take place. Perception is not the later stage of sensation, with the sensory receptors as the starting point of any analysis. Rather, both perception and emotion are dependent aspects of intentional action: our engaged bodily, sensorimotor knowing of the world. Merleau-Ponty argued for the primacy of embodied perception at the roots of being and understanding, grounding other modalities of intellectual cognition, following Husserl's explanation of the limitations of hypothetical thought: we first know through our sensorimotor awareness that the earth does not move, for example. This is a primary certainty for our bodies that only secondly enables humans to construct an endless number of scientific or mythical explanations of the universe that may be more or less credible as we "prove" them through instrumental means. But the first phenomenological truth is a precondition for all others, expressed everyday when we speak, in every possible language, of the rising or the setting sun, and model our lives and our architecture according to ensuing rhythms and enabling metaphors.

The ideas developed by Husserl and Merleau-Ponty continue to be renewed today. Alva Noë (2009) has lucidly explained the enactive understanding of perception and cognition, emphasizing particularly that in order to understand consciousness in humans and animals we must look not inward, but rather to the ways in which a whole animal goes on living in and responds to their world.[16] Consciousness is always of something; it is always of things other than itself. Consciousness is not merely contained in the brain, bounded by the skull. This absence of limits has to do with complexity, the distributed nature of mental processes, and the involvement of the body in consciousness. Neurologist Frank Wilson wrote already in 1999 about the possibly insurmountable difficulties in understanding the workings of the human brain, pointing out that the concept of brain functional centers

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Frank Wilson, *The Hand* (New York: Vintage, 1999), 302-7.

18

See Louise Barrett, *Beyond the Brain, How Body and Environment Shape Animal and Human Minds* (Princeton NJ: Princeton University Press, 2011).

19

Noë, *Out of our Heads*, 7.

20

Crossley, *The Social Body,* 70-3. See also Louise Barret, *Beyond the Brain, How Body and Environment Shape Animal and Human Minds* (Princeton NJ: Princeton University Press, 2011)

21

Merleau-Ponty, *Phenomenology of Perception* (1963) cited by Thompson, *Mind in Life,* 80.

was tantamount to simplistic scientific reductionism, a position cor-
roborated by recent findings in neuroplasticity. "The brain does not
live inside the head, even though that is its formal habitat. It reaches
out to the body and the body reaches out to the world. We can say that
the brain 'ends' at the spinal chord, and that the spinal chord 'ends' at
the peripheral nerves," but "brain is hand and hand is brain, and their
interdependence includes everything else right down to the quarks."[17]

It is precisely due to the extended nature of consciousness, that
architecture cannot simply emulate mimetic of animal shelters, howev-
er clever, functional or rational they may appear to us. Since the en-
vironment and the mind, human or animal, are deeply entwined, and
specific bodily morphologies and environments shape their respective
minds, there is a radical limitation to our "objectification" of the animal
worlds, in the direction of biomimetism, for instance.[18] Human archi-
tecture cannot be assumed as simply driven by material or hedonistic
factors, associated to psychotropic processes, and our human biological
homeostasis (equilibrium) necessarily involves cultural issues, like our
culturally framed-sexuality and our awareness and openness to death.

If, as Husserl, Merleau-Ponty and recent cognitive science suggest,
perception is something we do, not something that happens to us (like
other autonomous internal physiological processes such as digestion),
it is obvious that our intellectual and motor skills are fundamental to
cognition.[19] By the same token *the external world, the city and architec-
ture, truly matters*. All living organisms are not only reactive but also
proactive in both perception and action; their environments are partic-
ular, not "objective."[20] There is circularity in all organisms' relationship
with their environments; our behavior is both affected by the environ-
ment and affects it. We could therefore not merely give up our intersub-
jective, emotionally charged spaces of communication, the necessarily
bitter-sweet space of mortal human desire, for the comfortable, psycho-
tropic visual space behind our computer screens, as some might think
naively, without also giving up a fundamental dimension of our human
consciousness. Neither do we relate to our symbolic environment as if
it were a text in need of interpretation to be conveyed to the brain as
"information": interpretation comes after we have the world in hand.

Thus architecture affects us, along the full range of awareness, from
pre-reflective habits to reflective wonder. We are "already" in a shared
social context, our subjectivity is intersubjective; we are "in the "game,"
like we might participate in a sports match, depending primarily upon
prereflective, non-representational motor skills for our perceptions
and actions. Each maneuver undertaken by the player modifies the
perceived character of the field.[21] Human consciousness, understood

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In addition, he elaborates on how self-consciousness (in various modalities) is present in dreams and even in dreamless deep sleep, an ancient position found in Hindu and Buddhist thought that can now be ascertained through neuroscience. See Thompson, *Waking, Dreaming, Being*, 1-20; 356-366.

23

Thompson, *Mind in Life,* 315-6.

24

Crossley, *The Social Body,* 54-6.

as action in this playing field, is by definition a skillful attunement to the environment. For humans the playing field is symbolic– the architecture of the city– framing focal actions and habits, enabling some and curtailing others, setting limits and thus making possible human freedom; *it does not appear primarily as an object, it becomes "present as the practical end" of the inhabitant's intentions.* This complex entanglement is a primary reason why the issue for architecture will always be meaning and not the mere optimization of pleasurable sensations.

Thompson clearly explains how reflective self-awareness is not the only kind of self-awareness.[22] This is a crucial point to understand the nature of architectural meaning. Experience also comprises a pre-reflective self-awareness *that is not unconscious*, one also present in dreams and even in deep sleep. Neurobiological evidence now vindicates this position, though Thompson's conclusions may be contested. Indeed, it has now become evident that the *present* temporality inhabited by the conscious living body is not merely a non-existing point between past and future, but a looped network of immediate and mediate memories and projections. Thus, significantly, present experience includes the pre-reflective bodily self-consciousness profoundly affected by the environment (architecture) that may be passive (involuntary) and intransitive (not object-directed).

It is thus possible to affirm with Thompson and Merleau-Ponty that this sort of pre-reflective self-awareness animates skillful coping.[23] At a primary level, our acting body *knows*, this is a body inhabited by motility and desire, the motion of life itself, the body whose foundational knowledge becomes stabilized through habits. Habits entail far greater personal agency than conditioned reflexes as understood by behaviourism, and yet they *are* habitual actions and thus challenge any over-intellectualized conception of the agent rooted in propositional mental acts.[24]

The pre-reflective body is fundamentally our sexual body, closest to our animal reality, and also arguably to our sense of the sacred. Our body recognizes its location in our surroundings without "paying attention," through "motor intentionality." This is the body capable of unspeakable athletic feats when threatened, and the body that knows another person or a place long before exchanging a word with the stranger or reading a travel guide. It is also the body in action housed by architecture – not necessarily a subject that contemplates it as an aesthetic object.

Thus we can grasp the fallacies involved in assuming that architectural meaning is what appears in the more or less striking pictures of buildings on a glossy magazine, in 2-D or 3-D images on the computer screen, or in comprehensive sets of precise working drawings. The most significant architecture is not necessarily photogenic. In fact,

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Cited by Martin Jay, "Sartre, Merleau-Ponty and the Search for a New Ontology of Sight," in David M. Levin, *Modernity and the Hegemony of Vision* (Berkeley CA: University of California Press, 1993), 164.

26

Merleau-Ponty (1963), 235.

27

Thompson, *Mind in Life,* 278-9; Alva Noë, *Varieties of Presence* (Cambridge MA: Harvard University Press, 2012) 82 f. and Noë, *Out of our Heads*, 35 f.

28

Thompson, *Mind in Life,* 276-7 cites O'Regan (1992): "Despite the poor quality of the visual apparatus, we have the subjective experience of great richness and "presence" of the visual world. But this richness and presence are actually an illusion."

often the opposite is true. Its meanings are conveyed through sound and eloquent silence, the tactility and poetic resonance of materials, smell and the sense of humidity, among many other factors that appear through the motility of embodied perception and are given *across* the senses. Furthermore, because good architecture fundamentally offers a possibility of attunement, atmospheres appropriate to focal actions that allow for dwelling in the world, it is very problematic to reduce its effect (and critical import) to the aesthetic experience of an object, as is often customary. Strictly speaking, architecture first conveys its meanings as a situation or event; it partakes of the ephemeral quality of music, for example, as it addresses the living body, and only secondly does it become an object for tourist visits or expert critical judgments.

Indeed, a better understanding of embodied cognition leads us to question the commonly accepted idea that visual perception is like a picture. Contrary to Descartes' beliefs, we know today that sight is not simply a representation in the brain. As Merleau-Ponty put it: "It is by means of the perceived world and its proper structures that one can explain the spatial values assigned to a point of the visual field in each particular case."[25] Sight is integrated with the other senses in order for us to "make sense" of our experience of the world. This is what Merleau-Ponty demonstrates in *Phenomenology of Perception:* "The senses translate each other without any need of an interpreter, they are mutually comprehensible without the intervention of any idea." Emphasizing the primordial temporality of experience, he stated: "The lived perspective, that which we actually perceive, is not a geometric or photographic one."[26]

Evan Thompson and Alva Noë have further explained how vision is all-important, yet our experience is not picture-like.[27] The optical image is fragile at best: this was presumed in the call for optical correction in pre-modern architectural theories, acknowledging the limitations of human vision in order to enable the lived, tactile experience of perfectly adjusted and harmonious buildings. Merleau-Ponty and Noë use the well-known experiments with inverting glasses to prove the precariousness of the retinal image. Noë further explains how it is that seeing is not a process that starts from a retinal picture, for there are in fact no retinal *pictures*. The image at the back of the eye is incredibly imprecise and hardly a rendition in "high definition" of the world around us. Thus, seeing itself is not pictorial, its "high definition" quality is a result of our primary motor and sensory skills.[28] One may recognize the building in the picture or the drawing, it "shows up," but it is also obviously *not* present in the same way as the building might be in real embodied experience. The building in the picture is present *as absent*.

This is of course a major issue when it comes to questions of

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Thompson *Mind in Life,* 278-9.

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Husserl discusses this problem in multiple writings, starting with the "Lectures on the Consciousness of Internal Time from the year 1905," in *On the Phenomenology of the Consciousness of Internal Time (1893-1917),* trans. J.B. Brough (Dordrecht: Kluwer Academic Publishers, 1991). The discussion and commentary on the topic is abundant and often highly technical. Thompson (2007), 317-28, offers a very lucid summary of Husserl's analysis.

31

Cited by Thompson (2007), 318.

32

Ibid., 326.

33

Ibid., 328-9 f.

architectural representation in design, dependent as it often is on the assumption of the identity between represented visual form and space in a computer model, for example, and the experienced reality in buildings. Thompson carefully analyses and rejects the assumptions of perceptual experience as pictorial, especially in the photographic sense assumed by many theorists.[29] He concludes that in fact *we visualize an object or a scene by mentally enacting or entertaining a possible perceptual experience of that scene*: note that discursive language plays a crucial role. This is a fundamental observation for architectural design that I have elaborated in my writings, seldom considered by architects, especially after the 19th. C., when the issues of architecture became generally reduced to the efficient solution of material needs or to the production of formal syntaxes.

Given that temporality and spatiality are intertwined in our primary embodied cognition of place, grasping the true nature of time-consciousness for a living body is also crucial. This is a complex problem that I can only sketch here. In the phenomenological tradition, the point of departure is Edmund Husserl's observation that it would be impossible to experience "temporal objects," like a piece of music, if our consciousness of the present moment were the experience of a *punctum*, of an instantaneous "now" that is in fact never "here."[30] William James has also suggested that "the practically cognized present is no knife's edge," but rather operates like a block, a temporal expanse with a "bow and a stern."[31] Husserl's central contribution was to disclose the structure of the "thick" present moment given to experience. According to him, time-consciousness has a three-fold structure, including primal impression, protention (looking forward) and retention (looking back); these work together and cannot operate on their own; their unified operation underlies our experience of the present moment as having "temporal width." Husserl further distinguishes between retention as "primary memory" and recollection or "secondary memory;" between protention or "primary anticipation" and expectation or "secondary anticipation." While "primary" protention and retention are "present," the secondary types of temporality are *re-presentational*: they are properly speaking memory (ultimately history, orienting reflective action) and foresight: our capacity to promise that becomes an architectural project.[32]

According to Thompson, Husserl's description of the absolute flow or "standing-streaming" of the living present corresponds precisely to pre-reflective self-awareness (which as we have noted is anything but "unconscious"), an argument now vindicated by some neuroscientists interested in the temporal dynamics of consciousness.[33] In the living experience of architecture, while working or engaged in focal actions, place is first *given* in this mode. The contents of the

34
See also Alberto Pérez-Gómez, *Built upon Love, Architectural Longing after Ethics and Aesthetics* (Cambridge MA: MIT Press, 2006), 69-73 f.

present moment arise and perish at different rates, depending on the nature of things; some have more permanence while others are inherently ephemeral. Buildings themselves are relatively permanent objects, stabilizing cultural memories; they can be judged through rational and even scientific criteria. The proper, primary temporality of architectural atmospheres, however, is not of this order. Rather it is effectively kindred to music, addressing the primary pre-reflective and engaged bodily consciousness, framing *actions*, like ritual or work, potentially articulated by the architect in a narrative program.

It is important to clarify how this differs from the temporality assumed by modern aesthetics, starting in the 18th Century, when architecture became more firmly associated with the "Fine Arts." Buildings became "objects" to be experienced "out of time" as dispassionate, beautiful "compositions," or at best in the linear time of voyeuristic criticism or tourism, as keenly reported by visitors to ancient ruins during the 1700's; experience became identified with aesthetic "judgment," connecting to emotions as mental associations, effectively bypassing the kinesthetic bodily senses and explaining its effects through Cartesian psychology. This understanding of architectural meaning came to fruition in the *parcours* used at the *École de Beaux-Arts* in the early 19th Century to judge the value of projects and adjudicate prices, a precedent for the well-known devices used by modernist architects in the early 20th Century, and still often implemented in contemporary building design. Today the concept of scientific time is at the root of the popular "fly-through" computer-generated presentations of building projects, and of the misplaced claims of the "dynamic" and "flowing" experiments in parametric design that freeze a frame from an algorithmically generated "changing" form, similarly to Edward Muybridge's famous stop-motion photography of the 19th Century. These are merely "re-presentations" of time that don't acknowledge the true nature of the living present as described above. These cinematic representations and "flowing" buildings may therefore provide surprising experiences and "neat" effects, but not much else.

In view of this we can speculate that architectural meaning, offered to our *presence*, unfolds in two different temporalities; one pertaining to the building as object, obviously imbued with relative permanence, and the other the temporality of the event, more elusive, yet primary. Form embodied in the materials composing buildings matters immensely in architecture. It matters at the level of re-presentation, as it becomes *memory* and contributes a poetic image, as I have explained in some of my writings.[34] While contributing to the configuration of atmospheres for focal actions, however, material form matters in a different, arguably more fundamental way: it creates a stage whose properties, available to the

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This is a term coined by Dalibor Vesely to designate the profound dilemmas facing modern and contemporary practice. See Dalibor Vesely, *Architecture in the Age of Divided Representation* (Cambridge MA: MIT Press, 2004).

36

Thompson, *Mind in Life*, 403. See also Crossley, *The Social Body*, a remarkably lucid treatment of the issue of intersubjectivity through Merleau-Ponty, and its consequences for the understanding of the social body.

37

Ibid., 409-10.

38

Ibid., 403.

39

Ibid., 73.

40

Ibid., 121

41

Noë, *Varieties of Presence,* 125.

inhabitants, both limit and make possible their actions and habits. While these communicative functions of architecture have been traditionally integrated, the reflection offered here becomes particularly relevant in our times of "divided representation,"[35] where symbolic representations of "world" are simply unattainable for a fragmented, cosmopolitan society.

Elaborating on Husserl's understanding of lived temporality, enactive cognitive science has identified the importance of emotions in relation to protention: protention is manifested as desire, always unfulfilled in the living present, motivated by emotions in the environment. A lived world without affective valence, one merely comfortable, mute, neutral or sedated, and this concerns particularly the so-called intelligent urban environments and architecture often presumed as optimal for 21st Century humanity, would significantly curtail a sense of purpose in human action. "Affection" as the allure or pull of architecture does not refer to a causal stimulus-response relation, but to an intentional "relation of motivation" that must account for cultural habits. To repeat: the role of architecture is not optimization or problem-solving, but more properly, to reveal the space of desire: *venustas*.

As I have suggested, individual subjectivity is *from the outset* intersubjectivity, as a result of the communally handed down norms, conventions, symbolic artifacts and cultural traditions in which an individual is already embedded.[36] While emerging from the world of perception, linguistic, polysemic symbols – also termed natural language – create a break with sensorimotor representations.[37] This is the world of architectural communication, the real "context" of architectural endeavors, one that cannot be understood as being neatly divided into culture and nature, and presuming its objectivity for scientific analysis. Human mentality arises from developmental processes of enculturation, beyond the dichotomy of "nature versus nurture."[38]

Sensorimotor knowledge stabilizes primarily as *habits*. Habits eventually result in stable gestalts: mostly acquired flexible skills and competences, established yet always open to change.[39] All human actions share in the habitual. Habit is a trace left by actions. Present actions are shaped by habits because previous actions have given rise to habits. Such actions are never deterministic but always situated in *place* and motivated by purpose and meaning.[40] Habits are not like mechanical reflexes; habits and agency imply plasticity for humans. Alva Noë adds: "Habits are basic and foundational aspects of our mental lives. Without habit there is no calculation, no speech, no thought, no recognition, no game playing. Only a creature with habits like ours could have a mind like ours."[41] They are a form of practical understanding or know-how that manifests as competent and purposive action and attaches to the

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Crossley, 127.

43

Dalibor Vesely, *Architecture in the Age of Divided Representation* (Cambridge MA: MIT Press, 2004).

44

Ibid., 79.

45

Noë, *Out of our Heads*,107.

world by way of the meaning it discerns therein. The importance of the environment in general and of architecture in particular is obvious in this regard, as are the stakes involved in significant formal "innovation." Noë suggests that we could think of the city, paraphrasing Goethe, as "frozen habit." Habits are neither intellectual knowledge nor involuntary action: they are knowledge that is forthcoming through the body's motricity and effort.[42] *The comprehensibility of architecture depends on acknowledging habits and framing them in new settings with appropriate atmospheres that may reveal limits and remain open to the ineffable.* Rather than seeking some unattainable radical novelty, good architecture might thus offer humanity authentic "situated" freedom.

Just like the lived, emotionally charged environment cannot be reduced to parameters, there is no way that one individual, architect or planner can subsume culture. This is a crucial aspect of our contemporary architectural crisis that has been brilliantly explained by Dalibor Vesely.[43] There are real limitations to the concept of the architect as "creator," imagining that his or her formal talent and skills may compensate for the flatness of our technological world. When habits sediment into environments that convey negative or hostile emotions, however, what is the architect to do? It is not enough to seek more comfortable or behaviorally adequate environments. With a clear understanding of the stakes, the architect must act seeking instead culturally-specific poetic images, perhaps taking clues from expressive moments in relevant art and literature, accepting the "experimental" nature of formal search and perhaps even shock to defamiliarize a complacent society. And yet again, this cannot amount to mere search for novelty. A consideration of viable tools of representation for an architect to create appropriate moods and atmospheres is central to this concern.

While this topic is beyond the scope of my essay, let me conclude by suggesting, as I have done elsewhere, the importance of narrative language, the language of fiction which is the potential of architecture. The reflective subject emerges from the pre-reflective realm; *it is a function of speech, of natural language.*[44] Emergent speech breaks the silence of the perceptual world and spreads further layers of significance over it; it brings the subject into relationship with itself. Speech cannot be planned without speaking, it is originally a pre-reflective act that brings the subject and object of speech, the speaking subject, into being: an embodied activity, a body technique which Alva Noë suggests may be closer to the grooming of chimpanzees than to the indicative character of semantics in reasoned discourse.[45] Languages are in fact gestural habits, the debris or sediments of the past communicative acts of a community, stored within the corporeal schemas of

46

Ibid.

47

Ibid., 133.

48

Crossley, 80.

49

See Walter Ong, *Orality and Literacy The Technologizing of the Word* (London: Methuen, 1972).

50

Vitruvius, *Ten Books on Architecture*, trans. I.D. Rowland and T.N. Howe (Cambridge UK: Cambridge University Press, 1999), 34.

51

Crossley, 148.

the contemporary population.[46] Language embodies the shared prac-
tical sense of a society; it gives durable form to habits of perception,
conception and reflection that have formed within the group.[47] Yet,
speech is the medium of reflective thought.[48] Natural language is thus
the appropriate way to negotiate enactive knowledge towards further
action; it is therefore indispensable to drive the architectural project.

Speech and orality are primary.[49] This is language understood in a
sense very different from that of conventional poststructuralist linguis-
tics. It is rather the emerging breath (air) that breaks the silence of the
perceptual world and is capable of first giving shape to an atmosphere,
spreading a further layer of significance over the world of perception. It is
language as Vitruvius evokes it, as primary expression at the dawn of cul-
ture, emerging at the origins of architecture in that momentous occasion
when humans, brought together by the need to keep a fire going, first
assembled and *spoke*, contemplated the heavens, imitated its regularity
and then built their first dwellings.[50] Emerging language brings a subject
into relationship with its self through an articulated story, which is a life
lived; it allows for the recognition of the ethical self that finds herself as
invariable and distinct every morning (after about the age of 4), despite
the constant mutations in an individual's lived experience. It enables the
"me" that is constructed in the web of narrative discourse and imagi-
native representation and which is distinct from the "I" that embodies
and repeats its history in the form of habits.[51] This is the language that
enables one to negotiate enactive knowledge towards further action,
the language of history providing ethical orientation for action and the
language of the architectural program, properly understood as a fiction-
al projection of potential human life: the language of promises, such as
architecture. In avoiding natural language as a fundamental component
of the design process, modernist practices, from early functionalism to
contemporary design through algorithms are doomed to failure. Indeed,
if Giorgio Agamben is correct, the aim of architecture, attuned atmo-
spheres or *Stimmung*, lies precisely at the point of articulation between
embodiment – in the form of habits – and language, which brings
them to awareness and reveals their full affective and cognitive value.

Out of this World in Two Parts

Agostino De Rosa

"Touch is among the most demystifying of the senses, while sight is the most magical."

/   Roland Barthes, *Mythologies*, Paris 1957.

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See R. Grisoilia, *Le metamorfosi dello sguardo. Cinema e pittura nei film di Luis Buñuel*, Rome 2002; P. Bertetto, *L'enigma del desiderio. Buñuel, 'Un chien andalou' and 'L'Âge d'or'*, Rome 2001; J. Baxter, *Luis Buñuel*, London 1994; A. Sanchez Vidal, *Luis Buñuel*, Madrid 1991.

3

First, the figurative subject of the eye is a constant in symbolist painting, then in surrealism. See as in J. Siegel's, *The image of the eye in surrealist art and its psychoanalytic sources, Part I: The mythic eye*, in "Arts Magazine", 56, 6, 1982, and Id., *Part II: Magritte*, in "Arts Magazine", 56, 7, 1982. On pictorial implications and on optical-figurative descriptions of L. Buñuel's work, see: E. Guigon, *Gozos de la mirada. Muestrario*, in "Los paréntesis de la mirada. Un homenaje à Luis Buñuel", exhibition catalogue, Teruel 1993; but also more recently, R. Grisolia, *Le metamorfosi dello sguardo. Cinema e pittura nei film di Luis Buñuel*, cit.

2

The genesis of the script for 'Un chien andalou' is reconstructed by Dalì in an alternative way: according to the Spanish painter a 'paranoic' criterion of script composition would have been adopted, only way to guarantee the palindromis effect of the "multiple figuration" of the images. See S. Dalì, *L'asino putrefatto*, in Id., "Yes. The paranoic-critique revolution. Scientific archangelism", Milano 1980, pp. 170-171.

PART ONE: THE DENIGRATION OF VISION

Two series of images come to mind when one considers sight and the role of the observer in modernity in a century that has abandoned us without any apparent heritage. It particularly, but not so peculiarly, deals with two scenes from two films: the first, temporally more remote, is the short film entitled *Un chien andalou* (1928-1929)[1] by Luis Buñuel, a type of surrealistic stylistic exercise contrived with the luxurious complicity of Salvador Dali as script writer. According to Buñuel, the script derives from the intersection of the dreams of its two respective authors[2]. An alienating relationship, obsessive and mysterious, is established between the fictitious pictorial, cultivated by both authors and professedly surrealistic – evident in the continuous figurative references made to Redon, Magritte e Mirò[3] – , and the literal filmatic structure. More precisely, the final product results from the assemblage of scenes, done solely in the editing phase, organized according to dream-like and automatic stimuli, and altered by psychic text. In this way the construction of visual and narrative sequences returns to an ex-post time, and can be imagined as being created after the lens – mechanical sight of filmatic representation – set its gaze upon them. In this manner, the image lives a double life, unconscious and subliminal optics in the shooting phase, vigilant and rationally projective in the post-production phase.

The scene in the film which is indelibly imprinted in the observer's memory is, without a doubt, the one in which the protagonist's, (actress Simon Mureil) left eye is longitudinally dissected with a razor. [1-4] Buñuel doesn't contribute any ethical or criminal connotation to this action that takes place with a disquieting absence of reaction on the part of the victim, who sweetly offers herself up to the stupefied gaze of the spectator in a sort of vesalian pose. The scene communicates the inevitableness of the irrational gesture, but in the meantime foretells the operation that, *mutatis mutandis,* is about to allusively transpire, has transpired, and will transpire in the twentieth century on the spectator himself. By now, the latter is seduced by the scene to such an extent as to not to be able to refuse its oppressive and sadistic nature: ocular violence on the set, assumed by now as an element of scopic violence on the passive

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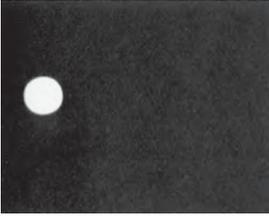
3

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4

M. Jay, *Downcast Eyes. The denigration of vision in twentieth-century french thought*, Berkeley, Los Angeles and London 1993, p. 258.

5

See as in J.-J. Goux, *Descartes et la perspective*, in "L'Esprit Créateur", 25, I, spring 1985.

6

R. Descartes, *The Philosophical Writings of Descartes*, 2 vol., tran. J. Cottingham, R. Stoothoff and D. Murdoch, Cambridge 1984, vol. 2, p. 21.

7

Ivi, p. 166.

8

See S. Kofman, *Camera obscura de l'idéologie*, Paris 1973.

1-4 Stills from *Un chien andalou* (1928-1929), directed by Luis Buñuel

observer, in a circular figurative *transfert.* According to some critics, the surgically performed – clean – incision executed by Buñuel himself seems to allude, alternatively "to an image of sexual cruelty against women, to a sort of symbol for the male fear of castration, to childbirth, to an indication of homosexual ambiguity, and to a complex linguistic game",[4] but is more credibly traced back to a violent and artificial poetic *mise en scène* of the disparaging act to which sight is the object.

The post-mortem action cannot but draw to mind a similar preceding dissection conducted by Renè Descartes (1596-1650), the most perspective and visual of French philosophers,[5] on an '*oeil de boeuf* when he introduces the metaphor of the *camera oscura* (dark room) in his *Dioptrique* (1637). The philosopher considered the *camera oscura* an instrument of the objective representation of reality which disregards the sentient and the will of the individual observer, that even functions, without the progressive degeneration tied to the breaking down of the tissues, in a subject deprived of life. He uses the metaphor of the *camera oscura* to figuratively allude to his precept of the releasing of the senses, basis for his *Metodo:* "now I will close my eyes, plug my ears, I will not mind my senses."[6] This catastrophic reclusion of the observer within himself, with respect to the world of ecological experience, represents Descartes' clear cognition of the inadequacies of physiological perception in the restoration of a dark and silent world placed beyond touch and sight, beyond hearing and taste, completely unknown to us if not for its ludicrous acoustic, visual, tactile and gustative projections, inexistent, when all is said and done, with respect to phenomenal reality that is and remains outside of us, occupying another space and dimension which are unrecognisable in their completeness.

To imagine Descartes in the act of dissecting a human eye or that of a rather large animal, such as an ox – cutting "....the three enveloping membranes of the rear sections so as to expose a large part of the liquid without spilling even a little" – to then substitute it for the most classical glass lens, and display it in adhered to the pinhole of a *camera obscura* [5-6], thus seeing "...an image of all external objects represented in natural perspective",[7] appear on the opposite wall, is a complex operation. On the one hand it offers us an observer that is now disembodied, who has given up his ties to the onlooker that defined him as a human being, becoming a cyclopean mammoth receptive organ;[8] and on the other hand it tragically refers to contemporary tele-cameras lying at ground level, that continue to film a war scene, one of the many conflicts that devastate the planet, from an unnatural yet optically coherent position, even though the camera man has already been wounded if not killed.

Yet more figures silently strike our imaginary vision. As before, they

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See. S. Beckett, *Film, complete scenario, illustrations, production shots*, New York 1969.

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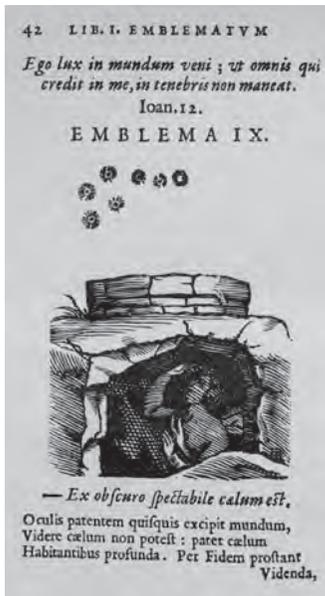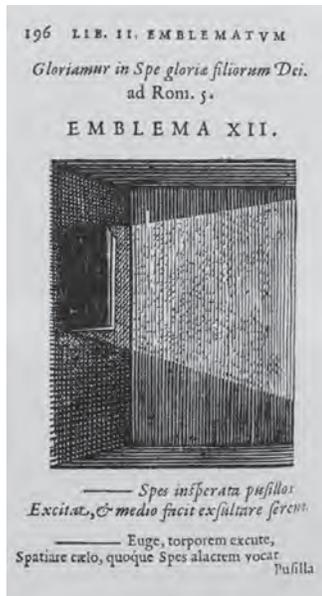
See George Berkeley, *Teoria della visione*, edited by P. Spinicci, Milano1995.

5, 6 G. Hesius, *Emblemata sacra de fide, spe, charitate*, Antwerp 1636

are taken from a film—*Film* (1965), directed by Alan Schneider, adapted from Samuel Beckett's script—that is just as neglected by mass culture but is concise in its provision of interpretation on the eclipse of observing the subject.[9] Here, un unrecognisable, pale Buster Keaton, no longer wearing his sad clown outfit, is initially shown walking the streets of a city in ruins (post atomic New York?), trying to avoid accusing or simply questioning glances of passers-by: the continuous rebounding between *standard* shots and *point-of-view-shots* – in this case with a dirty and cataract lens – destabilizes the spectator's expectations, showing a character who is terrorized by the gaze of others. Keaton's intermittent movements reveal a deep fear for all that an image could disclose, perhaps an image *par excellence*, unknown by definition; the same blindfold that covers one eye leads us to imagine that the erasing of one of the two organs of sight could have been self inflicted to reduce the high level of shock connected to the act of observing and especially to the act of 'seeing oneself see': it does not seem altogether fortuitous that the blindfolded eye is actually the left one, almost as if the dissection of the organ of sight executed by Buñuel on the passive and silent Simon Mareuil, had migrated to Keaton's body, via filmatic and conceptual osmosis, to inflict the stigmata of the modern eclipse of the anthropical gaze upon him. The protagonist continuously seeks refuge and literally withdraws into himself each time his gaze meets any decorative element, in a desolate domestic interior, that could reflect his likeness or that could assume animistic human forms. This suggests a dreadfulness connected to sight. The photographic reproduction of a sculpted Sumeric face with disquieting eyes of absurd proportion and the only mirror in the room covered by a black cloth as if in mourning, induce a coagulum of a misanthropic and claustrophobic senses in the development of the short film which mysteriously dissolves at the end when, upon awakening from a light sleep, Keaton encounters the gaze of his *doppleganger* [7]: real terror erupts in recognizing ourselves, reflected in an absurd carapace, as belonging to a world where nothing is known, all is imagined, even if made up of pretences. It is not by chance that the *incipt* of the film, completely silent, is entrusted to the words of philosopher George Berkely, "*esse est percipi*", which is to say, "being is equivalent to being perceived".[10]

The undraping of the cloth could then be tantamount to the lifting of Mâyâ's veil, however without that cathartic value, more precisely of emptying out, that one recognizes in vedantic mysticism where it shows us how illusory reality is, how the only way to cognition is that of entrancement. As Elemire Zolla observes, it is in a psychic state defined as *samândhi that* this unveiling takes place, when the mind "*... is not distracted by roaming eyes, by avid hearing, by a greedy tongue,*

E. Zolla, *Archetipi*, Venice, 1990, p. 8.

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12

See J. Crary, *Techniques of observer. On vision and modernity in the nineteenth century*, Cambridge (Mass.) and London, 1995.

13

See L. Selfe, *Nadia. A case of extraordinary drawing ability in an autistic child*, London 1977.

7 Stills from, *Film (1965, starring Buster Keaton)* directed by Alan Schneider, screenplay by Samuel Beckett

by the tension of the skin, and, descending into the intimate, by inces-
sant reminding, by restless imagining,"[11] in an *ante-litteram* Cartesian
state. There is no one that sees like the mind, which, in this condition
of mystic ascesis, affirms "I am", disowning the more usual "I am this",
"I am that", and emerges enriched from the physiological detachment
of reality because it expands beyond every perceptive limit: it no lon-
ger deals with a vigilante organ, sustained by ethics – that will end up
becoming aesthetics – of rationality elevated to scatological dignity.
In the West the mind, and especially sight, undergo the sensations of
the outside world and attempt to establish a documental contact with
it which is metric-projective in nature, ignoring the archetypal aura.
Undeniably, over the course of centuries, human sight, referred to as
a mechanical experience of registering images, with Descartes (and
previously by Johannes von Kepler (1571-1630), and then by John Locke
(1632-1704) and Gottfried Wilhem von Leibniz (1646-1716)[12], undergoes
a progressive 'devaluation'. Initially this is because of the physiologi-
cal inadequate nature of the sensory system, but successively because
technology begins to produce instruments that allow for the creation of
images in an independent way with respect to the human subject: sight,
already de-anthropomorphized by Kepler, will now become subordi-
nate to instruments that reproduce forms, even moving forms, through
the application of simple physical laws in a natural way, so to speak.

Already, perspective represented a sort of visual regimentation, a
geometric structure, that allowed for the imposition of rules and limita-
tions on direct vision, translating the perceptible experience of percep-
tion of space into an icon, in its one 'sanctimonious' two dimensional
projection: but the anthropic filter that characterized its modality of
expression – the being run by sentient capacities, of the artist's choice
and judgement – historically guaranteed it a sort of proud revenge with
regard to all of human nature of its own making. It may appear para-
doxical, but the very images that are produced in a controlled manner
in the interior of a *camera oscura,* although considered conventionally
more 'natural' or 'optically' correct, can turn out to be, in short, the most
abstracted to perception: seeing that it is difficult to gain access to such
data, the blunt, harsh exposure of one's own or someone else's retinal im-
age, restored with extreme care using pictorial measures, assumes patho-
logical more than physiological characteristics, as the studies on autistic
perception by Lorna Selfe explain.[13] "That which is crucial for the *camera
oscura* is its relationship between the observer and the indifferent, the un-
defined expansion of the outside world, and how its apparatus systemati-
cally carries out a cut or delimitation of that field, making it visible with-
out sacrificing the vitality of its being. Yet movement and temporality, so

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Ivi, p. 34.

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Ivi, p. 39.

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J. Locke, *Essays on Human Understanding*, edited by A. Campbell Fraser, New York 1959, I, ii, 17.

17

J. Crary, Techniques of observer, cit., p. 41.

18

Representative dichotomy is taken from Leibniz (in Id., *Monadology and Other Philosophical Essays*, tran., P. Schrecker, Indianapolis 1965, pp. 157 fol.), when the philosopher to the different perceptions of the body on God's behalf and on man's behalf: in the first case, one has access to a representation defined by the author as *scaenographia* (perspective), in the second to *ichnographia* (that is seen from above, and from a bird's eye view standpoint). See L. Marin, *Portrait of the King*, tran. M. Houle, Minneapolis 1988, pp. 169-179.

19

See AA.VV., *'A volo d'uccello'. Jacopo de' Barbari e le rappresentazioni di città nell'Europa del Rinascimento*, Venice 1999; also J. Schulz, *Jacopo de' Barbari's View of Venice: Map Making, City Vews, and Moralized Geography Before the Year 1500*, in "Art Bulletin" #60, 1978, pp. 425-474.

evident in the *camera oscura*, always precede the act of representation; time and movement could be seen and experienced, but never represented."[14] But on this occasion, the most interesting dialectic element that the *camera oscura* introduces, taken on as the first instrument that generates images that are observer-independent, is, above all, that of the disembodiment of the observing subject, definitively separating the act of seeing from the body of the user. As Jonathan Crary perceptively points out, this divorce permits the definition of the figure of "...an isolated observer who is closed in and autonomous within its dark confines. In an effort to regulate and to purify its relationship with the multiform contents of the world, by now 'exterior,' the *camera oscura* implies a sort of *áskesis*, or removal from the world. In this way, it becomes inseparable from a certain metaphysics of inner life establishing a metaphor, either for an observer who is a nominally free and sovereign individual or for a privatised subject confined in an almost domestic space, cut out from the external public world."[15] As Isaac Newton's (*Opticks*, 1704) and John Locke's (*Essays on Human Understanding*, 1690) studies show, a paradoxical operation is therefore possible through the use of the *camera oscura*: that is to say, the passage from physical instrument used to examine and register phenomenal data to psychic metaphor used to understand and interpret an individual's most hidden thoughts. In this way it becomes John Locke's "...studio of everything devoid of light,"[16] through which cognition is experienced. However, it seems evident that the role assumed by the observer in this device, in the gloomy room touched by a luminous diaphanous umbra, proves to be ambiguous: even if in Fifteenth century perspective the observer was allowed a limited space of mobility, with respect to the notorious *punctum optimum* foreseen by contemporary studies, inside which the images maintained their own projective coherence, "…the *camera oscura* did not impose a restricted place or an area with respect to which the image presented its full consistency and coherence. On the one hand the observer is disconnected by the pure operation of the instrument and is there as a disembodied witness to a mechanical and transcendent re-presentation of the world's objectivity. Yet on the other hand, his presence in the room implies a spatial and temporal simultaneity of the subjective and objective human apparatus. In this manner, the spectator is a fluctuating dweller of the darkness, a marginal supplementary presence independent of the mechanism of representation."[17] The different ideas of representation connected to these interpretative positions of reality – *perpsectiva versus camera obscura*[18] – can be well illustrated by two images: the first is a famous sixteenth century bird's eye view of Venice by Jacopo de' Barbari[19], that may be intended as an expression"…of the pre-Copernicus city, synoptic and all

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    J. Crary, *op. cit.*, p. 52.

21   C. Jenks, *The centrality of the eye in western culture*, in Id., edited by, "Visual Culture", London and New York 1995, p. 4.

22
    See A. Robbe-Grillet, M. Tansey, *M. Tansey*, San Francisco 1993.
23
    See M.C. Taylor, M. Tansey, *The Picture in Question: Mark Tansey and the Ends of Representation*, University of Chicago Press 1999.
24
    1625, Enkhuizen; 1654, Amsterdam.

25
    See D. Diderot*, Lettres sur les aveugles*, p. 319; and G. Berkeley, *Theory of vision vindicated*, sec. 71 (tran. it, *Teoria della visione*, edited by P. Spinicci, Milan 1995, pp. 110 fol.).

26
    The title refers to various paintings by Gustave Courbert, depicting the Louen river valley, at Ornans (France).

8   M. Tansey, *The Innocent Eye Test*, 1981, The Metropolitan Museum of Art, New York

9   M. Tansey, *The Source of the Loue*, 1981, Sandra and Gerald Feinberg collection

absorbing like a unified entity",[20] the second is that of any Venetian urban scene by Canaletto (eighteenth century), in which the author optical-ly reconstructs the image of the city through a collection of registered views from a *camera oscura* that scans the space, defined by Leibniz as a sort of nomadic observer, who finds order in the irrational chaos of the world through his auroral and objective vision: the most dyscrasic and imperfect binocular perception is substituted with the most asep-tic mono-focal apparatus guaranteed by the presence of the pinhole.

The idea of an observer presupposes the presence of a subject placed in front of or behind the observed object, with one separated by the other by a physical gap. This order of pawns on a chessboard, emphasized by the modern culture of the image, has historically lead to a reduction of the experience of sight to pure perception, to "…a strangely self-inflict-ed mono-dimensionality and to a limiting abandonment to a natural order,"[21] of which we are all more or less aware. Thus, vision, traced back to pure mechanical process, contaminated by desire, by imagination and by necessity, produces the illusory idea of an 'innocent eye', which both Ernst Gombrich and Nelson Goodman brand as a 'blind eye'. But does an innocent eye exist?

The painter Mark Tansey[22], attempts to respond to this question in his well-known study[23] postulating the end (or ends) of the repre-sentation. In order to do this he turns to the use of figurative language. Tansey's *The Innocent Eye Test* (1998; The Metropolitan Museum of Art, New York) [8] shows a bovine intent on scrupulously examining an unframed Paulus Potter[24] painting that is displayed in a gallery. The animal does so under the austere gaze of historians and scientists who are supervising the experiment. By reviving the Cartesian bovine, this time alive and not artificially reduced to a constituent element of a *camera oscura,* Tansey brings back the utopic innocence of sight, to which both Denis Diderot (1713-1784) and George Berkeley[25] (1685-1753) often made reference – perhaps similar to that of the young fourteen year old, blind at birth, whose sight was restored in 1782 after a successful cataract surgery performed by Dr. William (1688-1752) – to a metaphor on the fruition of art, in which scientists question how and what we see. The futile erection of walls – symbolic and liter-al – that inhibit the false perception of reality are assumed by Tansey as pictorial material in *The Source of the Loue* (1990; Sandra and Ger-ald Feinberg collection)[26] [9] where the Platonic cavern in which the myth unfolds is definitively sealed and its entrance is surrounded by barbed wire: so closes a chapter on imaginary vision that individuated the *falsa credita* in the shadowy projections of sensorial cognition.

Sight represents, in Western civilization at least, the privileged

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See W.T. Mitchell, *Iconology: Image, text and ideology*, Chicago 1986.

28

"ιδεα, exterior point of view, point of view, perspective, figure, form". See L. Rocci, *Vocabolario Greco Italiano*, Rome 1935, p. 905.

29

C. Jenks, *The centrality of the eye in western culture*, cit., p. 1.

30

See M. Foucault, *Nascita della clinica. Una archeologia dello sguardo medico*, Torino 1998; Id., *Sorvegliare e punire. Nascita della prigione*, Torino 1993. See also R. Evans, *The fabrication of virtue: english prison architecture, 1750-1840*, Cambridge 1982.

31

See A. Barry, *Reporting and visualising*, in C. Jenks, edited by, "Visual Culture", London and New York 1995.

channel of access to the external world: if on the one hand it is consid-
ered as the king of the senses – autonomous, independent and inno-
cent – on the other hand it is necessarily encrusted with worldliness,
inevitability resulting as externally directed; therefore it is possible to
distinguish between the idea of sight and idea as sight.[27] The same ety-
mology of the term 'idea' shows its root in the verb 'to see'[28], reminding
us that "…the way in which we think in Western culture is driven by the
sight paradigm. Seeing, looking and knowing have become dangerously
interchangeable. Thus the way in which we have ended up understand-
ing the concept of 'idea' is closely linked to terms such as 'appearance',
figure and image. As the 'first' Ludwig Wittgenstein (1869-1951) de-
creed: "An image is a 'fact'. And 'a' logical image of facts is a thought."[29]

The implicit risk in this dichotomous acceptation of sight was al-
ready branded by Michel Foucault (when individuating the seeds of the
modern idea of the disparagement of sight. This was done during scopic
processes of authoritative observation and hierarchal documentation
of sanitary and criminal phenomena. The medical clinic model allowed
the French sociologist and philosopher to catalogue single individu-
als. More significantly it allowed him to extend the surveillance to the
entire urban space monitoring the hygienic and climatic quality of the
city, its dense habitat, and the migratory flows to which individuals were
subjected etc. Even more so, Foucault uses the *Panopticon* as the most
important instrument of scopic surveillance. [30] He recognizes its partic-
ular features, not as much for the fact that invisible supervisors or guards
were present – that 'centrally' and radically controlled the activities that
took place in the cells or dwellings – , as for its specific architectonic
configuration that induced a condition of permanent visibility sufficient
enough to assure, in an automatic way, the success of the coercive action.
Panopticon can be considered an example of 'inhuman technology', a
type of translation of the principles of operation of the *camera oscura*
to a prison scale. This is because the power of the supervisor – or of
the observer – is irrelevant with respect to the operation that the scop-
ic mechanism activates. In addition to these brief considerations, the
control of increasingly more vast areas, involves the use of technologies
and therefore of 'inhuman' methods of environmental surveillance – ,
according to Andrew Barry's[31] definition – such as *contour recognition*.
Thus one understands how the question of technological sight that
witnesses events documented elsewhere are central to the disembodying
act which was referred to earlier: the impersonal and material charac-
teristics implied by cognition, information and visualization connected
to an act of remote documentation, establish modern criteria accord-
ing to which truth is closely associated with vision. "It is true that that

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10, 11 Philibert de l'Orme, *Le premier tôme de l'Architecture*, **1567, The Good Architect (f. 382); The Bad Architect (f. 331)**

32

Ivi, p. 54.

33

See B. Pedretti, *Lunario dell'architettura 5: l'immagine cieca*, in "Casabella", n° 593, settembre 1992.

34

Actually in 1657 edition of *Le premier tôme...*, the two xylographies were placed at the end of the ninth book, and only in the successive editions they were placed below the text, at the end of the eleventh chapt. See A Blunt, *Philibert de l'Orme*, edited by M. Morresi, Milan 1997; P. Potié, *Philibert de l'Orm. Figures de la pensée constructive*, Marseille 1996.

35

See J. Trilling, critical review R. Sennett, "The conscience of the eye: the design and social life of cities", (New York 1990), in "Design Book Review", n° 23, winter 1991.

which can be seen is rendered visible. But how can an observation that occurs in another place be taken on as certain grounds for an action?"[32] Can the answer be found in the 'blind' faith in the documentative and objective value of the non-human or human testimony that technological means of surveillance and production of images produce?

Why then, as Bruno Pedretti notes,[33] is the so-called civilization of the image relentlessly attracted by the blindness and by the metaphors connected to it? Above all, why is contemporary architecture attracted to the same?

Going back a few centuries one can recall how Philibert de l'Orme (1514-1570) sustained that in the rich supply of sensory organs, especially those of sight, a sort of overgrown sublimation of vision, resided the difference between the good and the bad architect: the two xylographies, in annotation to *Le premier tôme de l'Architecture* (1567),[34] show the bad architect in one [10]. He is dressed in the deceiving clothes of a sage and scholar, yet proceeds with haste, getting caught between the brambles, in a landscape that is punctuated with the presence of bovine skulls – symbolic of obtuseness – , and with a late gothic castle, indication of a style that has been surpassed. The absence of his hands, nose and ears alludes to his professional impotence and to his incapacity for logic. But, the element that is worth noting here is the absence of his eyes, that render him blind to the truth. In the second xylography [11], the good architect is also wearing the clothes of a sage, but in a manner that shows awareness. He is endowed with three eyes: with the first he contemplates God and his past works, with the second he reflects on the present in order to act with wisdom and with the third he predicts the future defending himself from possible accusations and calumnies connected to dealings with work. Here the setting is decidedly classic as symbolically testify by the ruins of a roman arch (the past source of learning), the solid rustic building (the *firmitas vitruviana*), the prayer temple (a place of necessary spiritual refuge) and the domed temple (perfection of the central plan), but also the source of wisdom and Cornecopia, symmetrically placed at the bottom part of the xylography. Today it seems that architectural procedures have lost this sensorial trinity, overcome by total blindness where objects are concerned. Or perhaps the objects' lack of transparency has the same effect, not allowing human sight to pass through them, with sight being considered always more vicarious with respect to technologies of representation, modelling and pre-figuration of reality: turning two the words of Julia Trilling, [35] it seems that contemporary intellectuals, including architects, "…can't use their eyes to see the complexity of life," often denouncing their role of privileged observer, disembodying the act of seeing and that of representation. Is it therefore by choice that

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The building is situated on Main Street in Venice, California.

37

See P. Francastel, *Lo spazio figurativo dal Rinascimento al Cubismo*, Torino 1957.

38

In particular, see stories "Le Montagne della Follia" (1936) and "L'ombra calata dal tempo" (1936) in H.P. Lovecraft, *Tutti i racconti 1931-1936*, Milan 1992.

a monumental sculpture by Claes Oldenburg (1929) and Coosje van Bruggen (1942-2009) showing a pair of binoculars with lens turned to the ground, was placed in the entrance of the *Chiat/Day/Mojo* building,[36] advertising agency building, designed by Frank O. Gehry (1929).

Can the complexity and multi-stratification indicated by Trilling lead to a shutting down of the contemporary architect's, or users of their works, channels of perception? Are these works so autistic in providing for the 'client' and not the observer, in acknowledging an evaluation of the function of architectural structures and of their superficial action rather than a look at more profound reasons for the way in which they were made?

Signs from architecture and urbanism explicitly indicate that a unitary and cosmogonic vision that can be incarnated and tectonically translated into forms of buildings and cities, no longer exists. Thus objects opacify, in spite of wasteful glass surfaces and of bio-morph configurations: if it is historically true that architecture has always been drawn first and then constructed, as Pierre Francastel's aphoristic affirmation with relation to the Renaissance[37] states, it follows that even the actual urban and architectonic scenario was first imagined and then realized, but according to the way in which human sight has a limited space of survival. In looking at some contemporary architecture it is impossible not to think back – with the eyes of the mind – to the buildings that populate some of H.P. Lovecraft's stories.[38] According to the author they were constructed in a past of which man cannot and must not commit to memory: their unconceivable dimensions, the absurd inclinations of their floors, the repulsive expansiveness of their openings, the non-functional furnishings, the malicious projecting corners, are all elements that describe visually intolerable spaces. It is because they were designed and executed by physiologically abnormal and sensorially deformed pre-human beings. However, with a few exceptions, softening the use of adjectives and without being so dramatic, the same definitions could be used to describe some of the most published contemporary architecture. Past evidence – a form of disparagement of sight on an advertising scale – provided by architectural magazines induce a sort of benevolent narcosis effect on the observer who considers his/her freedom of judgement ever more restricted: yet how many of the illustrated architectural structures belong to the rare genre of places in which the observer is confronted with the limits and of the potentiality of his sight? In which of those spaces can we find ourselves as 'seeing oneself see', reflecting on the physiological and interpretative capabilities of our own sensorial organs?

"...It was a consistency.
I seemed to be able to reach out
my hand and touch it.
It was so intense.
The darkness was so intense..."

/   *Charles Duke Jr*., Astronaut and member of the
    Apollo 16 space team.

39

James Turrell was born in Los Angeles, on May 6, 1943, son of an aeronautical engineer of French origin who immigrated to California in the 20's, and of a Quaker woman, from whom he inherited a profound religious belief. In 1965 he obtained a diploma in the 'psychology of perception' at Pomona College. At the same time he developed a strong Interest for mathematics, astronomy and geology, as well as for painting, sculpture and the history of art. For many years his passion for airplanes and photography, passed on from his father, constituted his only source of Income for survival and to fund his Installations. James Turrell's mature work dates to around 1966, when the artist rented the Mendota Hotel, Ocean Park. He used it as his living quarters and studio, transforming its interior into an ideal container for his first installations. In 1968, along with Robert Irwin, he was asked to participate, in the Art *& Technology* promoted by the *Los Angeles Museum of Art* and conceived by Maurice Tuchman: it was then Turrell became in contact with Dr. Edward Wortz, a theoretic physicist afferent at the Garrett Aereospace Corporation, with whom he developed the study of several sensorial deprivation techniques.

40

F. Fröhlich, *The location of light in art: from Rembrandt to Op-Art and Light Environment*, in "British Journal of Aesthetich", vol. XI, London 1971, p. 60.

41

G. Panza di Biumo, *Natura, land art, ambiente*, in "Lotus", n°89, Milan September 1995, p. 91.

PART TWO: "A PLACE IN WHICH ONE
CAN SEE ONESELF SEE"

If one searches for an answer, I believe one can find it exactly in those expressive circles in which art meets with science and architectural experiences: the most emblematic case is that of James Turrell's[39] work. His installations and environmental scale designs establish intense co-action with the observer who, overexposed to luminous carefully studied stimuli, modifies his own perception of space. The process of interaction with the work pushes us to accept our own visual capabilities, to ask ourselves with greater insistence if that which we are perceiving actually coincides with phenomenal reality: our eye still functions in a Cartesian manner, but now an interpretative effort is demanded of the sentient capabilities of the observer so as to understand that that which he is seeing is his way of seeing. It deals with an hermeneutical approach to the subject of vision and light – from which the former is derived – , that can only briefly be fit into a well established stylistic trend like that of *Light-Environment Art,* whose goal is to submerge the spectator in the radiant and shady flow that is generated by light: in this expressive context, the work, "… does not represent nor cause the light, but is physically made of light"[40].

The compositive nature of James Turrell's installations restore that intangible and unique character that is typical of luminous radiation: such works cannot be purchased, displayed in one's living room or, in the traditional sense, in a museum, they occur. They have the characteristics of a *happening* in which many artists often interact. They are responsible for the production of sounds, noises, and smells that resonate and perceptively envelop the spectator in a fruitive sequence whose goal is to suspend the awareness of self. "This process establishes a relationship between the artist's quest and the environment that becomes the instrument with which to create the piece. This is no longer colour, the brush, the canvas; but walls, spaces, light, openings that lead to the exterior as in the constructions of an architect."[41]

James Turrell's works are highlighted in particular for the use of light and shade as sensorial territories in which man can cancel out his own physiological limits and explore his own interior dimension.

42

C. Adcock, *James Turrell. The Art of Light and Space*, Berkely 1990, p. 8.

43

Most of the time, the projector is found on a small platform, suspended from the ceiling by metal chains; in several installations the images are projected through a hole made in the ceiling. Turrell also used slide-projectors with xenon bulbs that draw the behaviour of a punctiform source near with greater precision consequently guaranteeing a more clear and ample projection.

Turell recognized the area of his work in the hazy confines between light and shadow right from his earliest works: in particular, the *Cross Corner Projection* pieces begin a subtle game between the role of the environment and the revealing, or even disoriented action, of light. Some appropriately perforated metallic sheets, in slide format, are projected according to precise angulation, on corners and immaculate walled surfaces that are immersed in darkness. In one case, only one projection is revealed to deal with one solid luminous area, with fading edges; in the other case, a window or an unusual skylight, apparently inundated with brilliant light shows the impossibility to look out from it. And even though the definition of optical illusions doesn't enter into Turrell's poetics, the consternated effect that the appearance of these works provoked was extraordinary. With regard to them, Craig Adcock writes: "The impact of all the *Cross Corner Projections* is a function of their interaction with space. The brilliant light seems to exert a non physical pressure – even though perceptive – on the dimensions and the form of the room in which it is projected".[42]

Turrell created the first installations of this series in some rooms of his studio (the ex *Hotel Mendota,* Ocean Park, California). The rooms were transformed into pure box-shaped forms, with painted white plastered walls and with acoustically insulated ceilings; any windows were walled up. A beam of light, created by a slide projector with quartz halogen bulbs,[43] was directed towards a chosen room, in a given area, creating the illusion of a form in relief, suspended between the floor and the ceiling: in *Afrum-Proto* (1966) one perceives the image of a luminous parallelepiped anchored to the dihedral which is formed by two vertical walls; the illusion that the floating luminous form is real is accentuated by the fact that the observer, shifting within the room and placing himself at a certain distance from the projected light, perceives the alternation of the apparent contour of the parallelepiped in a physiologically correct, even though illusory, manner. A different focalisation of the light image can also create the illusion that a mass is either in the room or outside of it. It can also alter the perception of the exact collocation of the centre of the projection that, in general, is placed along the direction that is defined by the diagonal of the space, precisely in the opposite angel of the room. As mentioned earlier, the relief effect is obtained by channelling the projector's light through a metallic plate that was opportunely perforated: in the case of *Afrum,* the perforation has the form of an irregular hexagon that, if projected on a wall in its entirety, would appear as an enlarged image of its same shape. Instead, directing the beam of light towards the corner of the room "…will have the impression of a mass that seems to behave according

44

C. Adcock, *James Turrell. The Art of Light and Space, cit.,* p. 12.

45

The *Ganzfeld* is a total perceptive field
that produces sensory alterations, that can
sometimes even be found while looking at the
sky: indeed, "when there are objects in the sky
– clouds, aeroplanes, telephone poles, stars – ,
it seems transparent, but when it is empty and
illuminated by sunlight, it is presented as an
essentially undifferentiated field of blue whose
distance and position is difficult to estimate.
". See C. Adcock, *op. cit.,* p. 137. The *Ganzfeld*
can also be interpreted as a 'nothing field',
that can appear to be of infinite depth to some
observers, or capable to induce an 'internal'
hallucination, an image without space or
content.

to the laws of linear perspective. When the images are projected into the corners, the ambient light directly reflected from the illuminated area, makes the intersection of the walls that are above and below the images, seem like they are actually placed behind the apparent mass."[44]

Attracted by these forms, hypothetically floating in space, by these 'non-Euclidean shapes,' the observer suspends judgement, now having the illusion of three-dimensional forms, now recognizing their nature of flat images; for Turrell this flexibility of the work to sympathetically react with those who observe it connotes his work as a 'perceptively malleable' art. That is, it is ready to redefine its own territories and those that are traditionally destined to the spectator. This takes place since the same space that hosts the projection sensibly modifies – or at least appears to modify – its own spatial attitude once a *cross-corner projection* appears. With this acceptation, it is possible to find the only potential connection between the 'forms' created by Turrell's works and the virtual spaces portrayed in traditional representative art; both of these create the illusion of a three-dimensional space that does not coincide completely with the phenomenal space. This theoretically quiet and serene interaction between light, shadow, and space has been translated as a work of ambiguous deciphering on the part of its users. In 1980 the artist, along with the Whitney Museum of New York where the work was shown, were sued by numerous visitors who, having been victims of the deception, had reported lesions or fractures incurred due to attempts made to enter the *City of Arhirit*, an installation of filtered solar light that exploited the *Ganzfeld*[45] effect of a total field of vision. This process of isolation of light cut out from common perceptive experience induces a new – perhaps subdued – understanding of the cognitive processes that are normally taken for granted. For Turrell, this sensorial re-awakening, in some ways *Gurdjeffian,* makes 'seeing the act itself of seeing' possible for the observer: in this way, he is on the edge between rational cognition and intuition, between tangible reality and immaterial dream, continuously obliged to evaluate cultural trappings in order to be able to transcend them. According to Turrell, it is also important to have access to the pre-cultural state of vision. When isolated from its context, sight returns to its archetypal and functional role, almost tactile, thanks to which, by observing the blue side of the basin of a crater or by sitting in an almost totally dark space, either an average person, an astronaut or a physicist can experience something similar to that of the amazement of an infant. "The revealing experience lies in the understanding of how our senses are reacting, more than in that which we see. It is by choice that Turrell himself reputedly affirmed that his goal is to continue reconstructing the Platonic myth cavern, until its secret is continuously

46

F. Bergamo, *Un altro orizzonte: il progetto dell'Irish Sky Garden di James Turrell*, degree thesis (unpublished), Venice 2005, p. 3.

47

Skyspace is usually made up of a room of a variable planimetric shape, with an open skylight in the intrados of the floor slab that puts the room in direct contact with the exterior. The viewer, sitting on the bench which perimeters the internal space, is unable to make out the ceiling's thickness. This is thanks to the particular creation of the skylight's border. This effect of total perceptive field (*ganzfeld*) gives the viewer the impression that the sky rests directly on the floor slab. See C. Adcock, *James Turrell. The art of light and space*, Berkeley, Los Angeles, Oxford 1990; AA.VV., *James Turrell. The other horizon*, Vienna 1999.

48

R. Bright, *When light is lost, life is lost*, in Id., edited by, "James Turrell Eclipse", Londra 1999, p. 10.

49

As is known, it deals with a space of variable dimensions, totally impervious to light. A small hole is made (stenope) in one of its vertical walls. Its exact function is to capture external light and to project objects that are found outside of the room itself onto the opposite wall to which it is placed. Above all, the *camera oscura* seems to be an instrument that favors observation, that facilitates drawing, allowing for a more precise reproduction of reality: in a few words, to become a mechanical surrogate of the physiological process of vision.

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Paul Klee as quoted in, P. Virillo, *Sight without eyesight*, in AA. VV., "James Turrell. The other horizon", cit., p. 218.

unveiled."[46] For example, this tactile characteristic of sight is revived in Richard Bright's description of the experience undergone in observing the diurnal sky of a *skyspace*[47] entitled *Air Mass* created by Turrell at Hayward Gallery (London) in 1993: "Its colour was so intense: I'd never seen it so blue. I couldn't touch it, at least not with my hands, but I could with my eyes. It had to do with an internal drama. I could sense its changes, while it became increasingly darker. But was that colour only a memory, or perhaps a dream? Now it was black, a black that was so intense that it could make you crazy. I couldn't see the stars when I looked through the opening, but I knew they were out there. But it wasn't an empty darkness: it was full of something that came from the past and it had the potentiality of something that had yet to take place."[48]

In this way, the *camera oscura*[49] in Turrell's work, metaphor for disembodied sight, becomes a place in which our senses are stimulated to the point of inducing a new visual and gnostic awareness in the observer: with respect to the prevailing fruitive model – seconded by modern digital surveillance technologies – within which "the objects now perceive us",[50] here the mineral world of robotized vision is undermined by animal sight. As in the Homeric tale, in which Ulysse's dogs eyes are the only ones to recognize his owner who appeared before the Proci under false examining, so in the Californian artist's subterranean rooms, is it the organic human gaze that demonstrates the fallacy of the Cartesian model of cognition through evidence: in its most pure alchemic meaning, this time sight is so de-valued, that it is restored to the *albedo* of its original nature.

Even though Turrell's work is similar to that of other American minimalist artists who use light as artistic medium – for example Dan Flavin (1933-1996), Bruce Nauman (1941) etc. – , it demonstrates certain aspects that are completely original. Above all, the images have a strong *aural* characteristic. They seem to imply a founding ritual of space, which is based on the revelation or on the removal of light. These works are also noted for the difficulty of representation in drawing as they are all based on the fading out of the confines between reality and imagination and on the ambiguity of perception.

In 1974, James Turrell chose the Roden Crater [12] as venue to express his creativity. From that time onwards it has been the premise for his most ambitious and fascinating work. Roden Crater is an inactive volcano, which is located on the edge of the Painted Desert, in Arizona. This Crater's underground 'body' was selected for the creation of adjoining and totally subterranean rooms from which one could experience numerous celestial phenomena and the alteration of visual and acoustic perceptions. The interest shown by various worldwide research organizations (Nasa, *in primis*), in this almost complete architectural complex, lies

12

New York studio *Skidmore, Owings and Merrill*
presently deals with the creation of the Roden
Crater project executory drawings.

12   Roden Crater view from south-west, Arizona
     (© photo by Agostino De Rosa)

in the complex and stratified nature of the concepts of spatial configuration and perception that Turrell's work involves, reinforcing the interdisciplinary nature of making architecture, once again definable as a place where art and science can find mutual correspondences for exchange.

The work is stylistically located in the so-called Californian Minimalist *milieu.* However, unlike works by artists such as De Lap, Mac Cracker and Gray, that created pieces with rigid materials – whose perceptive complexity was derived from cast shadows and from reflections generated by physical forms – , Turrell's works, right from their beginnings, are characterized by images of light that create floating forms composed of intangible materials *par excellence*, that is light. Turrell's intent is that of materializing light, to use it as a physical element and to take advantage of visual perception as a means to understand his art. The integral part of this work is the transformation of the crater into a large-scale work that will be related, by means of light, to the surrounding environment. For the actual projection Turrell turns to the collaboration of architects and engineers[51], while, for that of cardinal and astral orientation of the individual spaces, to the help of archeo-astronomers. Even though it is monumental in dimension and conceptually unprecedented, the Roden Crater project was not conceived to commemorate events of historical recurrences, but wants to be a type of place in which human perception is celebrated. For Turrell, it is the synthesis of years of intense work: actually, here, the artist's goal is to take advantage of studies and ideas that inspired his preceding installations and to use them in this masterpiece in such a way as to be able to benefit from the visual quality associable with natural day and night time light. Light, the cornerstone of the entire project, penetrates the entire interior crater body through openings and tunnels that are almost invisible from the exterior: the various stairs function as bellows of light, the bodies of subterranean pools act as lenses and the tunnels as optical ducts that exalt the images of the Sun and Moon. The form of the spaces, that represent the entire project, is not determined by aesthetic principles, but rather by the space's principle function: that of capturing, directing and conserving light.

The structure was entirely thought out in reinforced concrete even if the use of local natural materials like sandstone, basalt, and volcanic ash is foreseen for the art spaces and pathways. As mentioned previously, the Roden Crater is a natural inactive volcano – which last erupted between 1864 and 1865 – located about fifty miles north east of Flagstaff, Arizona. It is surely the youngest mountain of a vast volcanic region that is still quite active; at one time it belonged to a rich tycoon, owner of the entire estate that, after years of constant negotiations, decided to sell it to the artist. A pre-established route will not exist

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13   Interior view of Alpha tunnel (© photo by
     Agostino De Rosa)

14   View of Alpha Space (or East Portal) from the
     Alpha Tunnel (© photo by Agostino De Rosa)

15   View from the Crater bowl of the Alpha Space,
     Roden Crater, Arizona (© photo by Agostino
     De Rosa)

within the crater. Nothing will be imposed as each space will present extraordinary phenomena at every moment of the day and night.

Arrival to the site is an integral part of the project. There are various ways to reach the crater: one can get there from the West, by crossing the flat expanses of the *Painted Desert*, on a road that leads to a gorge situated on the north-eastern side. From there one proceeds on a path that follows the ridge of the fumarole, situated at a height of about seventy-five meters with respect to the desert. From here there is a route that goes up to the slopes of the crater where one can enjoy a progressive sensation of expansion of spatial vision. An alternative and more efficient way to reach the crater would be to get to the Sunset Crater National Museum by car from the North, more precisely from Flagstaff, and head east to the site from there. During this journey, one can observe many mountainous peaks that are part of the San Francisco volcanic park. From the base of *Sunset Crater*, Roden looks like an inclination that gradually descends towards the Painted Desert. Twenty miles still separate Roden Crater from *Sunset Crater*. During the crossing one will come upon several natural parks before arriving at a depression where one is constricted to abandon ones method of transport and proceed on foot. The complexity of these itineraries is important as it provides an articulated temporal and visual scenario that will remain imprinted in one's mind for a long period of time.

The creation of an aviation field for the landing and taking off of small planes has been foreseen. This will provide another way in which to arrive at the site. It will be a way to observe the entire complex in its ensemble from the sky.

This grandiose project has not been completed in its entirety [13-17]. The removal of desert land and of imposing lava obstructions – necessary operations for the construction of the subterranean rooms – demand considerable economic investments, which Turrell meets through the sale of his works. Above all costs are met thanks to generous financing by collectors or by private foundations. The ascertainment of the long period of time that it will take to complete the Roden Crater Project gave birth to the idea of creating an interactive digital model of the entire complex. This idea came about as the result of scientific co ordination on the part of IUAV University of Venice and myself. Critical and documental descriptions – whether from the figurative or techno-scientific point of view – of the role that light, shadow and the reading of celestial phenomena plays in the definition of James Turrell's architectonic spaces will be a result of this combined effort. The outcome of this research, conducted by close contact between the Venetian team[52] and the Californian artist, has been available for viewing in the spring of 2006 in an exhibit at Galleria Gino Valle, Venezia; in a exposition at Villa Panza,
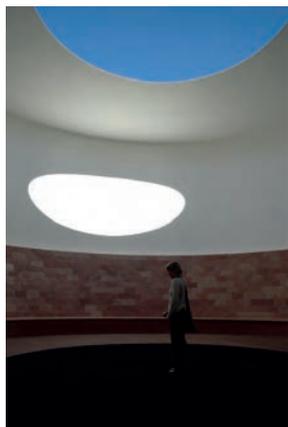
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17a
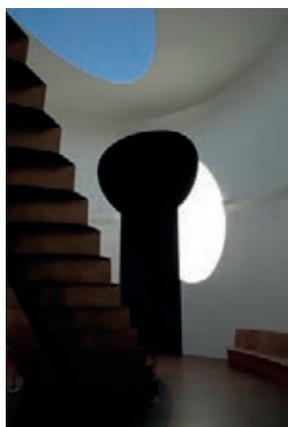
17b

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  Sound composed by Maria Pia de Vito
  (voice, live electronics) and Michele Rabbia
  (percussion, live electronics).

16   Interior view of Crater's Eye, Roden Crater,
     Arizona (© photo by Agostino De Rosa)

17   Alpha Space (or East Portal), Roden Crater,
   Arizona (© photo by Agostino De Rosa)

Biumo Superiore, in 2008; and expecially in the amazing exposition
held in Palermo, at Galleria Nazionale di Arte Moderna, in 2009. Above
all, in addition to digital reconstructions of each one of the individual
installations, the unprecedented combined methods of so many find-
ings that were involved in Turrell's work will also be shown. This will
define the roles that the project and its geometric representations play
in the interior of a constructed space that is situated between architec-
ture tout-court, environmental-landscape and archaeo-astronomy.

The presentations have showed executive drawings, relative to each
individual space, on panels where the various relative scientific – astro-
nomical implications will be highlighted in clear and rigorous language.
Beyond this, it will offer the spectator the possibility to understand real
spatial functioning in relation to cardinal and astronomic orientation.
Thanks to three-dimensional physical models created in nylon powders,
but above all through the use of high level Info-graphic digital animation,
it has actually been possible to virtually move about through the rooms
of the Roden Crater project, and in an alternation of day and night time
simulations, to discover which constellations or celestial and luministic
phenomena to be experience in them. The exhibits also showed a series of
documents relative to those that can be defined as historical antecedents
of the project. Turrell himself recognizes them as Inspirational sources
for his work: the large *khmer* settlement of Angor Wat (Cambodia) the
Eighteenth century observatory planned by maharaja Jai Singh in Jaipur
(India). Both are shown here in an unprecedented digital and multimedia
guise, thanks to which the visitor can ideally 'move' within the interior
of the architectural structure that define its spaces. The expositive and
acoustic setting[53] – expressly planned – aimed to immerse the user in a
unique spatial and sonorous continuum, capable of focusing his atten-
tion on particular perceptive experiences altered by light and shadow,
in harmony with James Turrell's work. In particular, the characteristics
of the rooms [18] from which digital clones were reconstructed are:

North Space is a space that is located in a complex part of the crater:
directly connected with the *West Space*, in the west, and with the *East
Space*, in the east. It consists of three principle underground elements.
The first corresponds to a cube shaped room in which a large square
skyspace is located. It is similar to the one that Turrell planned for the
Italian installations located in villa Litta near Biumo Superiore (Panza
and Biumo Collection, Varese); the second consists of a *piazza* from
which a large stairway leads to the base of the mountain. Also, from this
intermediary place, a curvilinear path under an open sky leads to spaces
to which the North Space is connected. The third element, certainly
more interesting, is represented by a circular room that functions as a
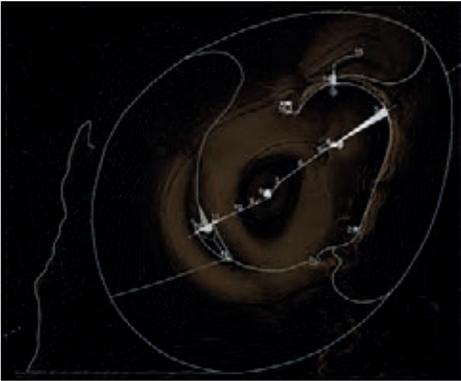
18
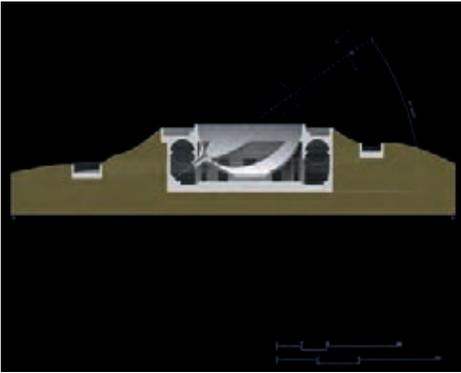
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"*Dark Spaces* are spaces that are completely
dark, usually soundless and almost anechoic.
They are accessed through a filter-route to
then proceed to take a place in a position
from which one observes moving projections
that are of very low luminosity. The required
duration is of at least fifteen minutes. For the
first ten minutes the internal visual situation
is conditioned by the images of the external
environment that were previously memorized
by the retina: it deals with an experience to
which one usually pays little attention because
we generally immediately substitute a 'strong'
image with another one. As they vanish, the
visual experience becomes softer and the
faded projected images begin to become
confused with the idioretinal ones until they
become progressively defined. These works
also serve as instruments to explore the
confines between that which one imagines
seeing or that which one sees with one's
imagination (even in so called 'lucid dreams'
that mostly involve the peripheral area of the
retina) and that which one sees 'physically'".
See F. Bergamo, *Un altro orizzonte...*, *cit.*, p. 8.

18   Roden Crater project, overall plan

19   Longitudinal cross-section of the South
     Space: in evidence, the alignment between
     the telescope and the North Celestial pole

camera oscura: a biconvex lens that captures the light of the stars and the planets was inserted in its cover. It is possible to observe the projection of the surrounding celestial space in the interior of a circular area placed on the ground during the progression of the day. Instead, some subtle lights that come from the Moon, from Mars and from Jupiter, the most luminous planets at the Painted Desert's latitudinal lines, are projected during winter nights. North Space also hosts an Installation that recalls preceding works by Turrell, belonging to the Dark Spaces series,[54] works that directly affect the resolution capacity of a sight organ that has been Immersed In darkness. A large stairway leads the visitor from this last space to the exterior of the crater: its incline is at about a 45° angle and faces the North Star. North Space was planned expressly in relation to this, to indicate the star's apparent and progressive change of position due to the oscillation of the Earth's axis.

West Space occupies a diametrically opposite position with respect to the *East Space* and is solely and directly connected with the *North Space*: it was planned for observing the sunset, in contraposition with the *East Space* that involves the sunrise. This space is composed of three principle rooms: the first is a cylindrical antechamber in which a circular shaped *skyspace* is placed, and serves to capture natural light. One descends towards the second room through a tunnel. It is entitled *Veil-Shallow space*, while next to it is the third and last room, *Sunset Space,* which has a distinctive oval planimetric form. In the *West Space*, the sun progressively fades until its almost total disappearance from the first to the third space.

South Space [19-20] is considered a natural astronomical observatory from which it is possible to see numerous celestial phenomena with the naked eye. *Saros,* for example, is a temporal cycle ascribed to the moto of the motion of the moon Moon. It was discovered in ancient Babylonia and completes itself every 6585,32 days (18 years, 11.33 days) and that is the result of a fortuitous and complex relationship between the Sun, the Earth and the Moon. The configuration of this space permits the prediction of both lunar and solar eclipses sufficient precision. As it is known, we have eclipses when the Sun, the Earth and the Moon are all aligned and the Moon is at such a distance with respect to the Earth that it's apparent diameter results as slightly larger than that of the Sun. When the three celestial bodies find themselves in this position, a small part of the Earth's surface enters the Moon's umbra. It is only from this area that it is possible to see the partial eclipse. During the solar eclipses the Moon projects its shadow on the Earth, while during the lunar eclipse, the exact opposite takes place. The eclipses occur when the three bodies lie on the same plane, that is when they are aligned along the so called 'line of nodes', characterized by the ecliptic intersection – the plane on the

20a

20b

20c

20d

20 Interiors (during the daytime) of the South
    Space
a-b View of hollow cap form the entrance of access'
     tunnel
c   View of passageway toward the naked-eye
     telescope
d   View of rim's cap, at twilight, seeing toward
   celestial vault's zenith

55

"The *Wedgeworks* series is developed
beginning with *Lodi* in 1969, still at the
Mendota Hotel, and can be interpreted as a
'three-dimensional" variant of the *Shallow
Space Constructions*, imagining the shifting
(usually rotating the wall by 90°) and by
shortening the partition wall that is present
in them. Lamps are positioned behind the
corner of the secondary wall and are carefully
set. The light that is given off by them creates
the clear image of a semi-transparent veil
which extends between the corner of this wall
and the corner of the principle wall, which is
further away and on the opposite side. Such
a screen, obliquely 'extended' seems to have
the consistency of matter, almost like a colour
film that separates two different spaces (on
occasion the rear cuneiform appears illusorily
illuminated in white), while in reality it deals
with only one characteristically uniform space,
or at least that is the way one would perceive
it if one were to exclude the coloured luminous
sources." F. Bergamo, *op. cit.,* p. 6.

Earth's orbit – with the plane of that of the moon. Only in this case can the umbra of the Moon can hit the Earth's surface giving way either to an eclipse of the Sun or to a eclipse of the Moon. A minimum of four to a maximum of seven eclipses can occur each year. It is possible to foresee them with close approximation, keeping in consideration that the 'line of nodes' does not remain fixed but completes its rotation In 18 years, 11 days and 8 hours on the plane of the Earth's orbit. After this period, the Sun, Earth and Moon return to their original positions and, in consequence, the same sequence of eclipses will be repeated. This recurrence is called the *Saros Cycle* and includes seventy-one eclipses: forty-three solar and twenty-eight lunar. Two eclipses, alternated with a Saros cycle, will be visible in different regions of the earth's surface since this doesn't correspond to a whole number of days. The excess of eight hours corresponds to a rotation of the earth of around 120° measured in the longitudinal sense. *South Space* is made up of a circular shaped central room in which a skyspace of the same shape is located. It is so large that it can frame the *zenith,* the point of the celestial sphere that is found to be perpendicular to the earth's surface in relation to the observer. During the more clear days, the portion of the sun that is visible from this opening will assume an intense blue colour. This space is also enclosed by a helicoidal ramp that opens up on the landscape at various levels.

   East Space [21-22] is directly connected to the *North Space*, with the *Fumarole Space* to the west and with *South Space* to the south. This space faces the Painted Desert and consists of a complex group of rooms that follow one another in linear succession. The first space that one encounters is slightly cuneiform. From here, stairs lead to a superior level, to a space with a square layout on which a cubic *skyscape* is developed. This space opens out onto the east through a large opening that covers a visual angle of about 60° and is completed by a hypostyle body of water, placed at its centre. From a predetermined position on the stairs, the observer's eye will be at the same level as the water's surface. In doing so, it seems to coincide with the horizon line. If one looks towards the external passage from this *leonardesque* position during the first hours of morning, one can observe the light of dawn gradually intensify. The rays of the rising sun and their reflection in the hypostyle pool will give life to a *Wedgework*.[55] The cuneiform room and *skyspace* were planned to observe the movement of the sun from the day of the winter solstice to that of the summer solstice. At dawn sunlight can pass through a buttonhole made in the space's most tapered part of the wall and be projected on the curvilinear wall placed in front of it.

   During the winter solstice (22nd of December), light is only able to penetrate the cube shaped room, while on the day of the summer solstice
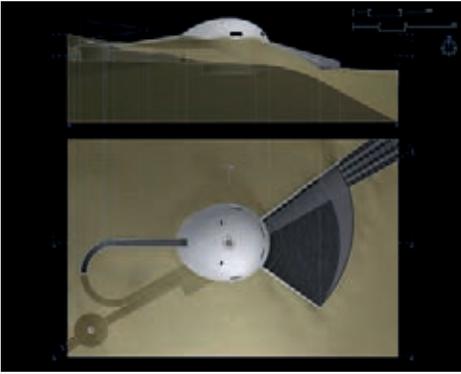
21
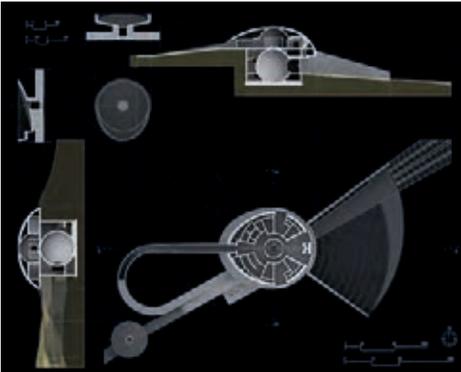
22

21   Overall plan and south elevation of the
     Fumarole Space

22   Middle ground plan, cross and longitudinal
     sections of the Fumarole Space: in evidence,
     the heliostatic chamber and the skybath

(21st of June), it can reach and infiltrate any space by means of the various routes and be projected on the wall placed just behind the main stairs. This phenomenon amplifies and modifies the spatial quality of the entire environment. When the sun crosses the East opening, its rays, which are reflected in the water, project changing and reverberating images on the rear wall. The water slightly ripples due to air currents, producing some strange luministic and chromatic effects, even in surrounding spaces. In the mean time, the triangular shaped space darkens due to the progression of the day, and consequently, at sunset, the light will appear like a thin ray of pink and blue: this later phenomenon represents one of the most beautiful open sky spectacles observable from Roden Crater. The two openings also function in such a way that artificial and natural light meet along planes of Intersection now made perceptible.

Fumarole Space is directly connected to the *East Space* and is aligned with the *Sun and Moon Space.* Situated at ground level, it occupies an intermediate position between the two spaces. The architectonic characteristics of this space recall eighteenth century astronomical constructions of Jai Singh in India, especially the great *Samrat Yantra.* It is composed of five principle spaces: the first constitutes a large ramp that transforms into a stairway, following the course of the terrain, and that is oriented towards the summer solstice position – phenomenon that takes place every year on the 23rd of June and represents the moment in which the sun transits in the most northern point of it's apparent annual course. The particular form of this ramp, and especially its curvature, was studied in such a way as to permit visitors to observe the position of the sun during the summer solstice along the south wall, and the point in which the moon appears along the north wall. The second space constitutes a cylindrical room placed just on the inside of the construction: it acts as a lens, projecting through the tunnels, the image of the sun on the large monolite stone of the Sun and Moon spaces. It was also conceived to capture that arch of solar light that happens at sunset whose visibility lasts only for a few minutes, but that inundates the room with an ethereal blue and pink colour. The third and fourth spaces were planned to house some *Dark Pieces.* With this in mind their walls were covered by sand and plaster. Finally, the fifth space was planned to be particularly sensitive to light: a pool is foreseen for it whose goal will be to capture light, but it is also surrounded by a Faraday cage whose function is to filter the sounds that come from the exterior. The Faraday cage is an instrument used in physics to demonstrate the distribution of electricity on the surface of bodies, and is generally made up of two components: a metal cage to which strips of paper are attached, both internally and externally, half way up and an electroscope that connects to the internal surface of the cage through a metal coil.

The goal of this simple electrostatic object is to detect the presence of electric charges. Environmental sounds can only pass through the higher opening of the cage and the space acts as a little telescopic radio. This environment is therefore conceived not only to receive the natural light of the sun, the moon and the stars but also to capture radio waves that are transmitted within the pool: while the water receives this type of wave from the acoustic space, the principle room captures the external environmental sounds. For example, in certain favourable environmental conditions, one can hear the Great Falls of the Colorado River at about four miles east of the Crater. Turrell was inspired by several earthly works like the high reverberation cisterns in Massada and Qumran for the planning of this environment.

The two tunnels, situated on the major axis of the crater, were designed as links but they also function as optical channels that capture and project natural light. The East Tunnel, that connects the East Space with Crater's Eye, has an inclination of about 15° and is rotated towards the east at about 61° with respect to the north: It seems to point to the north-east, in the direction of the rising of the sun and towards the summer solstice. Instead, the west tunnel, that connects the Crater's Eye with the Amphitheatre, is practically specular and faces the southwest in the direction of the point in which the sun sets, towards the winter solstice.

No matter which route one takes within the Crater, *Alpha Space* is the last space that one encounters before entering the *Crater's Eye.* Actually two specular *Alpha Spaces* exist with respect to the eye of the crater and they are positioned at the end of the two tunnels. It consists of a cylindrical room with elliptic layout, in measured dimensions in which a *skyspace,* that is to say a large opening in the cover, of the same form is to be placed. The walls are completely white and reflect different nocturnal and daytime lights; a steep stairway that leads to the ridge is placed in the centre of the room and permits one to take in the progressive change of perspective with respect to the celestial vault and to the horizon. If one directs one's gaze towards the *skyspace* from the interior of the tunnel that leads to the *Sun & Moon space,* constructed with a unique 'key-hole' section, one can enjoy the particular sensation that makes the sky to appear to adhere to the hole in the floor slab covering. As one continues up the stairs, exiting this space, this sky 'membrane' seems to expand and transform into a huge vault above the crater.

Situated precisely at the crater's centre, just above a cistern of underground water, the *Crater's Eye* is surely one of the most Interesting spaces of the entire Turrellian project. Conceived as a reverse concave hemisphere, it functions like a 'naked eye' astronomic observatory. The architectonic characteristics recall those of the observatories built

by Jai Singh at Jaipur in India. Turrell himself affirms to be inspired
by the famous Maharajah, in the forms of his architecture: architec-
ture made for viewing celestial events. Indeed, as in *Jai Prakas Yantra,*
here as well, one enters from the lowest part of the installation, to
then climb and observe the exterior through spherical embrasures in
the structure of the basin. The form, comparable to a concave merid-
ian, was designed to permit the observation of several celestial events
that involve the sun, the planets and the moon, and the viewing of
the eclipse, the apparent course of the sun that seems to change posi-
tion from low to high. One can position oneself on any of the several
platforms that have been planned, depending on the events that one
wishes to observe: the lowest ones are for viewing the summer eclipse,
the highest for viewing the spring equinox (March 21) and the autumn
equinox (September 23), that meet the moment in which the celestial
longitude of the centre of the sun is equal to 0° or to 180°, that is to
those days in which daylight hours are equal to those of darkness.

The *Sun & Moon* space is connected in the east with the *Fuma-*
role Space and in the west with the Alpha *Space.* It is a circular space
in which the visual axis of the two entrances run perpendicularly to
the surfaces of a sheet of rock, of monolithic form, positioned exactly
in the centre of the room. Therefore, the space functions like a *camera*
oscura, in which the two access tunnels serve to project the images of
the sun and moon, from the East and West respectively. Both images
remain sharp for only about two minutes: for the remainder of the time
Sun & Moon will be inundated with a light that generates a *Ganzfield,*
uniform and without a focal point. Every 18.61 years, when the Moon
reaches its most southerly declination, its image – including its large
craters – will be clearly visible within the room, while one would be able
to view the projections of the sun two times a year, at the solstices.

Situated at the southwestern base of the Crater, the *Amphi-*
theatre is directly connected to the second *Alpha Space* and is a
multifunctional platform. When there are no programmed rep-
resentations, it also functions as a simple space of light.

As this brief description demonstrates, the artistic research of
James Turrell in the *Roden Crater project* involves multiple disciplines
and interests (astronomy, archeo-astronomy, buddism, Zen meditation,
ecology, the study of primitive cultures, science, architecture, sci-fi, and
the artist's passion for flying), but each of these revolves around an im-
mobile centre, constant and omnipresent: perception, above all visual. It
has a way of structuring and de-structuring itself through the controlled
use of artificial and natural light. As noted by Theodore Wolff, James
Turrell's work allows for several exegetical levels: "….as motivated on

56

T. Wolff, *Introduction*, in "Occluded Front, James Turrell", edited by Julia Brown, Los Angeles 1985, cited in C. Adcock, *James Turrell: The Art of Light and Space*, Berkeley 1990.

the aesthetic level; as an accurately calculated demonstration of certain laws applicable to perception and to human cognition; as a demystifying process that strives to augment knowledge of how the relationship between man and his environment functions; as an instrument used to investigate subtle transcendental or metaphysical mental states".[56] Even though Turrell doesn't seem to attribute any mystic-religious significance to his artistic creations, the light archetype traceable to its Quaker roots is strongly connected to them – as the names given to the two renowned *skyspaces*, *Meeting* and *Second Meeting,* by the artist recall – , and to the correlated practises of silence and of the gathering of light.

Light is an instrument intended to expand the confines of perception and to implement knowledge of the phenomenal world. For Turrell, it is not a vehicle of information, seeing that it is information in and of itself. Therefore, the question arises; in the case of similar works, is it permissible to use traditional methods of geometric representation and shadow theories (even through the most sophisticated software for digital rendering) to reconstruct the changing borders of their appearances?

The response should be negative; Turrell's works are un-representable and point out the inadequacy of the idea of a rectilinear propagation of light, and therefore of shadow. Instead they allude to the quantum model that is prevalent today that, non-the-less, has not yet found a coherent translation in graphic terms. Above all those works stimulate the observation of shadowy phenomena all together analogous with that which Is provoked by luminous phenomena, thus suggesting to us, in some manner, to redefine the laws of sight. Perhaps our internal eye, able to read secular stratifications – both physical and metaphysical – of a symbol that Is as naturally iconographic as shadow, has been blinded by a Manichean concept of representation that, illuminating every corner of it's theoretical framework, has answered to rational needs, to a tectonic or mechanical end. In this way we have most likely lost one of the values associated to drawing, that with the precise description of shadow, in a fit of *hubris*, tends to fix the eternal changing motion of the sun on paper or on a digital screen.

Hiding in Plain Sight
/
Donald Judd's Non-Referential Architecture

Judith Birdsong

"Between the two large buildings on the south side is being built an inner wall that slopes slightly with the land there. The rest of the area is level, as is the outer wall. The two walls and two areas, one sloped and the other level, make *a work*, *I suppose both art and architecture*, although usually the distinction is important. The inner wall is twelve feet in from the buildings, the module throughout. The adobes are now made on the site."

/   Donald Judd, "Marfa, Texas 1985," in
      Donald Judd Writings, eds. Flavin Judd
      and Caitlin Murray (New York: Judd
      Foundation and David Zwirner Books,
      2016), 424.

Donald Judd's serially arranged installations in Marfa, Texas challenge
our conceptions of art and architecture. They serve no purpose oth-
er than the one put forth by their artist-creator, and this alone would
seem to distinguish them from architecture; but in scale, in their ca-
pacity to define space and engender movement, in their industrial
materiality and tectonic expression, and their resolutely geometric
forms, they borrow heavily from the palette of the master builder.

  Judd's *15 Untitled Works in Concrete* (1980-1984) and *100 Untitled
Works in Mill Aluminum* (1982-1986) are his largest artworks, and to
spend time wandering among them in Marfa is to be reminded of the po-
tential still to be tapped in the interaction between form, material, light,
shadow, space, and container. The former, fifteen evenly spaced clusters
of between two and six dimensionally consistent concrete volumes,
stretch out for the length of one kilometer along the edge of the parade
ground at the former Fort DA Russell Air Force Base (now Judd's Chi-
nati Foundation), where these and other Judd artworks are permanently
installed. The aluminum pieces (as Judd called them), fill two former
artillery sheds that Judd modified specifically to house them; like their
concrete counterparts, they are outwardly identical, but here each has
a unique internal configuration. Both have an imposing physical pres-
ence secured by their number and scale, by the solid heft of concrete and
the tectonic sobriety of the aluminum plates. Still, we sense that other,
unseen forces are at work here, evident in the carefully considered and
precise alignments of the objects and in the rhythmic spatial interludes
that fall like moments of silence in a musical score. A covert experiential
power escapes from the lucid placement and deceptive rigor of these
installations – a capricious and evasive apprehension that delights in
what cannot be scripted: the mutable play of light and shadow on the
simple, receptive forms; the raucous exchange of limits that destroys
any sense of material solidity as it bounces from aluminum surface to
window glass with each subtle shift in the viewer's position; the constant
recalibration of immediate and remote as one moves from extensive
to introspective to unbound space in the array of concrete volumes.

  To what extent Judd intentionally orchestrated these otherworldly
aspects of his art is difficult to say. Anecdotal evidence suggests that the

1

Donald Judd, *Architektur* (Munster: Westfälischen Kunstverein, 1989), 191.

2   Judd, "Notes 1986," *Writings*, 445.

3

Judd, "Marfa, Texas 1985," *Writings,* 427.

straight-shooting, Midwestern empiricist did nothing to script these
somatic, yet almost transcendental, effects. It is tempting (and, in fact,
fitting) to imagine a deist Judd, bringing forth his creations in Marfa
only to withdraw to observe in silence the unanticipated consequences
of the interaction between physical form and metaphysical ephemera.
It is also easy to forget, in the aftermath of the many movements it
helped spawn, how profoundly radical these works and that of Judd's
like-minded contemporaries was at the time. We take for granted today
that art can be neither painting or sculpture (as it had been heretofore
defined), but much of the art of the 1960s still lingered in the shadow
of a European tradition tied to a pictorial, compositionally-determined
formalism and an illusionistic representation of three-dimensional
space that Judd considered both limiting and "too old and irrelevant in
meaning."[1] Judd was at the forefront of artistic explorations that sought
to relocate art from the wall into the room, and away from an image
depicting reality to a reality rooted in experience. It severed the fixed and
static relationship of painting and viewer, releasing a new and temporal
promise and opened the singular product to serial possibilities. Above
all, it freed signification from mediation: form from content. To para-
phrase Judd, "There is no meaning, except that these *things* exist."[2]

Judd removed himself from the social and physical confines of
New York in the early 1970s to settle permanently in Marfa, a small
county seat on the edge of the Chihuahua desert in one of the most
isolated corners of the United States. There were few people and am-
ple space; real estate was cheap and the town was, in Judd's words, "the
best looking and most practical" of the others he considered.[3] Access
to material resources was limited, the consequence of being three
hours from the closest city, and this no doubt contributed to the econ-
omy-of-means character that typifies the town still. The no-nonsense
architecture of the former fort is similarly spare, and over time several
of the base's buildings would, in fact, insinuate themselves seamlessly
into the fabric of the town; one of Judd's first purchases was a full city
block with three such structures that he would slowly convert into his
personal residence compound. Much of Marfa's architecture, domestic
and military, evidences a concern for symmetry, apparent in the centric
placement of entries and openings, and well-proportioned spaces, two
qualities that Judd would eventually promote in his writing and work.

Dissatisfied to the point of disgust with what he saw as cavalier
behavior on the part of most museums who put the business of art above
those of the artists it purported to support, Judd intended to establish an
alternative model in Marfa – one that would house, permanently and *in
situ*, his work and that of other artists he selected. As he began acquiring

4

In addition to the various properties comprising the Chinati Foundation, Judd owned more than 20 properties in town and three ranches south of Marfa near the Mexican border at the time of his death. These are now owned and managed separately by Judd Foundation, which also retains ownership of the recently-restored 101 Spring Street in New York.

5

Judd, "101 Spring Street," *Architektur*, 19.

6

Judd, *ibid.*

7

"In architecture all aspects have to be considered in regard to symmetry. To me, just realigning the doors and windows, if possible, of old buildings so as to be opposite one another or on an axis, is a great improvement. Other than function, there's no reason why doors and windows should be haphazard." (Judd, "Symmetry," *Architektur*, 192.)

properties in and around town for that purpose, architecture began to
play an increasingly generative and synergetic role in the development
of his art.[4] Judd had initiated this artistic exchange prior to leaving
New York with the purchase, in 1968, of 101 Spring Street, a five-story
former industrial building with a cast-iron façade constructed in 1870
that he subsequently remodeled into a combined residence and studio
space. Judd kept each floor bare of all but a few thoughtfully curated
works of art and a minimum of furniture, which only in and of itself
defines each space's purpose. Uninterrupted by partition walls or other
physical encumbrances, the large and open rooms read as pure spatial
volumes defined by floor and ceiling "planes." So abstracted, preconcep-
tions governing scale, function, and even conventional means of assem-
bly fall away, no longer deciding disciplinary allegiance or proscribing
the potential for creative reinterpretation. "My main inventions," Judd
wrote, "are the floors of the 5th and 3rd floors and the parallel planes
of the identical ceiling and floor of the 4th floor. The baseboard of the
5th floor is the same oak as that of the floor, making the floor a shallow
recessed plane. There is no baseboard, there is a gap between the walls
and the floor of the 3rd floor, thus defining and separating the floor as
a plane." …These ideas were precedents for some small pieces and then
for the 100 mill aluminum pieces in the Chinati Foundation."[5] Else-
where he noted, "the little I've added to the building in reworking the
interior is nevertheless to me very important, constituting serious ideas,
architectural, but also the result and cause of some works of art."[6]

Judd would most thoroughly and ambitiously explore the symbiotic
potential of art and architecture with the renovation, between 1981 and
1986, of the two brick and concrete artillery sheds where the 100 mill alu-
minum pieces were to be installed, and the generative rapport is evident
in his account of the process: "The buildings, purchased in 79, and the
works of art that they contain were planned together as much as possible.
The size and the nature of the buildings were given. This determined the
size and the scale of the works. This then determined that there be con-
tinuous windows and the size of their divisions." With the exception of
several small, infill buildings added to his residence compound in Marfa
and the construction of a few, largely utilitarian interventions at his ranch
properties, Judd's built efforts were limited to modifications made to ex-
isting buildings. These were typically subtle and discreet and often served
to call attention to, or strengthen, a building's symmetrical aspect[7]; he
followed the same directive here, replacing the sheds' garage-style doors,
already regularly arrayed and aligned, with glass windows quartered
by muntins, creating a new axial orientation: "The given axis of the
building is through its length, but the main axis [now] is through the

8

Judd, "Artillery Sheds," *Architektur,* 72-3. The windows allow for views of the *15 Untitled Concrete Works* in the near-distance, visually collecting the two installations as Judd intended.

9

Judd, "Artillery Sheds," *Architektur,* 74.

10

Donald Judd, "In defense of my work," in Donald Judd, *Complete Writings*, *1975-1986* (Halifax: The Press of the Nova Scotia College of Art and Design, and New York University Press, 2005), 9.

11

For example, Judd referred to his residence compound, La Mansana de Chinati, as "the largest work I've made." (Judd, "Art and Architecture, 1987," *Architektur*, 198.) Although Judd died before the completion of his last, and largest, architectural project, the façade of contrasting matte and transparent panels of green glass for the Peter Merian House in Basel (commissioned in 1993 as one of eight large scale artworks, but designed in collaboration with the project architects) must be included as another example. For more information, see Hans Zwimpfer, *Peter Merian House Basel* (Basel: Birkhäuser, 2002).

12

Cameron Dodd, "Inside the Chinati Mountains State Natural Area," *The Big Bend Sentinel*, March 9, 2017. Portions of this research were originally presented at the Fall, 2017 ACSA Conference, "Crossings Between the Proximate and the Remote" and will be included in the proceedings publication, forthcoming.

wide glass façade, through the wide shallow space inside and through
the other glass façade. Instead of being long buildings, they become
wide and shallow buildings, facing at right angles to their length."[8] As
the original roofs were flat and leaked, and since "patching the flat roof
had been futile, and since insulation was needed, and for architecture,
Judd replaced them with barrel vaults, where the "height of the curve
of the vault…[is] the same as the height of the building. Each building
became twice as high, with one long rectangular space below, and one
long circular space above."[9] Within this reconfigured shell, the individu-
al aluminum pieces, 58 in the first shed and 42 in the second, each take
their place on points of intersection that result from the superimposi-
tion of the primary grid established by the exposed concrete beams and
columns, the secondary grid of the expansion joints of the concrete floor,
and, in elevation, the quartered windows. A rhythm of spatial intervals
between each piece and those adjacent to it results. Judd considered these
an integral and essential part of the work: "the space surrounding my
work is crucial to it."[10] In time, Judd would refer to these interdependent
efforts as single "works," collecting art and architecture together as one[11]

> "You've duplicated my house and used
> my ideas in the tanks and pavilions and
> in the headquarters. Moreover, you've
> done this badly, debasing my ideas."

/   Excerpt, Letter to Philippa Friedrich,
    25 August 1983
    Donald Judd Text ©2017 Judd
    Foundation.

Although Judd did design several freestanding architectural
projects, alone and in collaboration with other architects, none
were ever built. When the Texas Parks and Wildlife Department
revealed plans recently to open a new state natural area not far
from Marfa with four cabins allegedly designed by Judd, the an-
nouncement, therefore, was met with surprise and skepticism.[12]
    The cabins are located on land once owned by Heiner and
Philippa Friedrich, founding partners of the Dia Art Foundation
which helped fund work by artists such as Judd, Dan Flavin, James
Turrell, and Walter de Maria in the 1970s – large-scale and pro-
hibitively expensive projects that could not have been realized
without such patronage. Heiner had visited Judd in Marfa in 1978
with the intention of helping him establish a permanent collection
of his work there and, not long after, Dia began purchasing prop-
erty, including most of the former Ft DA Russell as well as other
structures in town, that would eventually form the basis of the
Chinati Foundation. In 1979, acting privately, Heiner and Philip-
pa also bought two large tracts of land within a few miles of the

13

The Richard King Mellon Foundation
purchased the property from the Friedrichs
and subsequently donated the land to the
Texas Parks and Wildlife Department in 1996.

14

Donald Judd to Philippa Heinrich, 25 August,
1983, Judd Foundation Archive, Marfa.

15

Auden Porras, interview by the author, July
6, 2017, translated by Justin Fleury (Texas
Parks and Wildlife Department). Follow-up
interview by Sammy Marquez (Texas Parks
and Wildlife Department), August 24, 2017.
Mr. Porras has been in the employ of the
Friedrichs since they purchased the property
in 1979 and still resides at the Mesquite Ranch
headquarters. He states the construction
work was done under the supervision of the
Friedrich's foreman, Al Real, who conveyed
orders orally to the workers; he does not recall
ever seeing drawings for the project. Although
he doesn't remember ever meeting Donald
Judd personally, he did say that "white out-of-
towners" would occasionally "show up." The
author would like to thank the Texas Parks and
Wildlife Department for sharing their project
files for the Chinati Mountains State Natural
Area with me. In particular, I would like to
acknowledge the help of Justin Fleury, lead
park planner for the CMSNA, who allowed
me to visit the cabins with him and arranged
for, and translated, the interview with Mr.
Porras; he also generously shared the results
of his own investigation and insight. This
research would have withered in the realm of
speculation and conjecture without his help.

Mexican border, 60 miles to the south: one known as the Mesquite Ranch and another adjacent to it where the cabins now sit.[13]

Judd's own words provide the most compelling evidence that at least one of the four cabins can be attributed to him. In a letter written in August of 1983 on file at Judd Foundation archives, Judd accuses the Friedrichs of plagiarism by appropriating and corrupting his ideas in the duplication of "my house."[14]

Judd's professional and personal relationship with the Friedrichs quickly and quite publicly deteriorated. After foundation funds began to dry up in the aftermath of the oil and gas bust in the early 1980s, Dia attempted to extricate itself from its contractual obligations to Judd, and Judd brought suit against them for violating the terms of their agreement; by 1983, at the time the aforementioned letter was written, Judd was working toward securing private ownership of their shared Marfa properties. However, the letter makes it clear that at some time, probably not long after the Friedrichs purchased the land, Judd had received compensation for the redesign of an existing structure (which Judd refers as "the original house") on the site.

This area of west Texas remains as rugged and isolated as when Judd moved here 40 years ago. It is sparsely vegetated and even more sparsely populated; vast tracts are still all but inaccessible. Ranching has been the area's main economic driver since the Comanche and Apache tribes abandoned it in the late 19th century, and simple cabins were often built here for the use of shepherds who helped manage the flocks and to house migrant workers who, at that time, crossed the border from Mexico with ease to help at sheep-shearing time. Historic aerial photographs reveal that only one of the four cabins, since named the San Antonio cabin [1] for the canyon that runs to the north of it, existed on the site at the time of the Friedrich's purchase; it was constructed sometime between 1958 (where it doesn't appear in the photo) and 1972 (when it does). The aerials also make it clear that it was enlarged after 1972 and before 1984, a fact corroborated by on-site investigation and in conversation with a worker who was involved with the reconstruction that he says took place in 1980.[15]

Not all the drawn work currently held at Judd Foundation archives has been researched and identified, and in the absence of sketches or other documentation that definitively tie Judd to the cabin, it is difficult to assert with certainty exactly what he contributed to the "redesign." More problematic still is deciding what "ideas" the Friedrich's could have been guilty of so naively replicating.

1   San Antonio cabin, Chinati Mountains State Natural
    Area. ©Judith Birdsong, 2017

2

18

Judd, "Horti Conclusi," *Architektur*, 41. Two other examples may serve to illustrate the case in point: at Casa Perez, one of his three ranch properties collectively known as Ayala de Chinati, Judd observed, "The house needed more shade." – although he eventually decided, "...putting a larger porch around it would only increase the house's more conventional aspects." "Finally," he said, "I thought that the best thing to do would be leave the house alone and build new and separate structures for shade, bathing and storage..." (Judd, "Ayala de Chinati," *Architektur*, 61); and in his speculative design for "La Catorcena": "...there are a lot of sketches. Some are for single houses progressively closed as you go inward, because of the variable climate: paved with a roof, the same screened, walls and many windows, walls and a few windows, and at the center a courtyard. ...Rooms and porches and courtyards alternate." (Judd, "Casa Lujan and La Catorcena," *Architektur*, 30).

16

Judd, *ibid,* 823. He also stated, "Art is done in a very different way and for a different purpose – very much the purpose of the individual. The architect cannot go against the purpose of the people who use the building, the function of the building. Architecture can be quite individual and ultimately very creative, but it cannot be in opposition to the function of the building. You just get a hunk of junk." From Donald Judd, "Regina Wyrwoll in Conversation with Donald Judd," interview with Regina Wyrwoll, October 4-5, 1993, https://chinati.org/programs/donald-judd-in-conversation-with-regina-wyrwoll.

17

Judd, "Horti Conclusi," *Architektur*, 40. Judd referred to light, air and space as "reasonable functions." They take form by modifying the degree of enclosure, from open to closed.

2   Rainer Judd and Donald Judd at Mesquite Ranch, 1973 Image: Jamie Dearing © Judd Foundation

"I remember doing drawings of houses with porches around them, improved houses, at thirteen or so."

Art and architecture emerged as parallel pursuits early in Judd's career, and in the years immediately preceding his death, he was investing more and more of his energy on architectural projects. Because so much of what Judd wrote and drew has been published, and because Judd often notated his sketches with the date and place where he was working, it is possible to reconstruct a chronology of his many overlapping projects. His drawings in particular reveal a surprisingly prolific and dexterous design mentality that was able to shift from project to project, and from art to architecture, with an agility that seems to betray any disciplinary distinction. Over the course of just a few weeks in 1983, for example, at roughly the same time he penned the letter to Philippa, Judd produced sketches for new buildings at his residential compound in Marfa, the first sketch for a multi-colored floor piece, a sketch for what was to become one of his stainless v-channel works, a sketch for an architectural competition in Providence, RI, and sketches for the *15 Untitled Works in Concrete* at Chinati. Many exhibit a striking similarity of formal aspect that Judd acknowledged as inevitable in the work of anyone crossing disciplinary lines: "Of course, if a person is at once making art and building furniture and architecture, there will be similarities. The various interests in form will be consistent."[16]

The photograph, [2], is significant as it is the only photograph on file in the foundation's archive that places Judd at the San Antonio cabin. It was taken by Judd's assistant, Jamie Dearing, sometime in 1980 (the girl in the foreground is Rainer, Judd's daughter, who would have been nine or ten at the time). But the setting is also suggestive. Judd and the others sit on the porch, in that interval between house and (here) harsh environs – one neither in nor out.

Judd repeatedly stressed the importance of having "several kinds of enclosure, according to climate, and not just inside and outside as usual,"[17] and providing for a variety of spaces, from fully open to completely enclosed, is an imperative that underscores many of his architectural projects. The triumvirate of light, air, and space that Judd deemed critical architectural needs converges in the threshold space between a building's interior and exterior – where the natural and built worlds enfold into one another. As the above quote suggests, appending such an interface to an existing structure to "improve" the architecture seems to have been an originary impulse.[18]

19

    Consistent with what I observed on site, Mr. Porras confirmed that they increased the size of the slab and enclosed the existing cabin with a new wrap-around porch. New stone columns were added at the perimeter of the slab to support the extension of the roof, and the original round "vigas" (roof rafters) were replaced with milled 2x8s. They replaced the bathroom fixtures and fittings and built the kitchen counters and freestanding interior shelving (which bear a strong resemblance to similar counters and shelves in other Judd buildings). The fascia board seen in the photograph is not original to the remodel; TPWD replaced it with one of a different size a few years ago.

20

    Judd, "Marfa, Texas, 1985," *Writings*, 424.

21

    In addition to *Donald Judd: Architektur (*1989), and Flückinger's, *Donald Judd: Architecture in Marfa, Texas* (2007), both already noted, the others are *Donald Judd: Räume Spaces* (Ostfildern: Cantz Verlag, 1993) and *Donald Judd: Architektur,* ed. Peter Noever (Stuttgart: Verlag Gerd Hatje, 1991).

22

    The Center for Architecture (New York) hosted "Obdurate Space | Architecture of Donald Judd," an exhibit of Judd's built and unrealized projects curated by Claude Armstrong and Donna Cohen, in the fall of 2017.

23

    In this, the last essay Judd published before he died, he called space, "my main concern," and laments the absence of a history of theory of space, "the most important and developed aspect of present art," in art.

I believe that Judd "renovated" the Friedrichs' stone shepherd's cabin with the addition of a porch.[19] Not as an architect might, privileging performative concerns such as orientation and heat gain (whereby the self-shading north side would probably have been left exposed), but as Judd the artist would: creating an autonomous and immediately legible *object* by wrapping the cabin with a flat-roofed space *reasonably* divided by *intentionally-placed* columns. Obscured in shadow, the house proper withdraws; placed at the periphery of the slab, the columns catch the light, foregrounding the cabin's formal aspect. The immediate impression is of a volume of space held between two horizontal planes subdivided by linear, vertical elements. It reads as a Judd "work," a construction "both art and architecture."[20]

Four monographs dedicated to Judd's architecture have been published to date, yet his architectural work has so far not been subjected to the same critical scrutiny as his art – and what little that has been published has largely been written from the art historian's perspective.[21] Until recently, the most informative source for anyone seeking a richer understanding of Judd's architecture has been, not surprisingly, the one authored by Judd himself, *Donald Judd: Architektur*, published in 1989, coincident with the first (and, until 2017, only) exhibit dedicated solely to his architectural work.[22] As Judd unpacks each project, concisely describing process, purpose, and inspiration, it becomes clear that his intent is to educate as well as elucidate. Hard-rights into politics, fake culture, war, the environment, governmental bureaucracy, strip malls, skyscrapers, and blistering attacks on the "commerce" of art and architecture, all delivered in Judd's characteristically pithy style, worm their way into the text; other essays more broadly decry the decline of American culture, in general, and the profession of architecture, in particular, and promote his sincerely held solutions to virtually every ill. It is, in all, more treatise than exhibition catalog. The publication in 2016 of *Donald Judd Writings*, an exhaustive anthology of essays, jottings, notes, observations, articles, and lectures authored by Judd from the time he was a student in 1958 until his death in 1994, has also added immeasurably to our understanding of his universal and consistent worldview.

"Space is made by an artist or an architect; it is not found and packaged."[23]

/   Judd, "Some Aspects of Color in General and Red and Black in Particular," *Writings*, 833.

"Visual reasonableness," achieved through the intertwining of space and proportion, is one imperative that repeatedly surfaces in Judd's

24

Judd, "Art and Architecture 1983," *Writings*, 339.

25

Four sheets of drawings made for his
woodblock prints in 1976 include the notes,
"Horizontally divided horizontally, Horizontally
divided vertically, Vertically divided
horizontally, Vertically divided vertically."
Brenda Danilowitz, "Donald Judd: Some
Aspects of His Prints." In *Chinati Foundation
Newsletter*, vol. 19 (October, 2014), 11. He also
"divided and organized" the loft at 19th St. and
Park. where he lived prior to his move to 101
Spring Street. (Judd, "Art and Architecture,
1987," *Architektur*, 198.)

26

Many of these operatives — centered,
quartered, split — result in a symmetrically
ordered disposition of parts.

27

Richard Shiff, "To Stop the Heart," in *Chinati:
The Vision of Donald Judd*, ed. Marianne
Stockebrand (Marfa: The Chinati Foundation
and Yale University Press, 2010), 270.

28

Marianne Stockebrand, "Preface," *Architektur*, 9.

writing. Space and proportion to Judd are not just mutually dependent; they are one and the same, simultaneously the means and the end, with one determining the other. Their conjoined nature underscores the importance of process in Judd's work: "…to me, the process is first and primary and in a way is the conclusion."[24] That the process begins with space reveals that space is, in fact, "the conclusion." This consistent engagement with the material fact of space, regardless of whether the project was an artwork or architectural project, undoubtedly contributed to the ease with which Judd was able to change disciplinary hats.

Space insinuates itself into the line between Judd's art and architecture, inflating it into a space of confluence. Space was Judd's mother material, supreme above all others that bind his art with his architecture. Judd's often begins with the circumscription of space: specifying the dimensions of a canvas (while still a painter), defining the volume of an object, delineating an enclosure by erecting a perimeter wall. So defined, space becomes substantive and can then be simply and non-hierarchically partitioned: it can be "cut," "separated," "surrounded," "doubled," "quartered," "divided," or "subdivided."[25] Judd's writings are peppered with such operatives. Objects, likewise, can be "arranged," in space; "aligned," or "centered;" they can be collected to "enclose" space. Space is, quite literally, Judd's blank canvas, awaiting the artist – or architect – to render it visible.[26]

"Proportion is specific and identifiable in art and architecture and creates our space and time."

/ Judd, "Art and Architecture, 1983," *Architektur*, 177.

Judd's space rejects the unconstrained freedom of modernism's universal space to realize a precisely constructed, but nonetheless neutral, limit determined by numbers fixed in non-arbitrary, non-referential proportional relationships. This requires edges and surfaces – boundaries – for space becomes architecture only when, in Judd's words, this objective of "visible reasonableness" is achieved. As Richard Shiff explains, "What [proportion] actually provided or facilitated is the crux. To put it Judd's way, the numbers produced space – space to be lived. They brought sensory, intellectual experience into the present and held it there. Using simple ratios directly and obviously, Judd avoided the indirectness that he understood as having undermined so much contemporary practice."[27] Comparing one of Judd's characteristic woodblock prints with the layout for the Concrete Buildings (1985-89) Judd designed for Chinati (which Marianne Stockebrand, in her preface to *Donald Judd: Architektur*, called "the most uncompromising version of Judd's architecture")[28] may serve

3

29

Judd, "Concrete Buildings," *Architektur*, 89.
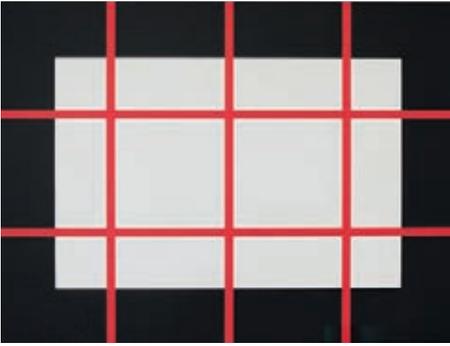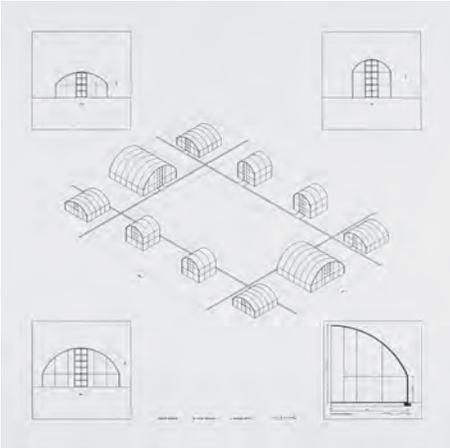
4

3   Donald Judd, Untitled, 1993
    60 x 80 cm (23 1/2 x 31 1/2 in)
    Image © Judd Foundation
    Donald Judd Art © Judd Foundation / Artists
    Rights Society (ARS), New York

4   Donald Judd, axonometric drawing for the
    concrete buildings at the Chinati Foundation,
    drawing by Claude Armstrong and Donna
    Cohen, 1987, ink on tracing paper, 42 x 42 in
    Image © Judd Foundation
    Donald Judd Art © Judd Foundation / Artists
    Rights Society (ARS), New York

30

There are slight deviations from the
proportional ideal in the as-found condition.
The porch slab, for example, measures 65'-11"
along the south edge and 65'-8" along the
north, and the spacing of the columns varies
within the range of a few inches, but given
the remote location of the cabin, the primitive
working conditions, and the use of rough
cut stone masonry, such anomalies hardly
surprising. Overall, the inconsistencies are
indiscernible and the intention is clear.

as an illustration. Major and minor grids, defined by lines and blocks of color, elucidate a proportional logic in the creation of the space of the woodblock print [3]. Judd explicitly describes the use of a similar strategy in his plan for the Concrete Buildings [4]: "The ten buildings are centered on ten squares of twelve, the two in the middle remaining empty. Narrow walks on a grid determined by the doors of the buildings connect them all, making two grids, one major but not linear, and one minor but linear."[29] The grids, in other words, predetermine the disposition of objects in space and devise the plan, the primary purpose of which, architecturally speaking, is to collect a work's parts into a recognizable and meaningful whole. The location of architectural elements – doors and walks – implicitly ensures the legibility of the spatial scaffold underpinning the work, even if the lines themselves are absent.

> The Concrete Buildings, the woodblock print, and the plan of the San Antonio cabin [5] each display an ordering framework that is strikingly similar and proportionally consistent. With the cabin, it appears that Judd drew inspiration from the placement of the existing windows and doors, and from its length-by-width dimensions to then decide simple modifications that subsequently return the order to the viewer in legible form. The width of the new porch, for example, (in plan, a spatial border, the lines of which define the major grid) is 8', duplicating that of the porch space carved from the rectangle delineating the original plan. Adding eight feet to each of the cabin's four sides results in a new overall footprint of 44'x66' – a ratio of 2:3 that Judd favored. Lines struck through the center of the existing windows on the west side divide the 44' into three even spaces of 14'-8". The porch columns on the north and south elevations are located at 22' on center which, when paired with the 14'-8", establishes a minor, linear grid subdividing the primary unit into nine smaller modules that echo its 2:3 proportion. Finally, the roof was raised one foot, so that the negative space between the columns corresponds to a 1:2 ratio.[30]

>   Judd was to employ a similar strategy later in the redesign of a former hotel at Eichholteren, Switzerland (1987-92; see [6]). There too he enlarged the footprint of the structure (in this case by adding a "plinth," not a porch, but again a mediating interval) employing proportions derived from the existing structure, and in this case he was explicit about the reasons governing his decisions: "There will be a granite terrace around the building, two-thirds of the width of the building, except at the front, which will be one-half. A low granite balustrade, 50 x 50cm, out one-half the width of the building

31

Judd, "Una Stanza per Panza, 1990," *Writings*, 656. A new floor of square, hard-fired, clay "Saltillo" tiles was laid over the original concrete slab at the time the cabin was renovated. It continues outside to mark the extent of the original building, but does not encroach on – and in fact helps define – the space of the bordering porch. It appears to have been thoughtfully set as an uninterrupted grid with one row of tile running the length of the house through the middle of the opening of the interior communicating doors. The doors are centrally and axially aligned, and the tile calls attention to the symmetrical partitioning of space.

32

Judd considered symmetry "the rule" and asymmetry, which "indicates the absence of a reason," "the exception." "...I long ago reached an agreement with what I consider the primary condition: art, for myself, and architecture for everyone, should always be symmetrical except for a good reason."(Judd, "Symmetry," *Architektur*, 190). He later added that "reasonable particulars, such as the site or the function" were acceptable causes of asymmetry (Judd, "Art and Architecture, 1987," *Architektur*, 198). Interestingly, this echoes Otto Wagner who, in 1896 wrote, "Only where the shape of the site, purpose, means, or reasons of utility in general make compliance with symmetry impossible is an unsymmetrical solution justified." (Otto Wagner, *Modern Architecture: A Guidebook for His Students to this Field of Art* (Santa Monica: Getty Center for the History of Art and the Humanities, 1988), 86.) Judd owned two copies of Wagner's book.

33

"Report of a Debate..," *RIBA Journal* 65 (1957): 460-61. Smithson, in a somewhat backhanded comment, called attention to the continued "present interest in America in systems of proportion," adding they were, "just an academic post-mortem of our European post-war impulse, as also is this debate at the RIBA."

34

Rudolf Wittkower, *Four Great Makers of Modern Architecture* (New York: Trustees of Columbia, 1963).

35

One of the few times Judd does mention Wittkower in his writing, he refers to him as a "philistine" for rejecting his proposed thesis topic on Ingres (Judd, "A Long Discussion Not About Masterpieces But Why There Are So Few of Them, Part II," *Writings*, 386). He was, however, appreciative of Wittkower's historical study on Bernini, which he called a "pretty thorough job" (Judd, "Jackson Pollock," *Writings*, 195).

from the building will divide the terrace – the balustrade will not be at the edge. One-half the width of the building, marked by a solid line of green granite, 50 x 50cm, will be superimposed on a broad plane of grey granite two-thirds of the width of the building."[31]

The San Antonio cabin and Eichholteren projects serve to elucidate Judd's larger architectural ideology and provide us with one means of more critically dissecting his architectural work. Judd's insistence on the primacy of proportion and symmetry as fundamental organizing devices in his work would seem at first to be anachronistic in an era then dominated by the Modernist view that such historically-aligned referents were incidental, if not irrelevant; both were regarded as irrevocably bound to the retrograde traditions Modernism sought to break with (Le Corbusier, with his Modular, and his followers, remained one notable exception to the rule).[32] Despite a brief resurgence in interest in proportion that followed in the wake of the publication of Rudolph Wittkower's *Architectural Principles in the Age of Humanism* in 1949 and Colin Rowe's extremely influential *Mathematics and the Ideal Villa* and *Mannerism in Modern Architecture* in 1947 and 1950, respectively, by the time Judd enrolled as a master's degree candidate – under Wittkower –at Columbia in 1957, international interest in proportion was again on the wane. A referendum held that same year by the Royal Institute of British Architects on the motion that "Systems of Proportion make good design easier and bad design more difficult" was, in fact, formally defeated in a 48-60 vote, with Peter Smithson notably arguing that it would not contribute to architecture's cultural significance.[33]

Wittkower, however, continued to write on issues pertaining to proportion throughout the time Judd attended Columbia, delivering his last paper, "Le Corbusier's Modular," in 1961.[34] Although Judd never credits Wittkower with influencing his work, it is reasonable to assume that Judd was aware of the debate and Wittkower's ongoing attempts to argue for the continued relevance of proportional study in contemporary practice, and he would undoubtedly have been introduced to his methods of proportional analysis.[35] In a note to himself written 5 January 1993, Judd demonstrates a sympathetic appreciation of the aesthetic power of proportion and, in language and tone, strongly echoes Wittkower's own descriptive prose: "The façade of [Alberti's] St. Maria Novella is a square, which is obvious. The distance between the base of the triangle and the line of its band is equal to the distance between the lower line of the band and the edges of the vaults. The temple front is square. The peak of its triangle marks both squares. The triangle and the band are equal in height. The volutes are each half the temple square, two fourths

5

6

36

Judd, "Notes, 1993," *Writings*, 807. Compare Judd's description with Wittkower's analysis of the same church: "The central bay of the upper storey forms a perfect square, the side of which are equal to half the width of the whole storey. Two squares of that same size encase the pediment and upper entablature which together are thus exactly as high as the storey under them. Half the side of this square corresponds to the width of the upper side bays and is also equal to the height of the attic. The same unit defines the proportions of the entrance bay. The height of the entrance bay is one and a half times its width, so that the relation of width to height is here two to three..." (Rudolf Wittkower, *Architectural Principles in the Age of Humanism*. (New York: WW Norton & Company, 1971), 45-6.) Wittkower also notes that the "Proportions recommended by Alberti are the simple relations of one to one, one to two, one to three, two to three, three to four, etc," the same as those Judd favored: "...the fact is that we can see the simplest proportions, 1 to 2, 2 to 3, 3 to 4, and guess at more" (Judd, "Art and Architecture, 1983, *Architektur*, 177). A copy of Wittkower's book is in Judd's library in Marfa.

5   San Antonio cabin plan and elevations.
    Judd's modifications are highlighted. The
    grid expresses the primary underlying
    proportional skeleton.
    Drawings by the author from measurements
    taken on site. ©Judith Birdsong, 2017

6   Donald Judd sketch for Eichholteren, 24
    February 1987, pencil on paper, 11 3/4 x 8 1/4 in
    Image © Judd Foundation
    Donald Judd Art © Judd Foundation / Artists
   Rights Society (ARS), New York

in the center and one forth on each side. And they are one-fourth high, right triangles of a square one-fourth the square of the temple."[36]

Judd conceives of proportion, however, in profoundly different way from that of Alberti for whom the interdependence of art and a *symbolically resonant* geometry was evidence of the harmonic confluence of the earthly and cosmic realms. Proportion so conceived, bound as it was to transcendental aims, is culturally constructed; it refers to that which physically absent but present by inference. Judd's empties his proportional systems of any such associative content so that they can assume a pure and non-referential aspect. As a result, they become, in essence, a technical instrument and an effective means of ridding his artwork (and, presumably, his architecture) of any residual compositional effect, which he equated with lingering European formalism. And this is exactly how Judd employed it, as one of his many "mute" tools (together with proportion's siblings, symmetry and grid) for delimiting space and organizing objects in space so defined. It finds its locus solely in the intellect and its justification in man's ability to discern the logic anchoring the artist's decisions, but it no related in any way to the external world.

> Returning to the other cabins built by the Friedrichs after the completion of the San Antonio cabin, I believe we can find evidence of one important difference, for Judd, between mere "building" and architecture. But to do so requires a brief detour.
>
> In its refusal of gesture or authorial signature – in the absence of the artist's literal touch – Judd's art work and that of many artists collected under the critically-prescribed umbrella of "minimalism," occasionally suffered for the seeming effortlessness of its conception and birth. "I could do that" was the all-too-often dismissive reaction of a public not alert to the radical underpinnings of the movement; or to the nuanced refinement of joinery, materiality, proportion, placement, and execution that together, in Judd's work, contributed to the success of the piece.
>
> The uninitiated public was not alone in their insensitive assessment. In 1989, Judd brought suit against the Italian collector, Count Guiseppe Panza di Biumo, for fabricating a Judd piece without his input or authorization using a simple sketch by Judd that he had purchased on the open market. Judd was not one to keep such matters in the family (although he did call the need to go public "vulgar"); nor did he suffer fools lightly. Those he felt were guilty of sacrificing ethical responsibility to ambition or those that ran afoul of his strong held beliefs often felt Judd's wrath at the end of the his pen. Judd authored an "opinion," published in
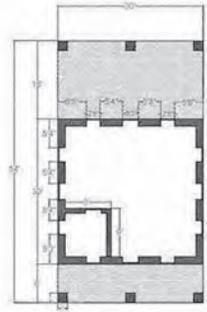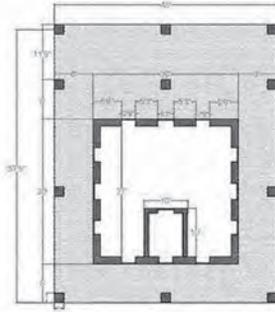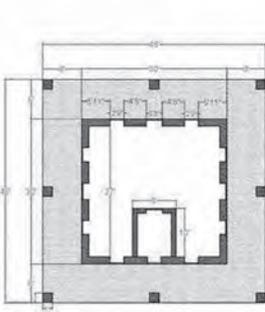
7

37

Judd, "Una Stanza per Panza, 1990," *Writings*, 656.

38

Judd, *ibid*, 675.

39

Judd, *ibid*, 632.

7   Orona, Baviza, and Herman cabins, Chinati
     Mountains State Natural Area. Photographs
     and drawings by Justin Fleury, courtesy
     Texas Parks and Wildlife Department
     (reprinted with permission). ©Justin Fleury, 2017

four parts in *Kunst Intern* in 1990 positioning Panza at the center of an impassioned polemic on art, power, the gallery system, museums, collectors, authenticity, and authorship. It is interesting for what it reveals about where Judd locates the "art" in the artwork.

Judd wrote: "The galvanized surface [of the unauthorized work] was very different from the first, very soft and delicate. The widths of the panels at the corners and ends were different because the room was different and because Panza never asked about these important decisions. …Since to Panza the shape only has to get up off the paper, the nature of the material and of the surface and the details of the construction are all irrelevant. Panza does not even bother to inform himself of the intervals between parts, which were wrong in the four plywood works which he made for Rivoli and exhibited in Madrid. We got to a great deal of trouble to get a certain kind of plywood and the details of the construction are so unusual that the carpentry has become unique. But Panza doesn't care; what I require is too expensive. Consequently Panza makes mock-ups, fakes. …The worst aspect of the work in Varese was that the galvanized iron panels sat on a strip of wood because of the concave floor, confusing the intent of the work as a plane in front of another pane, the wall."[37] In a personal letter to Panza, he is more succinct: "The technology and craftsmanship of my work is part of the art. Work made without my supervision is not my work."[38]

Materiality, details, the relationship of the artwork to its host space, interval, and craft all serve to distinguish a "mock-up" or "fake" from "art." Can we likewise separate Judd's "architecture" from mere building by peering into the divide between the original and the copy? That much of the work built in the 1980s and early 1990s failed to meet Judd's criteria necessary for a building to claim status as architecture is clear in a statement again taken from his open letter to Panza: "Architecture [today] is not comprehensible, is not spatial, and is not even functional." – implying, of course, that true architecture must, at the very least, be all three.[39]

Beyond a formal purity and similar material palette, a close examination of the remaining three cabins (now named Orona, Baviza, and Hermano, shown in) almost immediately reveals the absence of Judd's *comprehensibility* – the requisite proportional skeleton – that characterizes the San Antonio cabin and gives it its architectural authority. [7] The Friedrichs seem to have simply appropriated certain dimensions from the San Antonio Cabin – the eight foot wide porch, for example – and applied them indiscriminately to these new constructions without recognizing that they were derived from, and

40
Judd, "Art and Architecture, 1983," *Architektur*, 177.

43 Judd, "Art and Architecture, 1987, *Architektur,*
196-8. Judd's rules are, in order, "The
relationship of all visible things should be
considered," Second, "...all visible things
are important. As in art, contrary to some,
there are no public and private types, nor in
architecture should there be. The difference
between buildings is in the function, not in the
"style," and in whether they are big or small,
not in whether they are grand or modest."
"Three: the particulars of architecture
are not a nuisance, but sources of good
architecture. Failures of common sense are
also aesthetically disagreeable, such as a
waste or money or a disregard for the site."
Four, "...the function of a building, one thing
which separates architecture from art [is an
interesting consideration from which new
ideas for buildings arise]. Consideration of
the function is enjoyable." Five: "Small Is
Beautiful." Never make anything (politically
as well) bigger than necessary." "Six, which
should have been first: new land should not
be built upon." "Seven: all buildings and cities
should be agreeable and liveable." "Eight:
as '*klein ist schön*,' ['small is beautiful'] so is
simple. ...As to simplicity, to me symmetry
is the given and asymmetry is the exception,
caused only by reasonable particulars, such
as the site or the function. ...And to have
simplicity and symmetry, proportion is crucial;
we see simple proportions. Much of the
quality of a structure lies in these." Expanded
definitions and variations on these appear in
"14 September 1990," and "28 November 1990,"
in Judd, "Notes, 1990," *Writings*, 623 and 627,
respectively.

41
Judd, "Ayala de Chinati, *Architektur, 60*.

42
Judd, *ibid*.

responsible to, a wholly different structure. That there is a *super-ficial* proportional division of space and the axial symmetry Judd favored can't be denied – Judd's love of quartered squares, which he employed in the design of his windows at the artillery sheds and characteristic pivoting doors, is certainly apparent – but the holistic, consistent, and recognizable order that Judd considered requisite is absent; the cabins do not make a "coherent, intelligent space."[40] It is obvious from Judd's letter to Philippa that the Friedrichs, like Panza, were guilty of "badly duplicating" his work, operating without a deep and sympathetic understanding of his motivating forces, thereby debasing his ideas, and in his letter to Philippa, Judd dismisses them as "buildings," well shy of "architecture."

"I remember you saying how much you like the land and intended to protect it. Yet you've bulldozed wide roads everywhere, even alongside the old ones, with large drainage cuts, just as AJ Rod, the appalling redneck businessman from Houston, has done to his land. I'm ashamed that I told you about Mesquite."

/ Excerpt, Letter to Philippa Friedrich, 25 August 1983, Donald Judd Texas ©2017 Judd Foundation

In the above-referenced photograph [2], Judd sits with his back to the house, looking out toward the hills beyond; he turns toward the landscape. This is, quite probably, the orientation any visitor would assume. Certainly, the unidentified guest beyond Judd sits looking in the same direction. Judd was ardent in his adoration of the land and in his defense of the environment, and he felt contemporary archi-tecture was a complicit participant in the destruction of the earth; he once proudly declared, "I've never built anything on new land."[41]
    Judd wrote, "Here, everywhere, the destruction of new land is a brutality. Nearby a man bought a nearly untouched ranch three or four years ago, bulldozed roads everywhere so he could shoot deer without walks, and last fall died. In another direction a pair cut their land to pieces for no reason at all. Within a real view of the world and the universe this violence would be a sin."[42] I believe the pair he was referring to was the Friedrichs. This was written in 1987, the same year Judd first offers us his "rules" for building. Number six (which, as he says, "should have been first") reads, "new land should not be built upon."[43] He closes the same essay by reiterating, "All ideas, seemingly simple and easy, are difficult for people to understand. One of the most difficult is the one of

44

Judd, *Writings*, 496. On 14 September, 1990, he wrote "Order of importance: 1. Preservation of land;" again, on 28 November 1990, he reiterates, "Rules in order of importance: 1. Preservation of the land. Don't build." (Judd, "Notes, 1990," *Writings*, 623 and 627, respectively.)

45

Judd, "Notes, 1990," *Writings*, 623. He was also remarkably prescient, voicing concern over the destruction of the ozone layer as early as 1989.

46

Judd, "Art and Architecture, 1987, *Architektur,* 196-8

47

Judd, "Art and Architecture 1987, *Architektur*, 197.

48

Judd, "Marfa, Texas 1985," *Writings,* 432.

49

Judd, "A Long Discussion," *Writings*, 175.

50

Judd, "Notes, January to August, 1991," *Writings*, 701.

leaving the land alone: Leave it alone or return it to its natural
state."[44] Judd refined his rules over time, but his concern for the
land—and by extension, the environment—always topped the list.[45]

Judd's eighth and final rule reads, as '*klein ist schön*,' ['small is
beautiful'] so is simple. ...And to have simplicity and symmetry,
proportion is crucial; we see simple proportions. Much of the quality
of a structure lies in these."[46] The Friedrichs were thus guilty of
violating two of Judd's rules. In addition to "debasing" his ideas in
the design of the later cabins (breaking rule eight), they were built
on undisturbed land, far removed from one another, requiring the
introduction of new roads and infrastructure as well as the leveling
of the building site thereby grossly violating Judd's first and most
important rule. This, then, was the transgression the Friedrichs
were most guilty of and explains the rancorous tone of the letter.

Given Judd's insistence that art deny any referential inflection, it is no
surprise that the architects he relentlessly condoned in his writing and
lectures were the leading figures of then-current Post-modernist style:
Philip Johnson, Robert Venturi, Charles Moore, Robert AM Stern; or
those, like Frank Gehry, who Judd thought were guilty of unnecessary
and self-conscious formal indulgence. ("'Forms' for their own sake,
despite function," he wrote, "are ridiculous."[47]) At a time when the disci-
pline was mired in theoretical debates over the locus of signification in
architecture, Judd simply bypassed the argument altogether to produce
built work that denied signification entirely. Judd was obviously aware he
was operating in the margins: "In contrast to the prevailing regurgitat-
ed art and architecture, I think I'm working directly toward something
new in both."[48] The correspondence between his art and architecture
is most clear here; he offers up both as an anchoring antidote to the
prevailing crisis, and proportion and symmetry, commonly employed,
provided him with the non-subjective means to this non-referential end.
This didn't relieve his architecture of functional considerations; on the
contrary, he called function one of architecture's "informative delights
and not burdens,"[49] and mourned the fact that most architects had, in
his opinion, relinquished responsibility to a building's purpose in their
pursuit of image-laden solutions He derisively called them, among other
things, "exterior decorators".[50] Judd, however, qualifies what could have
been mistaken for a determinist position, stating, "Form may not closely
follow function, but my axiom is that form should never violate the
function," and thus neatly avoids being labeled a regressive functional-
ist. Whether Judd's art, which he freed from relational bias through the
agency of mute grids and proportional order, was engendered by his

"This should help teach them how to live."

/   Donald Judd

51

The reasons behind Judd's decision to give up architecture to become an artist are often quoted: "While I was in the army in 47, helping to occupy Korea, before going to college, my assignment to myself was to decide between being an architect or an artist, which to me was being a painter. Art was the most likely in the balance, but the decisive weight was that in architecture it was necessary to deal with the clients and the public. This seemed impossible to me, as did the business of a firm." (Judd, "Art and Architecture, 1987, *Architektur*, 195).

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For more on the causal relationship between Minimalist art and architecture, see Mark Linder, *Nothing Less Than Literal: Architecture After Minimalism* (Cambridge: The MIT Press, 2004).

53

Jamie Dearing, email message to the author, August 5, 2017.

54

Marianne Stockebrand, *Chinati: The Vision of Donald Judd*, ed. Marianne Stockebrand (Marfa: The Chinati Foundation and Yale University Press, 2010), 21.

55

Judd, "Art and Architecture, 1983," *Architektur*, 177.

work under Wittkower while at Columbia, or whether his non-referential architectural works resulted from his artistic explorations remains to be seen. But it is tempting to imagine a scenario where Judd's early (and sustained) interest in architecture[51], provided his art with the impetus necessary to help change the course of 20th century art.[52]

I asked Judd's assistant, Jamie Dearing, what he remembered about the day he visited the cabin and took the photograph. He replied, "The day Don and I and the kids went to inspect his house, he seemed pleased. I assumed everything done there (up to that point) was his. I remember him saying something like, 'This should help teach them how to live.' Not said as an insult, but as a genuine expression of hope."[53] Exactly what Judd meant by this is hard to say, but when we teach, we attempt to explain, in words, or we demonstrate, by example. With the redesign of the cabin, Judd created "a microcosm that satisfied the demands of the intellect as well as the senses."[54] Recalling another quote from Judd: Proportion is "thought and feeling undivided, since it is unity and harmony, easy or difficult, and often peace and quiet. …Proportion and in fact all intelligence in art is instantly understood, at least by some. It's a myth that difficult art is difficult."[55]

Diagonal Poems of the Right Angle
/
Parallels in Practice in the Works of Richard Paul Lohse and Aldo van Eyck

Robert McCarter

1

Robert McCarter, *Painting Into Architecture: Shared Spatial Speculations*, under publisher review.

From its beginning, modernism was understood by its leading prac-
titioners to integrate and engage all the arts. Yet this modern tradi-
tion was abandoned in the great majority of architecture built in the
latter half of the 20th century, and today is almost entirely forgotten,
edited out of both the canonical histories and daily practice of ar-
chitecture and art. What were originally understood by their practi-
tioners to be integrated, experientially based disciplines of making
have now been segregated by professional specialization, educational
hermeticism and critical isolation, leading to the all-too-common
definition of architecture and art as entirely autonomous practic-
es. Yet, despite being almost entirely overlooked in critical discourse
and academic scholarship, this other modern tradition has con-
tinued to evolve in practice through the 20th century to today.

   This essay is a part of a larger study by the author that examines this
other modern tradition—a tradition wherein spatial concepts, ordering
principles, experiential precepts and design methods are shared in the
work and teaching of both modern painters and modern architects; a
tradition originating in the beginnings of modernism and continuing
unabated, if largely unrecognized, to this day.[1] The study documents the
ways a number of leading modern architects initially established the tra-
dition of actively engaging the implications of the spatial speculations to
be found in modern paintings; the manner in which later modern archi-
tects built upon the tradition; and how contemporary architects continue
to engage the tradition as an integral part of their modern inheritance.

   The core of this study are examples of three types of pairings of
painters and architects: *parallels in practice*, an actual relationship where
contemporaries were influenced by each other; *parallels across time*, an
actual relationship where a contemporary architect draws upon the work
of an earlier painter; and *parallels in principle*, a purely speculative 'rela-
tionship' where contemporary painters and architects on spatially distant,
non-crossing paths, unaware of each other's work, are nevertheless found
to employ similar ordering principles. The three types of artist-archi-
tect pairings serve as the most effective demonstration of this modern
tradition being put into practice within the studio disciplines, exempli-
fying the ongoing, active, and productive nature of this tradition today.

2

Lohse's complete works are at the time of this
writing being published by the Richard Paul
Lohse Foundation, Zurich, in four volumes; to
date, Volume 1, *Richard Paul Lohse: Graphic
Design 1928-1988* (Ostfildern: Hatje Cantz,
1999), and Volume 2, *Richard Paul Lohse:
Prints* (Ostfildern: Hatje Cantz, 2009), have
been published.

3

Hans-Peter Riese and Friedrich Heckmanns,
Richard Paul Lohse: Drawings 1935-1985 (New
York: Rizzoli, 1986), 138.

In the present essay, this other modern tradition of shared princi-ples of space, order, perception and design between art and architec-ture will be explored by pairing the Swiss painter Richard Paul Lohse and the Dutch architect Aldo van Eyck—this pairing is an example of a *parallel in practice*, an actual relationship of contemporaries.

Richard Paul Lohse (1902-1988) was a versatile designer, and today he is equally recognized for his graphics, advertising, and exhibition design as for his paintings and prints.[2] He was born in 1902 in Zurich, Switzerland, and began painting at age 15. From 1918-22 he apprenticed to an advertising and graphic designer while studying at the Kunst-gewerbeschule in Zurich under Ernst Keller. From 1922-30 he worked in the advertising designer Max Dalang's studio, and painted still lifes, landscapes and "experimental" paintings. In 1930 he established his own advertising and graphic design studio with Hans Trommer, and he would continue this work for the rest of his life. In 1933 Lohse joined the "friends of New Architecture," a group of Swiss artists who supported modernism, and in 1937 he co-founded Allianz, the Association of Mod-ern Swiss Artists. Active in anti-fascist movements in Germany, Italy, and France from 1935-44, Lohse was also involved in art exhibitions, as well as editing and designing the leading Swiss architectural publication *Bauen and Wohnen* from 1947-55, where in 1948 he published the archi-tect Aldo van Eyck's first built work, the 1946 tower room renovation for the Loeffler family in Zurich. Also indicative of Lohse's interdisciplinary interests was the fact that in 1947 he was commissioned to develop an educational program entitled "Interrelationships Between Art and Archi-tecture" for the Eidgenossische Technische Hochschule (ETH) in Zurich.[3]

Starting in 1933, Lohse met a number of artists and architects who passed through Zurich, largely due to the rise of Nazi-ism: the artists Paul Klee, Lazlo Moholy-Nagy, Sophie Taeuber-Arp, Hans Arp, Georges Vantongerloo, and the architects Serge Chermayeff, Charles Eames, Ger-rit Rietveld, Cornelius van Esteren, Le Corbusier, Konrad Wachsmann, and Georgy Kepes. Zurich would remain Lohse's home, and there he would meet Aldo van Eyck when the latter lived in Zurich from 1938-46.

In 1943, shortly after he had met Van Eyck, Lohse became aware of Piet Mondrian's recently completed "Broadway Boogie-Woogie" of 1942, and as a result Lohse decided to give up all figural elements in his painting, and to pursue what he later called a "constructive system," beginning with the ordering of the entire surface of the canvas as a vertical structure, which he later called "serial systems." The regularly ordered, equal-width vertical bands were joined around 1945 by the "rhythmical progression" or "fugue" series, where the bands varied in width, but usually in a repeating pattern, which he came to call "themes."
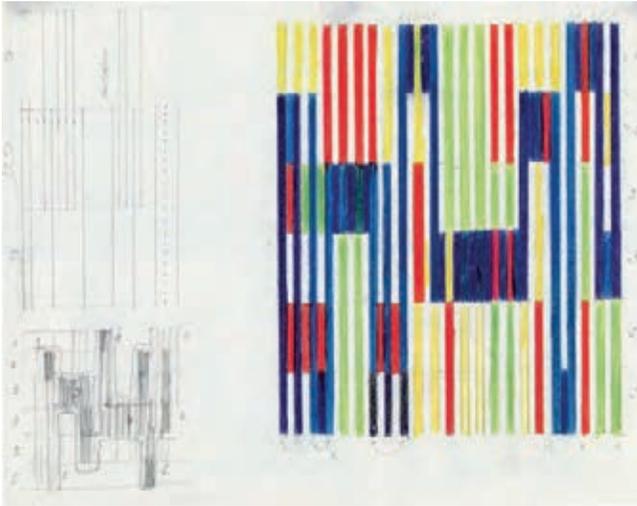
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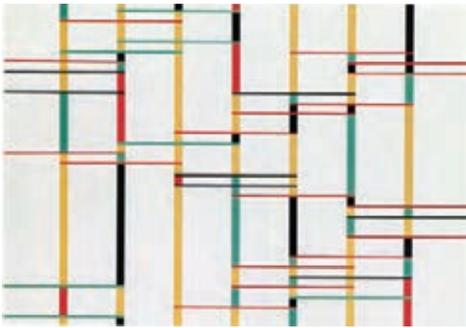
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Willy Rotzler, *Constructive Concepts: A History of Constructive Art from Cubism to the Present* (New York: Rizzoli, 1989), 150.

5

Margit Staber, "Concrete Painting and Structural Painting," in Gyorgy Kepes, ed., *Structure in Art and in Science* (New York: Braziller, 1965), 165.

6

Hans Arp, *On My Way—Poetry and Essays* (New York: Wittenborn, 1948), 72.

7

"Concrete Art" is documented by Willy Rotzler, who characterizes it as a largely Swiss movement, in *Constructive Concepts: A History of Constructive Art from Cubism to the Present* (New York: Rizzoli, 1989); first published by ABC Edition, Zurich, 1977. Post-war "Concrete Art" is also documented in *Concrete Art in Europe after 1945*, The Peter C. Ruppert Collection (Hatje Cantz: Ostfildern, 2002).

1   Richard Paul Lohse, *Serial elements in rhythmical groups, 1945*; colored pencil study

2   Richard Paul Lohse, *Konkretion III*, 1947

Lohse's use of musical terminology is hardly accidental, and reflects the powerful impact on Lohse of Mondrian's final paintings, including the "Victory Boogie-Woogie" of 1942-44. After this time, Lohse dedicated himself exclusively to engaging the vertical and horizontal, the right-angle grid as an ordering device, and the use of color and rhythm to construct diagonal spatial tensions and rotational volumes within a strictly orthogonal geometry. Lohse stated; "I try to conceive a picture with the simplest possible basic elements: square, line, ribbon elements that are in structural relationship with the bounding lines of the composition. Since 1943 I have used rectangular forms only."[4] [1-2]

In 1944 the exhibition "Concrete Art" was held at the Kunsthalle Basel, and included works by Wassily Kandinsky, Klee, Theo van Doesburg, Piet Mondrian, Arp, Vantongerloo, and the Swiss artists Walter Bodner, Leo Leuppi, Max Bill, and Lohse. The term "Concrete Art" had been coined in 1930 by Van Doesburg, who, in Margit Staber's paraphrase, defined concrete art as "art in which all gradations of abstraction had been overcome and in which previously unknown pictorial possibilities were discovered and realized solely through the use of color and form, light and movement, all sorts of different materials and methods, and by means of constructive 'structural' laws." The core ideas shared by concrete art, in all its variations, was that of the viewer's direct experience of the materiality and structure of "a creative idea that has been transmuted into the reality and sensuousness of the work of art."[5] In 1948, Arp wrote: "Concrete art aims to transform the world. It aims to render existence more bearable. It aims to save man from his most dangerous folly: vanity. It aims to simplify human life. It aims to identify with nature. Reason uproots man and makes him lead a tragic existence. Concrete art is an elementary art, natural and healthy, which makes the head and heart sparkle with the stars of peace, love and poetry. Where concrete art enters, melancholy departs, lugging its grim suitcases full of black sighs."[6]

Over the next few years, Lohse would work out his own definition of the largely Swiss evolution of constructive art known as "Concrete Art."[7] Lohse held that concrete art was derived from modern art, saying that, since Cézanne, painting has conceived of itself as two-dimensional, so that content and process have merged. Lohse's paintings are rigorously ordered on a right-angle grid, with colors and volumes objectified, the paradoxical result of which is the variability, extendibility, and legibility of both the individual elements and collective orders; both the primary colors and polychromaticism; and both the rectangular structure and diagonal movement. In 1944, Lohse articulated the concept of the principle of equilibrium in the quantity of color, so that, while remaining identifiable and individual, no color would read

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Richard Paul Lohse, quoted in Hella Nocke-Schrepper, "'Child Without a Name?' On the Development and Terminology of Concrete Art in Switzerland," *Concrete Art in Europe After 1945* (Ostifildern-Ruit: Hatje Cantz, 2002), 97, 99.

9

Richard Paul Lohse, in *Richard Paul Lohse: 1902-1988* (Budapest: International Colour and Light Foundation, 1992), 22, 83.

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Rotzler, op. cit., 151.

3   Aldo van Eyck, gateway for "Rotterdam Ahoy" exhibit, 1950

4   Aldo van Eyck, interior, Roman Catholic Church, The Hague, 1963-69

more strongly than any other. That this equilibrium, normally a static concept, could coexist in paintings of such apparent dynamism and disequilibrium would prove to be the special genius of Lohse's work. Lohse's paintings consistently involved rigorous right-angle grid orders, into which were woven, through the use of color and rhythm, various diagonal tensions, often including dynamic pinwheel compositions, but Lohse achieved this without ever employing any literal diagonal forms.

From the very beginning, Lohse regards the primary goal of painting to be the preservation of the surface—in order to accomplish this, the typification of the pictorial elements is a prerequisite. The unity of form, surface, and space emerges through the internal structure, which corresponds to the boundaries of the canvas, a process Lohse calls "constructive concretion." The starting point for all of Lohse's paintings is his concept that "the picture itself is and remains structure."[8] Willi Rotzler has noted that in Lohse's paintings there are no primary or secondary elements, no foreground or background, no figure or ground, no positive or negative, and thus there is no hierarchy. Lohse's paintings are the product of a rigorously resolved ordering system, which begins with the setting of bounds within which the work can be developed. "The picture field is a structural field," which, as Lohse noted, yields, "A paradox: the integration of boundaries leads to the unlimited." This is complemented by Lohse's idea that the more rigorous the structure of the painting, and the more precisely bounded the field of action, the more likely is the result of "variability and extensibility."[9] Lohse also believed his paintings and their ordering system held a deeper social meaning, as Rotzler noted; "[Lohse] calls his structures 'democratic:' the elements enjoy equality in their system, and they are dependent on each other for the formation of the whole," leading to Lohse's parallel interest in new forms of democracy, "the environment, the humanism of our living space, and the implementation of social justice."[10] [3-4]

Aldo van Eyck (1918-1999) was an architect, urbanist and critic, and one of the founders of Team 10, a group of younger architects who broke away from the Congrés Internationaux d'Architecture Moderne (CIAM) in the late 1950s, and in his work and writings, he articulated a humane, holistic, historically informed, and contextually sensitive vision of modern architecture and urbanism. Van Eyck was born in 1918 in Driebergen, the Netherlands, and his father was a leading Dutch poet and cultural reporter for a leading Dutch newspaper. A year after his birth the family moved to London, and Van Eyck was educated at the King Alfred School, an experimental arts school, and at Sidcot School, which was run by the Quakers. Initially interested in literature, Van Eyck attended the Senior Secondary Technical School in the Hague from 1935-8, where he

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Aldo van Eyck, "Ex Turico aliquid novum" (1981), Vincent Ligtelijn and Francis Strauven, *Aldo van Eyck: Writings* Volume 1 (Amsterdam: SUN, 2008), 18.

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C. Giedion-Welcker, "Arp," *Horizon* (1946, No. 82); and H. Arp, *On My Way* (New York, 1948); cited in Francis Strauven, *Aldo van Eyck: The Shape of Relativity* (Amsterdam: Architectura & Natura, 1998), 87.

5   Aldo van Eyck, ground floor plan, Amsterdam
     Municipal Orphanage, 1955-60

6   Richard Paul Lohse, *Rhythmical system
     vertically divided*, 1949-50

studied architecture and art. Van Eyck then studied architecture at the
ETH Zurich from 1938-42, where he was able to attend lectures by Carl
Jung, the leading exponent of significant form in human psychology.
After graduating in 1942, in the midst of WWII, Van Eyck was unable to
return to the Nazi-occupied Netherlands and remained in Zurich until
the end of the war. There he worked for a number of leading modern ar-
chitects including Ernst F. Burckhardt, Alfred Roth, Hans Fischli, and the
firm composed of Max Ernst Haefli, Werner Moser and Rudolf Steiger.

During this period, Zurich was a refuge for all the forms of mod-
ern art that the Nazi's had labeled "decadent," and here Van Eyck
met Carola Giedion-Welcker, the first important art historian to en-
gage modernism, and the wife of architectural historian and CIAM
co-founder Sigfried Giedion. Giedion-Welcker would become one
of the most important influences on Van Eyck's thinking, and, in
describing her affect on him, Van Eyck wrote: "She opened my win-
dows—and I haven't closed them since; she tuned my strings—nor did
they ever require retuning… Carola Giedion provided nourishment
for a lifetime."[11] Through Giedion-Welcker, Van Eyck came to know
the work of artists Hans Arp, Max Ernst, Piet Mondrian, Theo van
Doesburg, Alberto Giacometti, Karl Schwitters, Constantin Brancusi,
Paul Klee, Pablo Picasso, Joan Miro, Robert Delaunay, Antoine Pe-
vsner, Georges Vantongerloo, Georges Braque, and Ferdinand Leger,
the writers Andre Breton, Tristan Tzara, James Joyce, T.S. Eliot, and
Ezra Pound, the composer Arnold Schonberg, the philosopher Henri
Bergson, and especially the Swiss painter Richard Paul Lohse. [5-6]

Van Eyck was deeply influenced by the belief, shared by Giedi-
on-Welcker and these artists, that the primary aim of modern art and
architecture is to rediscover the essential, particularly the essential
nature of humankind, and that this required the engagement and res-
olution of paradoxical concepts; what Van Eyck later called the "twin
phenomena." In 1946, Van Eyck made a very free "translation" of a
Giedion-Welcker essay on Arp, transforming her ideas and even in-
serting new ones of his own devising, including the statement that
Arp's work spans the ages, "reflecting what is constant and constantly
changing"—a phrase suggesting the fusing the timeless and the con-
temporary that was not to be found in her original manuscript, but a
phrase that would repeatedly appear in Van Eyck's own later writings.[12]

Van Eyck would remain a close friend to many artists, and he was
instrumental in first publishing the work, and setting up the first ex-
hibitions of many, particularly the international group called COBRA.
The painter, Constant Nieuwenhuys (co-founder of COBRA and author
of the visionary urban design, "New Babylon"), came to Van Eyck's

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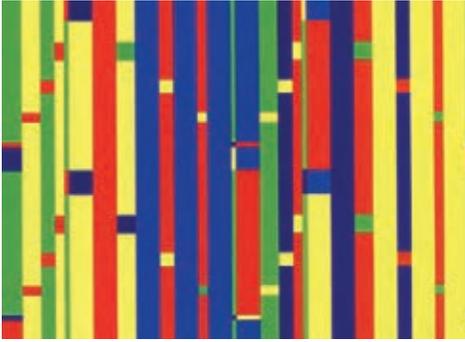
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Strauven, op. cit., 125.

14

Aldo van Eyck, "Ex Turico aliquid novum," in Ligtelijn and Strauven, op. cit., 19.

15

Richard Paul Lohse, in a 1981 interview with Strauven; Strauven, op. cit., 96.

7   Aldo van Eyck, ground floor plan, Primary School at Nagele, 1954-56

8   Richard Paul Lohse, *Four themes of equal form*, 1949-50

Amsterdam apartment in 1947 to see his collection of art, which at that time already included Mondrian, Van Doesburg, Arp, Miro, Giacometti, and Klee, among others. After COBRA was formed in 1948, Van Eyck's apartment became a meeting place for the artists, and while he was not a member, Van Eyck approved of their collective efforts, actively taking part in their discussions, even though they criticized De Stijl and Surrealism—and even when Constant threatened to fill in what he called the "blank spaces" of Van Eyck's Mondrian painting. Yet when Van Eyck designed two installations of the works of the COBRA group, in Amsterdam in 1949 and in Liege in 1951, Francis Strauven has noted how he incorporated the impulsive and instinctive works of his friends into layouts based on the pure De Stijl geometries of Mondrian.[13] [7-8]

It was during the Zurich period of 1938-46 that Van Eyck first met Lohse and came to know his work. Van Eyck was strongly moved by the psychological insights to be found in the works of the Surrealists, Miro, Ernst and Arp, as well as being inspired by the strong sense of space and order in the work of the DeStijl, Mondrian, Vantongerloo and Van Doesburg. Recalling his earliest discussions with Lohse, Van Eyck remembered Lohse "forgiving my simultaneous (and lasting) infatuation with both Mondrian and Miro."[14] In fact, Lohse was astonished that Van Eyck could engage such a wide range in art; "But Aldo, you are a split person! You consist of Miro and Mondrian and these two wage a continuous fight in your inner self!"[15]

This engagement of a broad range of art would continue throughout Van Eyck's career, perhaps peaking at the 1959 Otterloo CIAM conference. Van Eyck's talk at this conference was a sustained attack on what he felt was the aesthetically and ethically bankrupt state of mid-century modern architecture, dominated as it was by large corporate practices and formalistic urbanism. He singled out modern architecture's failure to meet the challenge of engaging the ideas of the earliest modernists in all the arts, and the way mid-century modern architecture had turned its back on this, its own legacy. Van Eyck called attention to the liberative concepts discovered by Picasso, Klee, Mondrian, Joyce, Schoenberg, and Bergson; "Surely we cannot permit modern architects to continue selling the diluted essence of what others spent a lifetime finding. They have betrayed society in betraying the essence of contemporary thought…Far from expanding reality [as the modern artists and poets have done], architects have contracted reality." Van Eyck went on to argue; "Modern architects have been harping so continually on what is different in our time to such an extent that even they have lost touch with what is not different, what is always essentially the same. This grave mistake was not made by the poets, painters, and sculptors. On the contrary, they never

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Three versions of Van Eyck's first talk at Otterlo exist; the first is an incomplete transcription taken from a recording made by Herman Haan at the Congress (NAi, Rotterdam), transcribed in Ligtelijn and Strauven, op. cit.; the second is the edited and slightly different version that appears in *Team 10 Primer*, Alison Smithson, ed. (Cambridge: MIT, 1968); and the third is published in Oscar Newman, *CIAM 59 in Otterlo* (Stuttgart: Karl Kramer, 1961). All texts included in Newman were edited by their authors.

17

Van Eyck, "What Is and Isn't Architecture: Apropos of Rats, Posts and other Pests," *Lotus* International 28, 1980 (Milan), 15-19. For Van Eyck, the "Rationalists" (Rats) and the "Post-Modernists" (Posts) were exemplified by Aldo Rossi and Leon Krier, who rejected modern architecture and embraced classicism in its traditional and modern forms, and the "Other Pests" were exemplified by Peter Eisenman and Rem Koolhaas, who embraced "De-Constructivism" and its emphasis on fragments and chaos.

18

Richard Paul Lohse, "Lines of Development, 1943-84," in Hans-Joachim Albrecht et. al., *Richard Paul Lohse* (Zurich: Waser Verlag, 1984), 143.

19

Aldo van Eyck, "Ex Turico aliquid novum," in Ligtelijn and Strauven, op. cit., 19.

9   Aldo van Eyck, diagram for Congress Building, Jerusalem, 1958

10   Richard Paul Lohse, *Movement of groups of colors away from their centers*, 1953

11   Aldo van Eyck and Jaap Bakema, Urban design for Buikslotermeer, 1962

12   Richard Paul Lohse, *Interpenetrating axes*, 1954; colored pencil study

narrowed down experience, they enlarged and intensified it."[16] [9-10]

That this reference to art would remain a lifelong habit of Van Eyck's is indicated by the following passage from his 1980 *Lotus* essay, "What Is and Isn't Architecture: Apropos of Rats, Posts, and Other Pests," an attack on the various forms of so-called Post-Modernism. Van Eyck labeled this work "treason," saying that contemporary architects had forgotten the work of the early modern artists, architects, and poets, saying that "to willfully—and spitefully—neutralize, counteract, or deprecate the message this century's pioneer period carried…is, intellectually, the most short-sighted thing imaginable—also the vilest and most irresponsible."[17]

From the very beginning of their friendship, Van Eyck believed that Lohse's work was characterized by principles relevant to architecture and urban design, for Lohse's paintings showed how the spaces and relations between things were more important than the things alone. In a statement full of implications for architecture and urban design, Lohse said; "It is clear that to overcome the division between programmed theme and undefined area, norm and action must be controlled by a rhythmic principle."[18] Van Eyck found this same type of spatial pattern in the African weavings and prints he collected during his many trips to Africa starting in 1947, and he held that such patterns allowed the small and the large numbers, the individual and the collective, to be correlated within the same order. From these sources, Van Eyck evolved his concept of "the aesthetics of numbers," and he saw that Lohse's patterns, when developed as urban plans, would allow both the identity of the individual and the larger community to be expressed—and in fact to depend on each other—as what Van Eyck called the "twin-phenomena" of many-few, large-small, whole-part, and collective-individual, which could be simultaneously engaged in a design, rather than emphasizing one over the other. [11-12]

In recalling his time in Zurich, Van Eyck stated; "Two of [Lohse's] paintings in particular have been in my mind as though engraved there, almost since they were made around 1946… Boundless space (in which breathing goes freely) yet firmly contained within the finite surface of two small rectangles—but what bracing rhythm—what rippling multiplication and continuity. Harmony in motion, I called it. Surely the future lies in these beautiful paintings?"[19] The two early paintings, which Van Eyck often showed in lectures on his own work, deserve our close attention. "Konkretion I" of 1946 is composed of a series of eighteen equal-length thin single-color vertical lines, arranged in three different positions across the square board. The vertical lines are joined by small squares aligned in six different positions from bottom to top, constructing both horizontal patterns and a series of interlinked figures that seem to rise and fall as they move from left to right, forming
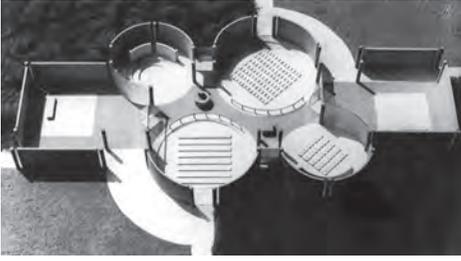
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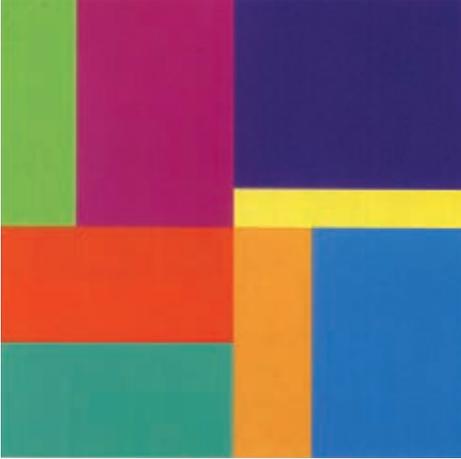
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Aldo van Eyck, "Aesthetics of Number," in
Ligtelijn and Strauven, op. cit., 56.

21

Richard Paul Lohse, from an interview with
Francis Strauven in Zurich, 19 August 1981.

13   Aldo van Eyck, model with roof removed,
     "Wheels of Heaven" Church, Driebergen, 1963-64

14   Richard Paul Lohse, *Two rotations around a
     center*, 1952-69

strong diagonal tensions on the surface of the painting. "Konkretion III" of 1947 is composed of seven vertical bars spaced equally across the rectangular board and linked by a series of thin horizontal lines, each of which runs across two of the "bays" formed by the vertical bars. Where the thin horizontal lines, in red or green, meet the thicker vertical bars, a color change occurs in the segments of the vertical bars, which are red, green, black and yellow. In this way, despite the predominance of the vertical bar forms, their colored segments, linked to the thin horizontal lines, constructs a surprisingly strong horizontal counterpoint, bringing the painting into a dynamic diagonal balance.

In his statement made at the CIAM 9 conference at Aix-en-Provence in 1953, Van Eyck defined his idea of "the aesthetics of number," and its relation to urban design: "In order to that we may overcome the menace of quantity now that we are faced with *l'habitat pour le plus grand nombre*, the aesthetics of number, the laws of which I should like to call "Harmony in Motion" must be discovered." He went on to define this as "theme and its mutation and variation."[20] Yet it was Lohse's reaction to a design by the architect Jaap Bakema, Van Eyck's fellow Dutch Team 10 member, which first provoked Van Eyck to formally address the manner in which Lohse evoked diagonal movements within a completely orthogonal geometry. After Bakema presented his first urban design for Pendrecht of 1949 at the CIAM conference on Bergamo, Italy the same year, Lohse told Bakema that he recognized in the plan much of what he was trying to achieve in his own paintings, including the repetition of elements and their composition into themes and variations whose structural patterns "make it possible to expand or contract in every dimension." Lohse's characterized his paintings as an attempt to develop a method for future use in architecture and town planning "when land is no longer the property of individuals."[21] Bakema published the second, revised 1952 urban design for Pendrecht, which was influenced by Lohse's paintings, with mention of Lohse's endorsement, in the Dutch magazine *Forum*. [13-14]

In the same issue of *Forum*, the journal's editor, Van Eyck, published a photograph of Lohse's *Konkretion III* of 1947, along with a text by Lohse and a statement of his own, in which Van Eyck indicated precisely what he believed were the important implications of Lohse's work for urban design: "In search of the further principles of a new form language, the Swiss painter Lohse discovered the aesthetic meaning of number. Imparting rhythm to repetitive similar and dissimilar form, he has managed to disclose the conditions that may lead to the equilibrium of the plural, and thus overcome the menace of monotony. The formal vocabulary with which man has hitherto imparted harmony to singular and particular cannot help him to equilibrate the plural
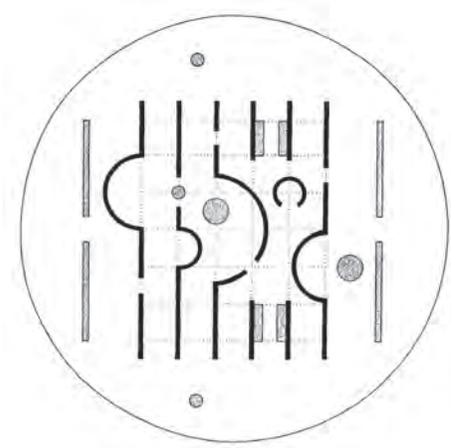
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Aldo van Eyck, "Lohse and the aesthetic meaning of number," in Ligtelijn and Strauven, op. cit., 56.
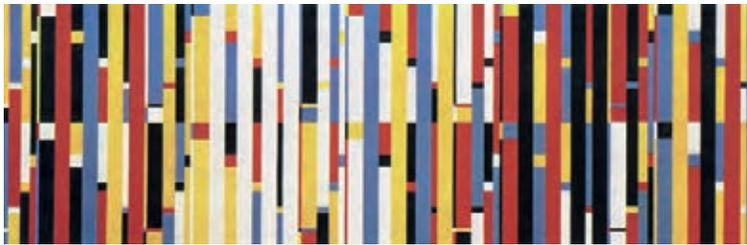
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Richard Paul Lohse, *New Design in Exhibitions* (Zurich: Erlenbach Verlag fur Architektur, 1953), 259.

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Aldo van Eyck, "The City, the Child, and the Artist," *Aldo van Eyck: The Writings*, Volume 2 (Amsterdam: SUN, 2008), 168; this is a rephrasing of Van Eyck's description of Lohse's paintings in the 1952 issue of *Forum*.

15   Aldo van Eyck, floor plan, Sonsbeek Pavilion, Arnhem, 1965-66

16   Richard Paul Lohse, *Ten equal themes in five colors*, 1946/1958

and the general. Man shudders because he believes that he must forfeit the one in favor of the other: the particular for the general, the individual for the collective, the singular for the plural, rest for movement. But rest can mean fixation—stagnation—and movement, as Lohse shows, does not necessarily imply chaos. The individual (the singular) less circumscribed within itself will reappear in another dimension as soon as the general, the repetitive is subordinated to the law of dynamic equilibrium, i.e. harmony in motion. Fearful of the monotony of number, repetitive elements in town planning are often needlessly combined into themes, as though the meaningful rhythmification of a repeating theme were not an even more demanding task—for the time being. The significance of Lohse's work in this process is evident."[22]

Van Eyck's 1952 article in the Dutch journal *Forum* was one of the first international publications of Lohse's paintings, and in doing so Van Eyck might be said to have "returned the favor" for Lohse's publication of Van Eyck's first project in *Bauen und Wohnen* in 1948. In 1953, Lohse again published Van Eyck's work in his book *New Design in Exhibitions*, a remarkably comprehensive presentation of 75 examples of modern exhibitions from around the world from 1930-51, including four exhibitions of Lohse's own design. In the caption for Van Eyck's entry gateway in the "Rotterdam Ahoy" exhibit, Lohse described the 15-meter by 15-meter, vermillion-colored I-beam structure as "an excellent organization of an area with its methodological plastic realization. Form, construction, and material have become a perfect unit."[23] [15-16]

The ordering principles that Van Eyck developed in his architecture, inspired by Lohse's paintings, included the importance of elements as boundaries defining space, rather than objects in space; the delimitation of space by elementary forms; the search for dynamic space within the orthogonal grid; the creation of a shifting center by use of centrifugal pattern; the establishment of non-hierarchical cohesion between various centers—polycentric orders; variation of themes; point and counterpoint; syncopated rhythm; and the methods by which one could "impart rhythm to repetitive similar and dissimilar form, thereby disclosing the conditions that would lead to the equilibration of the plural, and thus overcome the menace of monotony."[24]

Lohse argued that concrete art, while non-representational in the traditional sense, was not isolated from society; rather he held that the two-dimensional designs in concrete art were indicative of fundamental structural changes in contemporary society, and he conceived of his pictorial orders as the visualization of radical models of democracy. Lohse came to regard his systematic configurations as an opportunity to allow human insight into the relationship between order and

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Friedrich Heckmanns, "The drawings and character of the artist and his times," Riese and Heckmanns, op. cit., 27-28.

26
Richard Paul Lohse, in *Richard Paul Lohse: 1902-1988*, op. cit., 72.

27
Heckmanns, *Richard Paul Lohse: Drawings, 1935-1985* (New York: Rizzoli, 1986), 28.

28
Richard Paul Lohse, *Serial Systems*, exhibition catalog, Kunstvereine e. V., Braunschweig, 1985; Series 3, 12, 17. Translated by Heckmanns, op. cit.

29
Aldo van Eyck, "The fake client and the great word 'no'" in Ligtelijn and Strauven, op. cit., 325.

30
Richard Paul Lohse, quoted in Vincent Ligtelijn, *Aldo van Eyck: Works* (Basel: Birkhauser, 1999), 296; original interview published in Dutch in *Niet on het even... wel evenwaardig, van en over Aldo van Eyck* (Amsterdam: Van Gennep, no date), 18.

17   Aldo van Eyck, playground, Zaanhof, Amsterdam, 1948

18   Richard Paul Lohse, *Fifteen systematic sequences of colors*, 1956

freedom,[25] as well as simultaneously engaging the individual and mass society; "The crowd contains the possibility of the individual."[26] As Friedrich Heckmanns has noted, rather than representing, Lohse's works were experienced concretely, "not as rationally conceived projection of human behavior, but as means of sensory communication."[27] [17-18]

Lohse's ideas regarding the reciprocal relationship between the arts and society were among the subjects of the "countless discussions" Van Eyck recalled having with Lohse during the forty-six years they knew each other. Articulating their shared commitment to constructive and critical artistic practice, Lohse stated: "In no other forms of art do the means and the methods of a global technological strategy find their legitimate expression in the way they do in constructive, logical, systematic configurations that are a subliminal and critical echo to the structure of civilization… Constructive art exists both rooted in the form of contemporary society and contrary to it. An aesthetic creation is the result of sublimating and criticizing reality."[28] Van Eyck and Lohse shared a deep commitment to a democratic, liberative social structure—yet they also shared the criticisms that contemporary society rarely achieved this ideal; that contemporary life often served to distract people from the search for a better world; and that contemporary society no longer provided a clear pattern for daily life. As Van Eyck asked, "If society has no form, how can architects build the counterform?"[29]

In an interview late in life, Lohse recalls; "Aldo and I were always talking about the possible relations between art and architecture, about the question whether both involved analogous structures, and to what extent these structures can be identical. It is not possible to transpose Lohse or Mondrian directly into architecture. There is always the danger that this sort of transposition is limited to only the outer, visible picture. Nevertheless, the methods and systems a painter develops may contain possibilities for structural transference. This was the case in, among other places, Holland in the 1920s, when there was a correspondence between the plastic principles of DeStijl painting and tendencies in architecture. There was an identity in the expression of painting and architecture, without Rietveld or Duiker having directly followed Mondrian… Van Eyck always pursued a logical dynamic. In the same way this dynamic arises out of a cohesion of verticality and diagonality in my work. Diagonality was the determining force for Cézanne too, though he did not depict is as such. One can also recognize this sort of dynamic in the work of Van Eyck."[30] [19-20]

Lohse and Van Eyck shared the belief that spatial and formal structure in both art and architecture had the capacity to change the world for the better. As Lohse said in 1982; "Every form of cultural conception is a

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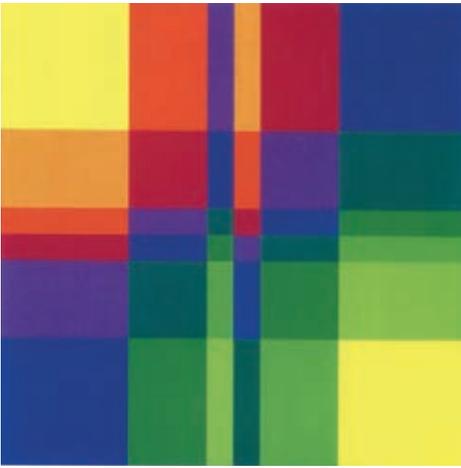
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Richard Paul Lohse, "Art in the age of technology," (80th birthday address at Kunsthaus Zurich, 1982), *Richard Paul Lohse: 1902-1988*, op. cit., 75-77.

32

Van Eyck, "The radiant and the grim," *Documenta* X, 1997; in Ligtelijn and Strauven, op. cit., 648-49.

33

Kenneth Frampton, "Team 10, Plus 20: The Vicissitudes of Ideology" (1975), *Labor, Work and Architecture: Collected Essays on Architecture and Design* (New York: Phaidon, 2002), 144.

19   Aldo van Eyck, play terrace, Amsterdam Orphanage, 1955-60

20   Richard Paul Lohse, *Six systematic color series with horizontal and vertical concentration*, 1955-69

function of its social basis, each aesthetic form belongs to a conception of life," and that even though progressive thought "is confronted today with irrationalism and individualism in art and architecture claiming to be simultaneously in opposition to and an expression of the spirit of our times… constructive art is destined in its philosophy and working methods to further our quest of changing society and the environment."[31] In one of Van Eyck's last writings, titled "The radiant and the grim," he spoke of the avant-garde in the arts of the first half of the 20th century as "the radiant," with "the grim" being the failure of mainstream modernism of the second half of the 20th century, and the "post-modernist" and "deconstructivist" movements that came in its wake, to come "to terms with vast multiplicity and the menace of uniformity, monotony, and oversize" and to engage both the spiritual legacy of early modernism and the "gathering human experience" of history.[32] Due to his anthropologically-grounded attacks on both "the alienating abstraction of modern architecture"[33] and the superficial cynicism of the movements that followed it, as well as his insistence on conceiving architecture as "built homecoming"—with all the ethical responsibilities that implied—Van Eyck may be said to have acted as the conscience of the international architectural profession during the second half of the 20th century. The constructive relationship between Lohse and Van Eyck, which lasted some forty-six years, is exemplary of the other tradition of modern art and architecture, where ordering principles, perceptual insights, and spatial conceptions are shared by those believing in art and architecture's capacity both to enrich the experiences of everyday life and to make the world a better place.

Pictorial Abstractions
/
Visualizing Space in the Eras of Modernism and Information

Uršula Berlot Pompe

The appropriation and individual interpretation of scientific discoveries have led to new visual definitions of space, especially during the periods of scientific paradigm shifts.

1

The problem of the relation between art and science was the focus of research by Martin Kemp, Linda Dalrymple Henderson, Stephen Wilson, Tony Robbins etc.

Representations of space in art history reflected philosophical as well as scientific tendencies of any given historical period. Artists invented models that corresponded to their own understanding of the world, and though they mostly did it intuitively, it was sometimes done consciously by applying their knowledge of the physical and mathematical laws governing the empirical world. A significant corpus of contemporary research in the history and theory of art focuses on the problem of scientific ideas influencing both representations of space and strategies of constructing space in the works of visual arts.[1] The appropriation and individual interpretation of scientific discoveries have led to new visual definitions of space, especially during the periods of scientific paradigm shifts. For example, the rise of abstract art and of the various modes of avant-garde transformations of space has been closely connected to the introduction of the theory of relativity, as well as to the new concept of the time-space continuum which substituted Euclidean geometry and Newton's substantivalistic ontology of space. In the post-war works of abstract expressionism, especially in their decentralized gravity-defying space defined as a field, one can see traces of quantum mechanics and its idea of reality as an invisible elastic matrix, i.e. an energy field. On the other hand, the basis for the experimentation with light and space which appeared in the works of California based artists in the 1960s (Light and Space Art) was undoubtedly their understanding of the phenomenology of human perception and particularly the conception of space as materialized light, which implied a specific tactile dimension of light. In their work, they explicitly drew on the findings of experimental psychology and phenomenology in two ways, by developing the idea of the subjective space of perception and by structuring the 'position of the viewer' in the open form of the artwork. At the same time they showed a particular interest in technological aspects of their work by introducing new materials and industrial processes. At present, with the growth of information technologies, abstract painting conforms to the development of digital media, fractal geometry, and nonlinear dynamics with the theory of complexity and chaos theory.

     Contemporary abstract art creates its images of space also under the influence of a technologically expanded reality using various

imaginaries of reality fed by medicine, biology, physics and optics. Contemporary art also evokes images of space as a fluid, malleable or curved entity that is essentially arranged by the principle of coincidence. By understanding the changes in scientific models of space, we can begin to understand the basic difference between modernist and postmodern models of abstract painting. The former are rooted in reductionist strategies of simplifying space by focusing on what seems to be elementary and universal, while the latter—with their geometric and formal clarity—stem from an awareness of global complexity, and the interdependent and dynamic relations of reality.

IMAGELESS SPACE AND MULTIDIMENSIONALITY

The beginning of the 20th century bore witness to a radical change in the understanding of space in physical science. In 1905, Albert Einstein formulated his theory of special relativity. Einstein's idea of space-time subverted the traditional representation of space based on Isaac Newton's theories defining space as an absolute and a passive container of matter. Einstein's conception of the constant speed of light and of the relative nature of time and space also subverted the traditional belief in the existence of objective reality, independent of human consciousness, as his theory postulates that reality depends on the perception of the observer. The theory of relativity presupposes a "plasticity" of the world in which shapes change their color and size according to the position from which they are observed. Only the speed of light is invariable in such a system, i.e., independent of the observer's speed and direction.

The theory of special relativity alters the relations between the four basic concepts of Newtonian physics, i.e., mass, energy, space and time, reformulating them into two binary entities, namely the entity of energy-mass and the distorted continuum of time-space. They are connected by the energy of light. In 1907, Einstein suggested the reciprocal agency of both entities, but did not manage to offer any mathematical proof of their interconnection until 1915 when he proposed his theory of general relativity. Using the Riemann curvature tensor, he defined the speed of light as an element that binds these two entities. Einstein's theories enabled further research on space, e.g., the understanding of the principle of black holes, the illusory nature of gravity and especially the specific curvature of time-space. The concepts of the theory of relativity and its models of reality (according to which reality is defined by the curvature of time-space) extend far beyond any common experience and understanding of reality, and can be precisely defined only in the language of mathematical symbols.

Modernist painters focused on the ideas and structures of space, and by investigating new spatial relations they created alternatives to existing reality.

For descriptions of the geometric nature of space, which was defined by masses in motion, Euclidean tools had become inadequate.

When the scientific community appealed to Einstein to provide a visual metaphor or at least a verbal explanation of his findings that would be comprehensible to common people, he responded that he could offer neither. (Baldwin 1962, 32) The failure of language to explain the new physical paradigm of reality coincided with the appearance of the first abstract, non-representational forms of art. The painters of the early avant-garde art strived to express visual equivalents to the intelligible ideas of nature, space and time; some of them tried to come up with a visual representation of abstract ideas of infinity, emptiness and non-objective reality (K. Malevich, El Lissitzky), others created geometric models in pictorial space (Mondrian), the Cubists and Futurists designed structures in space that simultaneously expressed the temporal dimension, while Gabo, Pevsner and Rodchenko constructed dematerialized spatial volumes where mass reflected forms of energy states.

The discovery of non-Euclidean geometry and the multidimensionality of space, i.e. its fourth dimension, was based on the insight that Euclidean axiomatisation, with its rational derivatives, was nothing more than an abstract premise which did not refer to reality. Einstein's continuum of time-space, which depends on the position of the observer, cannot be adequately described by Euclidean perpendicular coordinate systems. The notion of curved space abolished the Renaissance linear perspective based on straight lines, and consequently also abolished the manner in which objects had been depicted, since the theory of relativity subjected shape to constant deformations depending on the position of observation.

The non-Euclidean concept of the constantly shifting appearance of an object moving within a curved time-space stimulated the imagination of modern artists, inspiring them to form alternative, imaginary conceptions of 'reality' (Henderson 1983). It was precisely this 'new ability to make imaginative assumptions about other realities that ended the hegemony of Euclidean geometry and Renaissance perspective in painting.' (Dunning 1991, 152) Modernist painters focused on the ideas and structures of space, and by investigating new spatial relations they created alternatives to existing reality. They drew upon the notion of time-dependent space (the Cubist simultaneity of gaze), creating illusions of movement (Futurism) or using kinetic elements in three-dimensional works (Constructivism); they also suggested ideas of a moving space-time infinity (Suprematism).

The thought of intelligible, multidimensional and non-objective moving space inspired Suprematist compositions by Kasimir Malevich.

2

Robert Fludd (1574 –1637) lived in the age of the Renaissance, he was Paracelsus' student, a scientist, mathematician, physician, astrologist, but also a connoisseur of the occult and esoteric practices. His most widely known work is the 'Utriusque Cosmi maioris salicet et minoris metaphysica, physica atque technica historia (The Metaphysical, Physical, and Technical History of the Two Worlds, the Major as well as the Minor (1617–1619)), a summary of his philosophy of nature and cosmology which was evidently influenced by mystical practices.

In a series of flat, but dynamic abstract compositions, Malevich attempted to save art from the "tyranny of objects" in order to enter a reality of "sensing rhythmic vibrations and movements". By veering away from objective representation, Malevich left behind the idea of the relations between objects as the cornerstone of spatial dimensions. "When objects got substituted by non-objective forms, space surrounding them lost its finiteness, as it could no longer be subjected to measuring. Nonetheless, this space—as the surrounding of non-objects—kept its identity like the sea which surrounds an island and clearly differs from it. The thus defined space can extend either in front of the pictorial plane or lies behind it. Space is therefore infinite, but maintains the distinction between the figure and the background." (Ženko 2000, 103)

In Malevich's 'supremats' series (1915 – 1925), the figure of a black square in the painting 'The Black Square on White Background' (1915) is probably the most famous one. Due to its formal, geometric reductionism and its allusion to the iconography of absence, the painting is often understood as emblematic in the context of avant-garde modernism. The absorbing power of black color in the figure of a square renders the absence of light through suspension of the gaze, thus suggesting the interpretation of space as negative space, i.e. emptiness. Gerard Wajcman reads Malevich's Square as a result of his attempt to approach the world without using images: as an attempt "to aim at the world, at the real, without putting a surface in front of it, a screen of representation in between /…/ The Square aims at a particular type of object, it actually aims at a totally new object which I call Absence." The square may be compared to an optical instrument that makes absence visible; in the same way as all 20th-century landmark works, the Square attempts to "inscribe lack into the absolute core of the work, to reveal an emptiness, an absence, to reveal a hole". (Wajcman, 147 -148)

Eugene Thatcher interprets the black color of Malevich's Square as an icon of the invisible and the infinite, putting it in close connection with alchemical texts and illustrations from the past. He draws our attention to the richly illustrated books of the occult philosopher Robert Fludd;[2] in Fludd's work we can find a diagram of eternity in the shape of a black square, with a side annotation *'Et sic in infinitum…'* (and so on infinitely). Commenting on his picture, Fludd explained that the square represented a speculation of a spatial dimension as extant prior to the birth of Cosmos, depicting 'pure voidness, pure nothing', a kind of 'pre-universe', a 'non-space'. According to Thatcher, Malevich's image of a black square is created at a point when the individual becomes aware of their limited ability of perception, as well as their limited ability of representation. In this context, it is interesting

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3

Proun is the title given by Lissitzky to a series of works created in the years after 1919 (mostly in the early 1920s). Proun consists of objects, lithographies, and a later spatial intervention which includes paintings and three-dimensional objects; the latter is often defined as a proto-installation (see e.g. Claire Bishop or Brian O'Doherty). Combining two-dimensional and three-dimensional geometric bodies, Lissitzky merged painting and architecure to create a new sense of space.

4

See his article Proun, published in 1922 in the 6th number of the magazine De Stijl.

1   Robert Fludd, an illustration of a black square
     with the annotation *'Et sic in infinitum…'* from
     the work Utriusque cosmi maioris scilicet et
     minoris metaphysica, … (1617)

2   Kasimir Malevich, The Black Square on White
     Background, 1915

"that only a self-negating form of representation would be able to suggest the nothingness prior to all existence, an un-creation prior to all creation." (Thatcher, 2015) From the recipient's point of view, such an understanding of the Black Square requires a substantial cognitive and perceptual investment, since in the form of the square the viewer is supposed to see a "shapeless shape", and in the black color they should perceive neither fullness nor voidness. (Ibid.) [1-2]

El Lissitzky addressed the question of representing the Suprematist multidimensional continuum in his series Proun.[3] Proun is an acronym that supposedly stands for the Russian '*proekt utverzhdenya novogo*', 'a project for the affirmation of the new', and can thus be interpreted as 'a project of progress'. As a combination of geometric bodies and flat surfaces, it merges architecture and painting, which creates a new sense of space. In his own essay (in 1922), Lissitzky defined Proun as a turn from painting to architecture:[4] indeed, Proun surpasses the limits and the static nature of painting with its progressive spatial and temporal conception that includes movement. The creative process becomes an art of mastering space, a process of "transforming emptiness into space. The observer is thus included in the process, as he observes the given forms from various points of view and is consequently overtaken by a sense of movement. This is why Lissitzky decided to abandon the two-dimensional space in favour of a truly physical space created with Prouns." (Vrečko 2009, 80) [3] Paintings in Lissitzky's Proun seem fluid, non-material; the presented geometric shapes, circles and parallelograms give appearance of rectangles sloping in space. It seems as if shapes were floating in a vague space that is itself defined by the circling spatial axes. The use of axonometric projection makes the diminishing and the deepening of perspective impossible, and the position of forms in space is ambivalent. Size and shape themselves become relative due to transparent and interpenetrating planes that do not allow for the distinction between the foreground and the background plane.

In his essays as well as his praxis, Lissitzky explored the idea of 'pangeometry', a kind of an alternative system of spatial relations that substituted the notion of linear perspective. Distinguishing between the planimetric space based on perspective and the irrational, i.e., imaginary (Suprematist) space, he articulated a dynamic expansive space whose main constituent is precisely the notion of movement. As Vrečko puts it: "It is a dynamic space which includes an element of time and thus adds a fourth dimension. Lissitzky differentiates between the three-dimensional physical space and the multidimensional mathematical space." (Vrečko 2009, 81)

3

5

Proun Room/ Prounenraum was
originally created for the Grosse Berliner
Kunstausstellung (1923) and was later
reconstructed in the Hannover Museum (Room
of the Abstracts/ Prouns, Hannover 1927/28).
The reconstruction was commissioned by the
manager of the museum who saw the earlier
installation in Dresden (1926). Proun Room
was also reconstructed after the 2nd World
War, in the Van Abbemuseum in Eindhoven
(1965). The installation consisted of a space
in the form of a cube into which light entered
through a semitransparent window on the
ceiling. The walls of the cube were covered
with two- and three-dimensional geometric
elements: horizontal and vertical rectangles,
sticks crossing each other, a small sphere etc.,
which occupied the whole surface of the walls.
A mirror was included to reflect and double
the view. Two black lines were marked on the
transparent part of the ceiling in order to unify
the space into a whole.

6

Due to the incorporation of geometric shapes
into spatial relations and due to a variety of
perspectives used by Lissitzky, one can see
the Prouns as a contrast to the Suprematist
use of two-dimensionality and the Suprematist
idea of simplifying shapes. The Proun projects
seem to be a research into the Suprematist
visual language, yet with an emphasized
spatiality. In Suprematism, one cannot find
circling spatial axes, the use of diagonals or
multi-perspectivity. Suprematism was at the
time limited almost exclusively to flatness,
i.e. to two-dimensional shapes. With his taste
for architecture and fresh three-dimensional
concepts, El Lissitzky wanted to expand
Suprematism beyond the edges of the plane.
(Bishop 2005)

3   El Lissitzky, Proun G7, 1923

The construction of Proun Room shows the transition of the ideas concerning Proun into the actual three-dimensional space.[5] A spatial installation required the viewer to move around, since there was no intended ideal position of observation. In designing the exhibition space, Lissitzky exploited the basic elements of architecture: space, mass, color, and rhythm; compared to Malevich's Suprematist ideas, all these elements were redeveloped.[6] With the installation of Proun Room, Lissitzky completed his turn from Suprematism to Constructivism. The whole of his Proun projects thus surpasses the pictorial medium; due to Lissitzky's use of new spatial and temporal representations, the Prouns became a "station where painting changed to architecture". (Lissitzky, in Vrečko 2009, 78). Lissitzky was inspired by the idea of combining art and science (of contributing to scientific research by means of art), and by Einstein's theory of relativity, according to which measures of space and time depend on the movement of the given system. Correspondingly, Lissitzky used paintings as a building material for his constructions, beside concrete elements installed in space, and the resulting moving, dynamic, open structure implied spatial and temporal multidimensionality. The abstract art of the early historic avant-garde created new geometric and spatial compositions, consciously or subconsciously reflecting Einstein's idea that void space is not emptiness, but rather shows all of the characteristics of something real; yet these characteristics could only be defined by a new, non-Euclidean geometry. The idea of associating space with geometry and the concept of gravitational attraction as a result of the time-space interaction echoed in a series of modernist paintings treating space as a geometry invested with qualities of a tensor field.

The pioneers of abstract painting in the first decades of the 20th century came from various philosophical and theoretical backgrounds, yet they all shared a reductionist paradigm. Reductionism expressed itself either in spatial abstractions that strove to render the simplified aspects of the phenomenal world using basic geometric structures, or in the desire to create visual correspondences with intelligible principles, but in both cases it acted as the basis of modernist abstraction. To give but a few examples: Kandinsky spoke of a microscopic analysis of the basic elements of painting, such as shape, point, line and plane; Mondrian's ascetic language consisted merely of lines and three basic colors; František Kupka and Robert Delaunay used exclusively dynamic circular compositions and spectral colors. Methods of reduction, transposition of rational concepts into art, and the prevalence of geometric shapes in fine arts corresponded to the era's dominant scientific paradigm as incorporated into the various fields of science. The splitting

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See Paul Vitz and Arnold Glimcher. 1984. Modern Art and Modern Science: The Parallel Analysis of Vision. New York: Praeger Publishers.

of inorganic nature into molecules, atoms and subatomic particles, the discovery of cells and chromosomes as the basic particles of the body, and defining indivisible sensory elements of perception in the then experimental psychology all determined creative methods employed by the artists. It was especially the latter that influenced some of the early avant-garde artists, as it used pictorial diagrams including geometric shapes and primary colors to explain the psychology of visual perception, i.e. the laws of perceiving colors, shapes, space and movement.[7]

THE NON-MATERIALITY OF THE FIELD

The peaks of non-representational post-war painting can be seen in American abstract expressionism with its various currents, namely Color Field painting, Post-painterly abstraction and minimalism. Within the dynamics of political and social changes, science put forward new perspectives and models of reality, inspired by the already decade-long unifying of the theory of relativity and quantum mechanics. The idea of the field as an energy foundation of reality determining the movement of particles reoriented the focus of the social imagination away from material reality (i.e. particles) to the more fundamental non-material, energy dimension. The model of reality in which matter is understood as merely a 'perturbation' in the perfect state of the field draws attention away from objects or the material towards the underlying non-material energy matrix that determines the appearance and the arrangement of the phenomenal. Time-space and energy-mass are subjected to the field of light or energy oscillations defining the appearance of the material already in Einstein's theory. The field as a non-material energy sphere cannot be an object of qualitative measurement, but is rather an invisible intelligible 'imageless' reality, a tensor that reveals itself only through the effects of energy on matter.

Abstract expressionists, who focused on 'images of the invisible' or created 'imageless art', reflected the idea of the intelligible dimension of reality that determines visual phenomena. The conception of space which is not defined by object relations, but which manifests instead as a field of energy oscillations, led painting away from depicting objects and into the search for new artistic—formal, conceptual and aesthetic—strategies for capturing and registering the invisible ordering spatial matrix.

Jackson Pollock subjects pictorial procedures to the invisible gravity force and leaves the shaping of the form to the 'order' of coincidence. His non-object compositions created with the dripping technique (drip paintings) suggest the invisible tension which permeates the painter's body in motion and which structures the abstract pictorial image. The

dripping technique puts forward the application of colors in the wet on wet manner, lines of color merge creating "cellular structures, labyrinths, webbings, nets, and membranes, thus losing their autonomous separateness. This complex use of line strengthened the shallowness of the sensation and created a unified single image." (Dunning 1991, 180) Lines do not appear like outlines of objects or edges of shapes, they seem to have a mass of their own and are creating an interwoven mesh as a visualization of the invisible force field. The color structures of Pollock's compositions take shape as the trace of the painter's movement above the horizontally lying canvas, presenting an abstract, non-material imprint of his corporality and simultaneously revealing the effects of the energy field permeating matter. The paintings are decentered, spatial hierarchies between the foreground and the background, below and above they are suspended, the grids of lines convey the energies and tensions of the field limitlessly expanding in space. According to his painter colleague Robert Morris (Anti-form, 1968), Pollock is one of the few painters who considered the work's autonomous creation process and the movement of material in the work's final form, by which he showed an understanding of the truly fluid nature of painting.

Metaphors from physics are also evoked by the abstract compositions of Barnett Newman; the large color surfaces act as a tensor field uncontrollably expanding outside the confines of the painting's material medium. It is broken off by vertical lines, the so called 'zips', which simultaneously demarcate and link color fields: "Zip prevents routine perception as it cannot be spatially located, due to the constant exchange with the color tissue: both elements support each other and work simultaneously and inseparably, thus the zip is read as a positive and a negative, surface and depth, a cut and a seam, where the effect of the sublime, which the painter aims at, is implemented with invisible, but intuitively felt pulsation, expansion and condensation, in the uncontrollability of the pictorial space." (Gnamuš 2008: 285) It seems that Newman's paintings depict the expansibility of space as the light waves of energetically charged quantum particles; they suggest a sense of an elastic field connecting pictorial space with the immediate space of the viewer. Newman claims that he has come to understand the value of zip gradually, through emptying the space instead of filling it: "The streak was always going through an atmosphere. I kept trying to create a world around it ... Suddenly I realized ... that I had been emptying space instead of filling it and that now my line made the whole area come to life." (Auping, 2007: 146). Newman's 'spatial emptying' suggests the imagination of non-space and the original emptiness the moment before the creation of time and space, energy and matter. His works are new renditions of the sublime, which

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See: Newman Barnett, The Sublime is
Now (1948), where Newman claimed that
European art was not capable of reaching
the sublime, as it had remained 'inside the
reality of sensation (the objective world
rather distorted or pure) /…/ and was unable
to move away from /…/ an empty world of
geometric formalism - a pure rhetoric of
abstract mathematical relationships, became
enmeshed in a struggle over the nature of
beauty.' New American art, on the other hand,
was free of the weight of European culture,
and was the only one which could create
sublime art at that moment, as American
artists used their 'own feelings' in their work…'
(Excerpt from 'The Ideas of Art, Six Opinions
on What is Sublime in Art?, *Tiger's Eye* (New
York), No.6 (15 December 1948), pp. 52-53.).

now does not refer to nature but to the heroic sublimity of the moment, a manifestation of the consciousness of pure presence and the present.[8]

The dematerialized 'color field' of Mark Rothko offers a sense of the sublime and the metaphysical. Although Rothko was aware of the metaphysical and spiritual aspects of his atmospheric color abstractions, he emphasized his primary interest in creation of space. He was conscious of the fact that art does not merely reflect the perception and conception of spatial relations, but is also, above all, creating space. He distinguished between painting that enacts tactile space and one based on images of a space of illusory plasticity, and just as many contemporary abstract painters, he tried to connect illusionist pictorial space with the actual space of the viewer. His paintings composed of softly intermingling color spatial forms evoke associations of the transcendental nature of space, as found in the tradition of the sublime—the landscape-related sublime—belonging to romantic painting (Caspar David Friedrich, Frederic Church, William Turner), but Rothko creates the sense of the exalted using abstract means and by forming dematerialized and immeasurable spatial dimensions, which absorb the self-consciousness of the perceiver and bring about a sense of fusion with the universal and the absolute.

In the analysis of pictorial space, Rothko distinguishes between representations of space and things which suggest the sense of touch on the one hand and those which are perceived solely though the eyes on the other: "Tactile space, or, for the sake of simplicity, let us call it air, which exists between objects or shapes in the picture, is painted so that it gives the sensation of a solid. That is, air in a tactile painting is represented as an actual substance rather than as an emptiness." (Rothko, Space (1947) in Auping 2007, 21) He illustrates tactile space with an image of the volume of jelly objects are submerged into?, presenting the idea that the otherwise invisible or barely perceptible volume of air gets some 'weight and presence'. Rothko warns about neglecting this 'airy' dimension in the case of illusory space that focuses only on the illusion of appearance and creates a feeling of things moving within emptiness. The means employed by illusionist painters in the past to move past the conception of space as an empty container of things used to be representations of clouds, smoke and haze (in landscape painting) or the use of atmospheric perspective.

Rothko subjected his own pictorial procedures to the idea of representing spatial tactility. He strove towards the abstract, more accomplished ethereal image and considering possibilities of remodeling and expanding the tactile pictorial space into the immediate physical space, in which both the painting and the observer are placed. (Auping 2007, 141) In 1949 he created his first 'color field', a pictorial space based on the virtual exchange between hazy rectangular shapes or color 'clouds',

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4   Mark Rothko, No. 61 (Rust and Blue), 1953

which are suspended in the field of another hue. The spatial relation between the 'figure' and the background as an undefined spatial field became ambivalent. Rothko created atmospheres that evoke a sense of the emanation of gas. He thus suggested a dissolution of the material pictorial medium and at the same time illusionistically connected the virtual pictorial space with the perceptual, physical space of the viewer.

Rothko did not consider himself a colorist, as he was not primarily interested in the intrinsic value of color, but in creating various kinds of spaces. His paintings were often based on darker and muted color values, chromatic dimness is particularly characteristic of his late works, whose culmination was the cycle of fourteen murals created for a chapel in Houston, Texas, which was later dubbed The Rothko Chapel. The spatial arrangement of these paintings indicates an extraordinary harmoniza-tion of painting, architecture and space, while the linking element of this constellation is light. Rothko, who normally paid attention to the contrast between light and dark as well as the perceptual conditions of experiencing paintings that depended on ambient light in a space (he recommended subdued and diffuse lighting of the exhibition space), in-sisted on the presence of natural light in the case of the Chapel. Daylight is supposed to dynamize space and sensitize the viewer's perception, as it is perpetually shifting due to weather changes and temporal cycles of day and night; the space is supposed to be 'breathing' with light and 'living' in the heightened perceptual states of the viewer's self-consciousness. [4]

The works of post-painting abstraction, deconstruction, hard-edge painting and minimalism in the nineteen-sixties represent an extreme form of reductive procedures of abstract painting; these works deal with exclusively formal questions both in theory and practice. The famous tautology by Frank Stella "What you see is what you see" expresses the understanding of painting corresponding to an extremely materialist, objectivized approach; painting is identified with the pictorial medium and does not refer to anything external. The extreme form of non-refer-ential art appears as a 'pure signifier', which does not open up transcen-dent spatiality, but evokes its own immanence, the presence of 'things among things'. Formal reduction corresponds to reduction in meaning; this is the painting of painting, which does not express social, political or philosophical meanings, but rather addresses the propositions or the deconstruction of its own practice. These are rational and controlled pictorial procedures, where the blurredness of the visible strokes of the hand abolishes the presence of the 'subject', attention is drawn to the minimal differences among hues, and the effects of simultaneous color contrasts, suggested by the sharply delineated color shapes; attention is drawn to a painting covered in colors, where—in the ideal form—the

9

See Schlain, Leonard. 1991. Pp. 119 - 137.

distinction between the medium and the image is negated. Works that are exemplary in this aspect are the shaped canvases of Ellsworth Kelly or Frank Stella. With regard to minimalist reduction and 'primary or analytical painting', we need to mention the geometrically conceived works by painters such as Brice Marden, Robert Mangold, Robert Ryman, Jo Baer, Agnes Martin or works of the art group BMPT (Buren, Mosset, Parmentie and Torroni). The group Support-Surface (Devade, Cane, Pincemin, Viallat, Bioules) undertook the structuralist deconstruction of painting to the medium – canvas, color and the frame, where the painting's status is reduced to the signifier of the painters' practice.

TACTILITY OF LIGHT AND PHENOMENOLOGY OF PERCEPTION

Reality as described by Einstein is founded on the premise of the constant value of the speed of light and the relativity of space, time and mass. The speed of light is constant for all observers regardless of the velocity and direction of their movement. At the same time Einstein's theory postulates that the deformations in the appearance of objects in space and time, which are always the same, take place during movement at the speed of light.[9] The field of light determines the structure of space and time, actually it represents their origin, it is independent of observers and as such it has a special place in the theory of relativity. Light, with its constant speed, functions as a connective glue between the binary categories of space-time and mass-energy. The famous energy equation ($E = mc^2$) treats the relationship between mass, energy and the constant speed of light in a vacuum, explaining how mass turns to energy at the constant speed of light and vice versa. Energy contained in a sheaf of light rays can be converted into weight – we can calculate the weight of light.

Such insights into the reality of the interconnection of light and matter are reflected in many procedures concerning light in modern painting, directed at the shifting color effects in dependence on light conditions (impressionism) or the dematerialization of form (luminism, orphism (Delaunay, Kupka, Feininger), etc.). The 20th century witnessed the blossoming of the art of light in kinetic or optic art, in the light art installations Art & Space, which made light autonomous as a concrete, real artistic medium, and veered away from the traditional pictorial 'representation' of light. Light became the central medium of expression in phenomenologically oriented artworks investigating the potential, and role of (optic and bodily), perception in the formation of a work of art. Despite the fact that art interventions bound to concrete space (location-specific installations) represent the

10 A group of artists, whom we join under the name of the movement Light & Space Art, worked, though loosely connected, in the nineteen-sixties and seventies in California. In terms of ideas, their work presents a phenomenological alternative to minimalism, whose centre was in New York. Beside the pronounced focus on perception and space in relation to light effects, the Light & Space artists differ from minimalism by conceiving space in more non-material, discreet and occasionally distinctly conceptual terms. This distinction could be summarized in the difference between 'art as an object' and 'art as an experience', or, to use the words of Craig Kauffman – the first are interested in perception, while the second are more interested in material procedures. (See: Berlot Pompe, Uršula. Space and light in art installations of 20th century. / Prostor in svetloba v umetniških instalacijah 20. stoletja. Praznine 08/2015. Ljubljana: Umetniško izobraževalno društvo Praznine, 2015.)

culmination of light art, I will now limit myself to examples that expanded the concept of painting through engaging light technology and light-sensitive materials as practiced by the Californian movement L.A. Glass & Plastic and Light & Space in the nineteen-sixties.[10]

Artists who were, due to their use of glass, plastic and other (then) new industrial materials, such as fiberglass, polyester or epoxy resin, acrylic plate etc., united under the designation L.A. Glass And Plastic or also L.A. Look, Fetish Finish and L.A. Cool School, created works in which the boundaries between painting, sculpture and design became blurred. Their experiments with new materials and light technologies were not motivated by the formalist questioning of the medium, but rather by sophisticated engagements with perception, light, color and space. Glass and plastic enabled a focus on non-material optic and tactile effects of works, which induced subtler perceptual states by including light shifts, translucence, illusionist effects of depth, shadows and reflections. Nonetheless, the emphasis was not on the material, but the idea that material was only a means for achieving the goal, which was transcending the material.

Artists such as Ron Cooper, Craig Kauffman, Ed Moses, Helen Pashgian, Peter Alexander, Larry Bell, Robert Irwin, DeWain Valentine, Doug Wheeler and Larry Bell, created sculptural, pictorial and spatial works which were, due to specific materiality, sensitive to the environment and light in space. Due to effects of dematerialization, generated by smooth and light-responsive surfaces, these works stressed the reciprocity between light, matter and shape, and established new forms of phenomenological relations with the viewer.

The artistic appropriation of design procedures from the aeronautical and automobile industry, and the introduction of light technologies and new techniques of processing materials (vacuum treatment, dyeing and sterile chambers, mechanical cuts, bending etc.) led to connecting art with science and technology. Artists participated in inter-institutional projects, art residences and research platforms that connected artists with scientists and engineers. We need to point out that creative exchanges between art and industry were not directed towards examining pragmatic functional solutions or toying with technology *per se*, but rather involved subtle explorations of the range of artistic experience, established via the relation between object and perceiver.

Paintings created by Craig Kauffman, Helen Pashgian, Peter Alexander or De Wain Valentine, may elicit associations to nature due to special atmospheric effects, though the resemblance with the materiality of water, air, clouds, vapors, the vastness of the sky or the remoteness of the ocean horizon was mediated in the abstract, purified form in an

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5   Craig Kauffman, Untitled, 1968

entirely artificial medium. One of the first artists to use plastic and its industrial treatment was Craig Kauffman, who tested the boundaries of the pictorial after 1963 with a series of paintings presenting abstract, biomechanical forms on Plexiglas. He became famous especially for his hybrid painting-objects in bubbly shapes, which he produced with the vacuum treatment of plastic and the layered sprinkling of the deposit. When explaining the motive for creating these works, he said that he was looking to create a sense of 'a bubble sculpture as "art you can ride in" and as a "hover form which moves around [the) room and bumps into walls." (Kauffman in Clark 2011, 57) The soaring and ethereal 'capsules' of various pastel tones were attached horizontally to the wall; due to optical effects of shining through, reflecting color and glimmering, effects which were changing according to the observer's position, these works produced a floating and immaterial impression. The artist experimented with materials and light with the intention of incorporating the effects of ambiental phenomena into the perception of form, while the viewer's experience became the work's basic element. [5]

The light-responsive works of Peter Alexander are distinctly associative, as they resemble the depth of water, the softness of clouds, haze and similar ethereal atmospheric phenomena, due to transparency and color gradations. Formally educated as an architect, he transferred his pronounced feeling for space and ambience into sculptures and paintings he made in the 60s and 70s by casting artificial resins. (What followed was a period of returning to more traditional painting techniques and, a decade ago, to the use of acrylic materials.) His first works were abstract landscapes made of plaster set in Plexiglas boxes. In 1971, he commented: "The idea was that you would project yourself into these landscapes by looking into the box. ... It never worked in plaster so the extension of that was to try to work it out in some other medium." (Alexander in Clark 2011, 59-61). The works he created by molding polyester resin (1965 - 72) produced a sense of minimalist reduction and formal homogeneity. The central event is created by light refracting and passing through a translucent material; it seems that these works materialize light or some other 'vaporous' substance; the object manifests as an optic, changeable and mutable natural phenomenon.

Simultaneously ethereal and sensual, the works of Peter Alexander function as a metaphor for the momentary suspension in time, or images of 'a wave caught in a moment'. The later works made of polyurethane resin are mood affecting and associative as spilt fields of color; it seems that they represent a state when the water reaches the shore and disappears in the sand. They suggest a sense of soft transition of the substance of water into the air, and,

6a

6b

11

In Stuck Red and Stuck Blue, rectangular apertures are cut out of additional walls, which are covering the room's real walls. Fluorescent colour light bulbs are hidden in the slits behind these temporary walls. Due to the intense colour glow of rectangular shapes in an otherwise dimmed space, negative spaces of apertures seem full or material, while the walls seem to dematerialize. Emptiness and fullness are optically subverted; the colour gains a sense of weight, and the painting represents the materialization of light in a tactile manner.

12

Doug Wheeler was originally a painter who, after starting with the processes of formal reduction of abstract (combining biomorphic and mechanical) geometric shapes in more or less monochrome imagery (1962-63), and continuing with a series of 'chip' paintings (1964), gradually arrived at introducing real light elements into painting (fabricated pieces, 1965-68), where canvas was replaced with Plexiglas and neon light bulbs placed in the interior. What came next were 'Light encasements' (1969), which combined vacuum processed elements of Plexiglas and light technology to create softly rounded linear rectangular light shapes.

6   Peter Alexander, Royal Blue Drip, 2011

when exhibited in a gallery space, tend towards transcending the physical medium and merging with the surrounding space. [6]

    Although James Turrell and Douglas Wheeler were known especially for their light and space installations, I would like to—in the context of analyzing transformations of pictorial space—highlight two types of their work which offer new pictorial spatiality. Turrell's first light works (Light Projections (Afrum), 1966-67; Stuck Red and Stuck Blue, 1970) were produced, as the painter claims, in reference to painting: "What happened then is that I got more interested in the plumbing of hypothetical space and the idea of the presence or quality of light. Afrum ... was more of a painting in the sense that you have painting on a two-dimensional surface that alludes to perhaps three dimensions or unsolvable three-dimensional things. This work was about taking three-dimensional space and making the same kind of allusions to the space beyond that-you don't need to call it fourth dimension but just one that does not solve up in three. So in that way, my work does have a lot more to do with painting than it does with sculptural or architectural senses, because the first thing that is important is that the light is used as material, and that it has a physical presence as such, and that space is solid and filled and never empty.... Let's call painting our concept of three-dimensional space ... then from that, create paintings that don't solve up in that space-rather they are that space. They become like little 'holes in reality.'" (Turrell in Butterfield 1993, 72). Regardless of dealing with the illusion of the three-dimensional volume brought about by intense light projection in a suitably deformed geometric shape (Afrum), or with shallow space constructions (Stuck Red and Stuck Blue, 1970[11]), which work in the opposite manner by flattening some parts (the actual holes in the wall) from 3D into apparent color two-dimensionality, these works revolve around the idea of light as a tactile substance which gives a feeling of being touchable. [7]

    Light paintings from the series 'light encasements' (1969)[12] by Doug Wheeler stress more directly the concept of painting as the materialization of emptiness. His works— with the help of the vacuum treated acrylic light tubes that he sprinkled with lacquer—radiate in soft diffuse light and give a sense of light surrounding non-material emptiness. [8] The artist thus comments:

"I want the spectator to stand in the middle of the room and look at the painting and feel that if you walked into it, you'd be in another world."

/   Wheeler in Clark 2011, 31
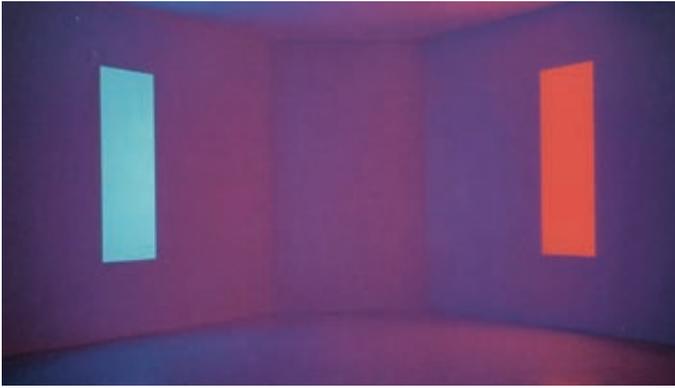
7
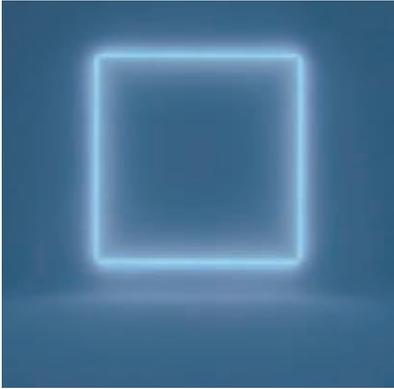
8

7   James Turrell, Stuck Red and Stuck Blue, 1970

8   Doug Wheeler, Untitled, 1969/2014

Light paintings 'light entrapments' (1968) by Ron Cooper were created by layering artificial resin and fiberglass. Cooper produced paintings that create, on the brink of the visible, 'traps for light'; he was interested in the effect of color suspended in space. In the late 60s Helen Pashgian also made acrylic paintings and three-dimensional objects, where the key element was the interplay between light and transparency. By molding resin and inserting solid acrylic elements into simple geometric (rectangular or round) shapes, she created illusory effects, which depended primarily on the angle of observation, i.e. the position of the viewer and the shifts in ambient light. In contrast to many artists, who in the 60s began their career as painters but gradually dropped canvas and turned to the use of the light medium (D. Wheeler, R. Irwin, L. Bell and others), Mary Corse, despite her experiments with materials, kept her primary interest in painting. By mixing glass micro-grains into color surfaces, she created a dynamic sense of refraction, condensing and reflection of light in paintings (the end of 60s), while later she introduced light-electric elements to create light-boxes which gravitate towards the 'technological sublime' (Clark 2011: 55).

Despite the variety in formal expression or the philosophical background of the artists who introduced light as a medium into their works in the 1960s, they share a common emphasis on the central importance of perceptual and situational experience in a work of art. Their art experiments with new materials, light technology and industrial productions reflected their interest in the psychological and perceptual dimension of the aesthetic experience which is supposed to expand the viewer's scope of self-consciousness.

COMPLEXITY AND NON-LINEARITY IN THE ABSTRACTION OF THE INFORMATION AGE

Modern science, which established models of reality on the basis of Einstein's theory of relativity and Planck's quantum physics, also generated a particular gap between the experiential and the theoretical, mathematically described model of space. This duality was actually introduced by analytical geometry (Descartes), which was not based on the space of perception (unlike the classical Euclidean geometry), but rather on the mathematical space of algebra and arithmetic. Classical geometry reflected relations found in natural space; geometric symbolization served representation (the relation between the geometric sign and thing was based on similarity), while analytical geometry used signs *per se*, which did not mirror perceptual space, but relied on functional equations. While the 20th century physics, on the basis of unifying the theory of relativity

13

Nonlinearity can be illustrated by playing cards where the rules of the game would be changing on the spot, due to the process of playing, or with the example of a labyrinth, whose walls and paths would be rearranged with each step of the way.

with quantum mechanics, offered a consistent explanation of physical space; mathematics established a whole specter of different geometries and multiple mathematically provable, intelligible space dimensions.

The predominant paradigm of postmodern science has been founded on the basis of chaos theory and nonlinear dynamic systems. In the nineteen-fifties and sixties, fractal geometry started to describe the reality of phenomena belonging to complex systems and nonlinear dynamics, beside which Euclidean geometry seemed useless. Euclidean space was based on the abstract geometric systems of coordinate axes, straight lines and basic geometric bodies; it treated natural phenomena (physical, biological…) in abstract terms, using reduction and specialization. It was founded on the search for linear processes in nature, i.e. the search for rules and patterns of the behavior of a particular system along the principles of cause and effect. Euclidean space was conceived in an abstract manner and did not correspond to the revelations of reality as described by chaos theory, which was founded on the finding that even the simplest systems could generate chaotic behavior. The accumulation of input information did not improve the understanding and prediction of nonlinear and chaotic dynamics, as the latter confronted us with non-periodicality and complex phenomena with which 'mistakes' tend to increase.[13] Research on the behavior of chaotic systems has revealed that reality is established through the relationship between order and disorder (chaos); it has led to the demand for new scientific methods that would be able to discover and examine the inherent order and behavior of seemingly totally chaotic and unpredictable natural or artificial structures. What is essential for studying nonlinear systems therefore is not linking causes with effects, but rather the identification of patterns and certain irregular repetitions (semblances, non-coincidental iterations). Space, which is curved, deformed, coiled, cut, undulated and dynamic is fittingly described by fractal geometry (Benoit Mandelbrot), which recognizes resemblances in the structure of fractals (not complete identity), iterated at different scales; the micro scale of the fractal structure reflects the macro structure, each minimal particle of the system reflecting the order of the whole to which it belongs. Chaos theory does not limit itself to fractals, but deals with nonlinear phenomena, which are characterized by variety, ephemerality and dynamism. Precise research on chaotic systems and nonlinear dynamics was made possible only by digital technology with algorithmically generated virtual simulations.

Modern art movements were often inspired by science; many avant-garde artists were led by the desire to use artistic means to visualize relative space, multidimensionality and other scientific visions of reality according to the new scientific paradigm. Deformed topologies,

14 Manovich illustrates his hypothesis on
the complexity aesthetics with examples
of moving computer generated (software)
simulations, which were – beside more
traditional art forms – incorporated into the
exhibition *Abstraction Now* (Kunstlerhaus
Wien, 2003). When considering the works of
artists such as Golan Levin, Manny Tan, James
Paterson and Amit Pitaru, Peter Luining,
Return and James Tindall, he notes the formal
similarities between these and the tradition
of modernist abstractions (composition based
on the grid, combinatory aesthetics, colour
and formal geometric reduction etc.). Despite
this, the analyzed works express an entirely
different logic: instead of the systematic play
of variations of a small number of elements,
these computer generated works constantly
subvert possible configurations, without an
inclination to discover or stabilize 'the right
form' (modernism). They present a continuous
process of the dynamic reshaping of forms
which are not linked hierarchically. Unlike
the works described here, which render
complexity through the dynamic behaviour
of considerably minimalist linear patterns,
some artists use algorithmic processes for
creating dense and complex fields which
are often covering the whole screen (Glen
Murphy, Casey Reas, Dexto, Meta, Ed Burton
and others).

decompositions, fractured and curved spatial representations reflect broader scientific and social concepts of modernism. The pictorial procedures of rationalization, the abstraction of visible reality and the gradual formal reduction of elements of pictorial space coincide with the dominant scientific tendency to count and deconstruct reality to elementary particles or indivisible elements, which are regulated by universal laws. Just as the micro-reality of scientific world reveals the workings of energetically charged particles (physics, chemistry), cells and chromosomes (biology) or the indivisible elements of sensory perception (experimental psychology), modern art leans towards pure abstraction with painting focusing on elementary art concepts – pure colors, lines and reduced geometric shapes. The prevailing reductionist method and paradigm of understanding reality permeated both the scientific and artistic strategies of modernism. (Manovich 2007; Vitz and Glimcher 1984)

Since the 1960s, we have witnessed the emergence of a new epistemological paradigm in numerous scientific and technical fields, including chaos theory, nonlinearity and the dynamics of complex systems, self-organization and autopoiesis, research on artificial life and intelligence, mirror neuron networks and genetic algorithms. The study of nonlinear dynamics of complex systems sheds light on the articulation of spontaneous order, which is not determined by the characteristics of the system's elements, but rather the emerging and unpredictable features that appear from chaos and coincidence in the process of simple interaction between elements. The paradigm of complexity, which has come to replace linear reductionist models of reality, does not merely reflect the new scientific and social reality, but can be traced also into the field of contemporary art production.

In abstract art of the information age, the aesthetics of complexity have appeared most explicitly in digital and new media arts, computer generated 'software' abstractions or (interactive) video simulations, which often use the same algorithmic bases as scientific animations of chaos and artificial life. As noted by Manovich, software artworks (moving computer simulations) demonstrate the aesthetics of complexity in the interactive parts, where the user, with the help of a particular interface, brings to life abstract dynamic patterns. These moving visual systems no longer evoke ideas of order and simplicity, and their behavior is neither linear nor random – instead they appear to change from a state to a state, swinging between order and chaos, in a similar manner as complex systems found in nature. (Manovich 2007: 349) Manovich clarifies the aesthetics of complexity using examples of digitally generated software (interactive) abstract works[14], which show the dynamic movement of changing linear structures. He emphasizes that the line used in

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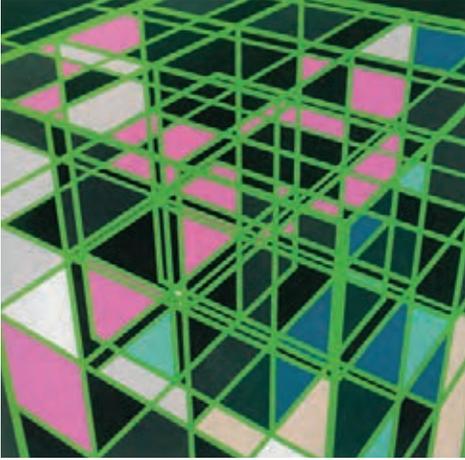
See: Rossalind Krauss, Grids (1979) in The
Originality of the Avant-Garde and Other
Modernist Myths.

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9   Esther Stocker, Untitled, 2001-2003

10   Sarah Morris, National Archive, 2002

the context of modernist abstraction presents the basic visual element of the abstract structure of the world, while in the context of the moving virtual abstract composition it evokes the richness and complexity of reality: "In other words, if modernist abstraction assumes that behind the sensorial richness of the world there are simple abstract structures that generate this richness, such a separation of levels is absent from software abstractions. Instead, we see a dynamic interaction of elements that periodically leads to certain orderly configurations." (Manovich 2007: 348)

A significant portion of the production of contemporary abstract painting is based on the processual logic and formal aesthetics of complexity. We can observe pictorial strategies of direct appropriation of algorithmic processes, ideas and techniques of visualizing complexity, or less direct references to the dynamism and nonlinearity of abstract structures that reveal—in seeming chaos—a certain sense of order. In the context of the so-called contemporary 'post-media' art production, paintings are created through processes of passing between digital tools and analogue techniques, while the resulting spatial structures include the experience of both media.

The line of contemporary abstract painting explores the visual potential of a grid with contemporary means of visualization and creation, thus reinterpreting the grid as an emblematic compositional principle of the modernist abstract painting.[15] Works of Esther Stocker construct variations of the grid linear orthogonal structures, where the abstract semantic content (the event of painting) is developing in the field of distinctions between order and deviations from order. Although the paintings suggest comparison with the modernist tradition of abstract painting (or centripetally and centrifugally directed compositions of grid), in this case the perception of singular formal units (color, line etc.) is not highlighted, but instead we are dealing with turning away from 'objects of perception' to 'perception itself' (Röbel 2004: 79). In the same vane the abstractions of Günther Selichar or Doris Marten express the aesthetics of digital visuality, which is determined by the reality of screens, pixels, dots, lines and the logic of binary numerical relations. The grid constructions of Sarah Morris, which refer to the transformation of modernist architecture, appear more spatial. [9-10]

Contemporary abstract pictorial representations seldom stress the notions of emptiness, absence and the depiction of the undepictable, which were characteristic of modernism. More often they are created on the bases of the scientific imaginaries of contemporary, technologically expanded reality: seemingly abstract organic (biomorphic) or geometric structures originate from the phenomenal but until now invisible dimension of reality, which has become accessible

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11   Ross Bleckner

12   Ross Bleckner

with the help of various contemporary medical technologies (X-ray, ultrasound and magnetic resonance), microscopic or telescopic instruments, nanotechnology etc. For example, the pictorial abstractions of Ross Bleckner incorporate the experience of the technologically revealed complexity, which points to the invisible bodily geometry; the invisible realms of bodily, cellular and organic structures create bodily topologies, visualized in an utterly abstract manner. [11-12]

While the technologization of nature characterizes the works of Ross Bleckner, the abstract works of Fiona Ray or Tomma Abts are marked by greater fusion between technology and nature, which is described by Paul Crowther with the term *'techno-nature'*. Crowther believes that "the relation between contemporary sensibility and the natural world, in general, is thoroughly mediated by technology. (...) We have, then, three vectors—the naturalization of technology, the technologization of nature, and the continuum wherein these tendencies intermingle in a very close way" (Crowther, 2012: 219). The 'floral' motifs in Fiona Ray's paintings give an impression of vegetative growth creating new, unprecedented, nature-like vegetative forms, while the works of Tomma Abts produce a technological hybrid between the natural and the artificial through intense trompe *l'oeil* effects of simulation: orbital, curvilinear and sharp angular forms are seemingly superimposed and perforating undifferentiated backgrounds. [13-14]

Such pictorial images question blurred distinctions between the real, virtual and abstract, visible and invisible, natural and artificial in the contemporary world; they open up a complex field of questions, which, in abstract painting, highlight the delicate and constantly changing relations between reality and (its) representation in art. The appropriation of scientific and technological images of the natural in artistic abstraction is leading us to reflect on the epistemological dimensions of scientific visualizations developed by Horst Bredekamp. Bredekamp emphasizes that scientific and technological images do not function merely as passive illustrations, but in fact actively participate in the epistemological production of knowledge. (Bredekamp, 2015: 1-5). This raises the question to what extent do artistic (abstract) images, created on the basis of appropriating and intertwining technological, scientific and aesthetic aspects of imaging the real (natural), also possess the generative and transformative epistemological power in art research, and in what ways does such artistic production contribute to the expansion of knowledge with its means and methods.

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13   Fiona Rae, Don't make skies fall down!!!, 2007

14   Tomma Abts, Stilf, 1999

Modernist abstraction related to the scientific and technological paradigm of understanding the then reality and used its own, artistic medium, to reflect the cognitive, epistemological and aesthetic values of the broader social sphere. The abstract art of the information (postmodern) era, which is affected by contemporary scientific models of reality, communication technologies, social networks and the digitally expanded concept of the everyday, is likewise a reflection of the world which is based on a more complex, virtually connected and dynamic mesh of relations. Contemporary abstract images rarely invoke notions of void, absence or non-objectness, since their geometric or biomorphic constellations reflect the symbolic forms of contemporary social, technological and virtual complexity, which generates a fragile and dynamic oscillation between order and disorder.

Regardless of the formal and content-related variety of contemporary pictorial abstraction, the strength of contemporary abstract or non-objective pictorial forms can be seen in providing a form of art that encourages, in a particular manner, the viewer's freedom of interpretation. Studies of the sensory and cognitive dimensions of aesthetic experience in contemporary neuroscience show that the observation of the visually undefined, ambivalent or abstract forms and patterns, or those indeterminate in terms of meaning, intensify imagination and intuitive (pre-cerebral) dimensions of aesthetic experience, due to the lack of a coherent semantic (narrative or figurative) expression. The vital force of abstract art stems from its ability to trigger an individual sensory and emotional experience before the cerebral (rational) response; it can thus in a unique way inspire the viewer's creativity and imagination in experiencing art and reality.

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Attractors in Thought
/
George Kubler and Donald Judd

Claude Armstrong, Donna Cohen

1

Also known as The Block, La Mansana
de Chinati is Donald Judd's living and
work compound in Marfa, Texas, adapted
and reconfigured from former U.S. Army
structures, now curated and conserved by
Judd Foundation. The artist's library contains
approximately 13,000 volumes in philosophy,
art history, general history and science.

2

Kubler, The Shape of Time, first edition. The
mention of this work was first seen by the
authors as a passage of reference in Kirk
Varnedoe's Pictures of Nothing, Princeton,
2006.

3

Kubler, page viii.

4

Kubler, page 37.

PLANE 1

On a shelf of Donald Judd's library at La Mansana de Chinati[1] is a book by art historian George Kubler, *The Shape of Time, Remarks on the History of Things*.[2] A thin volume, this work develops an alternative framework for thinking about and experiencing the history of art. Counter to the practice of positioning art within the time and culture of the artists' lives in search of meaning, Kubler advances the idea of systematic observation of the thing itself, noting invention, replication and discontinuance relative to all things that are made, from tools to fashion. It's a disassembly of centuries-old assumptions of how to regard a work of art. Kubler's thesis is a rejection of art history based on biological, biographical and literary methodologies. Published in 1962, the work is also a poignant reminder of the unpredictability of a future the reader exists within now – the globalized artworld market, virtual reality and the commodification of everything ever invented into a consumer product or experience.

Kubler presents his remarks as a new mental model for encountering artifacts with new terms describing artworks that address "morphological problems of duration in series and sequence."[3] The crux of his argument lies in the explication of *linked solutions* over time and their apparent *form-class*. Appropriating concepts from mathematics, anthropology, linguistics and other sciences, Kubler outlines the nature of the emergence of *formal sequences*, their development and degradation – "a historical network of gradually altered repetitions of the same trait."[4]

The authors of this essay, while working together on an exhibition of Judd's architecture, encounter Kubler's writings and his term *"Prime Object";* the term strikes the authors with the clear, resonant ring of the bell of recognition, a remarkable correspondence to Judd's work in architecture in the 1980's- 1990's. In Kubler's words:

"…Prime Objects and Replications denote principal inventions and the entire system of replicas, reproductions, copies, reductions, transfers, and derivations, floating in the wake of an important work of art… Prime objects resemble the prime numbers of mathematics because no conclusive rule is known to govern the appearance of either… The two phenomena now escape regulation. Prime numbers have no

Correspondences

5

Kubler, page 39.

6

Judd, Specific Objects, 1964, in Donald Judd Writings, pages 134-145.

7

Donald Judd has been insufficiently credited with proposing essential aspects of the project in collaboration with Zwimpfer Architects. Archival materials at Judd Foundation support his primary role in the massing and exterior of the structure. Certain interior aspects are inarguably the result of his rules of spatial clarity. See Peter Merian Haus Basel, Basel, Birkhauser, 2002, page 23.

8

Raskin, page 65.

Peter Merian Haus Basel (Bahnhof Ost), Model Basel Switzerland 1992-1994 (project completed in 2000)

Donald Judd façade (Concept and Design) in collaboration with Zwimpfer Partners and Burgen Nissen Wenziaft

divisors other than themselves and unity; prime objects likewise resist decomposition in being original entities. Their character as primes is not explained by their antecedents, and their order in history is enigmatic."[5]

Kubler cites works of art as examples of "*prime objects*", and also classifies a large portion of historic examples of "prime objects" as buildings. He acknowledges the existence of architectural typology, in his term, *form-classes*. Judd likely encountered Kubler's writings while a student of Philosophy at Columbia University.

Judd went on to physically create a new spatial art. In the spirit of Kubler he proposed an alternative understanding of the art object, at different scales, including landscape and architecture. Judd's *Specific Objects* essay from 1964, and other writings that comment on problems of art history, style labels and criticism, seem to take positions reasonably attributable to Kubler as leverage for his own body of writings and constructed works.[6]

PLANE 2

We use Kubler's framework for "Prime Objects and Replications" to consider the most complete work of architecture by Donald Judd, the Peter Merian Haus office building in Basel, Switzerland (formerly known, while Judd worked on it, as the "Bahnhof Ost").[7]

How this urban intervention came to be is not so interesting as its existence among lesser contemporary works. The configurational and formal aspects of this structure demonstrate the breadth of the artist's thinking concerning habitable space, urban conditions and the sensation of surface effects. The building has both the appearance of a monolith and an assemblage of discreet volumes. Like many of Judd's works of art, there is present "disparity"[8] within unity. The solid and void of the massing of the structure gives the expression of a closed series, within an overall object that may be one of a development of further objects in an open sequence. The predominant extension of the building is horizontal, but it's also comprised of several vertically-oriented spaces within.

Peter Merian Haus is of a type, the multi-tenant office center, but breaks with this type radically. First, it's not possible for a tenant to occupy a floor fully across the length of the building. There are six service cores with separate entrances, common facilities and courtyard-like spaces that join somewhat like a rowhouse. Second, the public can walk or ride a bicycle through the entire length of the building overlooking the depressed rail yard and connecting to existing streets. This horizontal space also connects to each entrance court to the six cores. Third, there are at each sixth part an internal light court that penetrates the

floor plates under large skylight-roofs. Fourth, there is no hierarchy of forms based on the center, or front or back of the structure; everyone can enter or leave the building according to their needs at several points.

All the exterior vertical surfaces are glazed with a subtly rippled blue-green tinted panel of varying transparency, depending on its location, and offset 5 cm outboard of the enclosing walls. The system is uniformly modular, but the effects are dynamic, atmospheric, changing in real experience.

Is Peter Merian Haus a *Prime Object* as George Kubler might have seen it? It has certain attributes and aspects that convince, but contemporary architecture in an urban context is a complicated proposition, with a multiplicity of functional and environmental pressures that affect our mental concept of the work and experience of the place it has established in Basel.

The authors believe that as he developed as an architect Judd evolved in his thinking of the object *per se* and its surroundings. This is consistent with the evolution of his critiques of contemporary, conventional relations in space of art objects and environments. Judd avoided the embellishment of traditional construction techniques and avoided the use of cutting-edge or experimental materials most viewers would have not seen. At Peter Marian Haus Judd's choice and juxtaposition of familiar contemporary materials within a three-dimensional grid presented unique combinations that are difficult to place in time.

PLANE 3

The oldest surviving crafted objects are flaked and polished stones. There exist lacunae of hundreds of centuries in the known record of human-made objects. Collections of stone tools evidence incremental refinements and adaptations over millennia. New sciences such as paleo-geology, climatology and genetics are revealing rapid and ever-increasing knowledge of the context of human existence and evolution hardly imaginable by Kubler writing in 1961. Kubler realized that the characterization of Western civilization as a process of periods of peak human achievement and progress had run its course. At the time of publication of "The Shape of Time", works of Abstract Expressionism were beginning to show signs of saturation and exhaustion. Artists of Judd's generation were either exploring other ways of producing imaginary space and signs, or making real objects of intentional material and actual space.

The evidence of time – the light of stars, organic life and death, day and night – is Form, Form in movement, Form in light, Form in shadow. Kubler presents the visual classification of made things, at different scales,

9
Kubler, page 6.

10
Judd, Donald, Donald Judd Writings, page 75.

11
Raskin, page 65.

marking time, as a mental concept. The mental concept of still Forms and Objects as marks of time over a much greater span of recorded knowledge is of course, the subject of paleontology, archeology and cosmology.

Kubler points out that we have a reliable record of the evolution of objects and products of human invention expanding far beyond the two hundred year span of the narrative of western art history, and that all objects made by humans are first and foremost works of craft; in his view good artists understand this continuum and the best art demonstrates these facts. The imposed layering of meaning by recent art historians is unnecessary and only serves to distract from the objects themselves. The span of physical evidence of human craft, for example, is on the order of 200 times the length of the span of the past 10,000 years, the span of civilizations.

Kubler's critique of the biographical approach to art history, which tends to validate concepts of genius and prophecy, contrarily acknowledges the fact that some artists are successful and some not, regardless of their talent. By using the analogy of a railroad system, Kubler asks us to regard the products of an artist's life, not so much signifiers of creative dominance, but as the result of a fortuitous and contingent *entrance* into the "track system" of the artworld.[9]

Donald Judd had what Kubler would call a fortuitous *entrance* in time and place in New York. He was not the only one, but *"temperament, talent and position"* converged to his remarkable advantage. Around 1965, Judd had established "the concatenation that will grow"[10] in the fabrication of series and sequences of "boxes", "stacks" and "progressions." These works coexisted distinctively, and still do, within the incredible economic pluralism, globalization and densification of the artworld since that time.

To clarify the distinction between the biographical and the morphological approach to art history, Kubler states his goal of visualizing time. The emergence and recurrence of made things, their classification, their development and their end, is his field of encounter. Individual lives, specific dates and human events can never be completely documented or explained, only the things that remain.

In what seems, at first reading, a discursive speculation on the nature of time, we observe Kubler's repositioning of his thesis from the perspective of common sensory experience. Essentially, time seems to be nothing. We claim its existence only through signs. The *actuality* of time is not graspable.[11] Society constructs instruments measuring time, but time has no existence in and of itself, consciously, ontologically. Judd consciously arranged formal sequences that avoided content such as a narrative in time. Kubler set the framework for Judd's experiment with the thing that could be a work of art and architecture.

12
Judd, Donald, Donald Judd Writings, page 812.

PLANE 4

In his early thirties, Donald Judd was searching for a way to make art that was not a copy or derivative of the best art of his time. Whether or not it can be said he was aware of saturation or stasis in the dominance of the paintings of Abstract Expressionism and to a lesser extent sculpture, Judd wanted to make things that did not exist before.

As both an art critic and an artist, observing his contemporaries and by his own experimentation, trial and error, Judd began to understand a painting of his time as a three-dimensional object, weak but an object nonetheless. A new kind of painting could have a visible spatial structure within itself, not just the front surface, and a relationship to other surfaces around it in real space, not illusionistic space.

Judd was dissatisfied with the many conditions of making art and the business of art and art criticism. He could not help but be analytical and dubious of the a priori assumptions in the arc of Western culture and art as they were predominantly expressed. Judd knew that Pollock, Newman, and Rothko and others had made breakthroughs, but, in addition, they were misinterpreted by the museums and the critics. Judd had plenty of experience looking at modern and contemporary art, being a reviewer for art journals for several years.

His critical eye brought him to respectfully consider works which evidenced new qualities, some but not all using a new technique. Judd discovered that Form and sensation could be unprecedented as a unity, strongly present in some scale with the body, but not conclusive or complete, rather transitional and open-ended as a series of objects.

Judd wrote that in the early process of making painting more like three-dimensional works he had a revelation. He placed some of the works on the floor, and they seemed fine that way. He realized that walls, floors and ceilings were not mere backgrounds, but engaged environments.[12]

Two reinventions inherent in Judd's works of art are worth describing in relation to Kubler's definition of made things as potentially *Prime Objects* and their *Replications*. One, Judd created both "closed series and open sequences" *within* the body of the type (*form-class*). The one hundred aluminum works at Marfa, Texas are an example of this. Two, Judd developed several types of three-dimensional objects that do not appear to show signs of evolutionary change or refinement. None of the series Judd produced are more interesting than the previous iterations or the subsequent ones, thus denying the reading of them as developments in time at all.

13

Kubler, George, The Art and Architecture of Ancient America – The Mexican, Maya and Andean Peoples, New Haven, Yale University Press, 1962; Building the Escorial, Princeton, Princeton University Press, 1982.

14

Summers, Introduction.

15

O'Donnell, page 21.

PLANE 5

The *Shape of Time* did not revolutionize the writing of art history. But Kubler wrote other highly-regarded works on specific works of architecture that are consistent with the framework he established in the subject text, and lectured into the 1980's at Yale University.[13] One of his former students, David Summers, wrote his own magnus opus of art history, *Real Spaces: World Art History and the Rise of Western Modernism*, published in 2003.[14] The work is an elaborate, kaleidoscopic volume of almost 700 pages laying out his revisionist theory. A recent scholarly review called it "one of the most ambitious and compelling attempts to develop a new analytic framework for art-historical analysis across geographic and temporal boundaries."[15] We can detect the influence of Kubler in this more recent work by Summers, in the emphasis of key concepts, including the fundamental importance of the act of the making of things (*facture*) and the shift necessary in our point of view from mere visual analysis to spatial analysis (*historical practices*). Where Kubler is posing the object as evidence of real time, Summer is expanding the framework to regard the object in real space.

We are taking the liberty to expand the field of correspondences between Kubler's and Judd's thought beyond their lifetimes. The discourse on the critical reading of art and its history, including architecture history, continues, and the outstanding works, whenever their time of emergence, appear to be always new. We are also stepping out of the trap of biographical chronology of cause and effect, influencer and the contemporary influenced, by bridging another set of correspondences with the help of Summers. The filaments of thought and action connecting Kubler, Judd and Summers are not bound by time since they concern ever-present existential questions. The binders of these correspondences is architectural space expressed essentially.

The *Shape of Time* is a philosophical work. Kubler is presenting problems that pose the question of what is real and what is illusionary. The language he uses to build his argument affects our perceptions. His concern is with the historical and pervasive use of specific analogous frameworks in the writing of art history. Kubler's alternative perspective extracts concepts from contemporary science and philosophy. He acknowledges that reality is ever-unfolding in the heuristics of the making of things. Kubler ends his essay at the cusp in his time of events of incredible diversity and technical complexity. The analogous frameworks that he employs ask the reader to reconsider what relation to current knowledge have things been and are things being made. The *Shape of Time* is a primer for taking the

Raskin, page 73.

long, wide view of what endures physically and conceptually, as expressed in the existence and quality of objects, including buildings.

David Summers consequent work *Real Spaces* is explicit in its references to contemporary philosophers and presents a vast array of case studies from all eras and diverse cultures. The relevant purpose of his project is to consider world art as manifestations of the reification of materials and space. His thesis presents the historical divergence of our perceptual awareness of space *per se* as either real or virtual. Summers emphasizes the importance of the body in the experience of real space and its engendering of the discovery and application of planarity. Judd's works are predominantly planar.

PLANE 6

"3 January 1976
For a long time I've considered time to be nothing. Any time that you think of is only the relation or sequence of events, how long a person lives, human biology, or how many times the earth goes around the sun. There is no other time than this. If you remove all of the events there is nothing. Space, also, is nothing. There are things in it, variously related. If you remove these and the means of measurement between them, their phenomena, most importantly light-years, there is nothing."

/   Judd, in Donald Judd Writings, page 283.

Donald Judd used cylinders in several works of art and architecture in a variety of ways. Some of the early floor and wall-mounted art series incorporated segments of cylindrical space both as protruding and negative forms.[16] In every case, the cylinder or cylindrical segment is attached to a planar surface. One of the early outdoor works of art Judd had fabricated in New Canaan, Connecticut, is a thick ring of concrete where the top surface is level and the curved surfaces of the low cylindrical shape vary according to the sloped ground. The cylindrical volume of space is difficult to mentally measure relative to other shapes of space because the central generator of curved form is in space and not expressed on the surface.

The surface-generated plane of various proportions is Judd's primary *form-class* throughout his works. Walls, panels, floors, platforms and shelves of rectangular shape and depth give order to the perception and experience of a three-dimensional volume. He avoided, if possible, the construction of cubical space because of its implications of perfection and stasis.

Judd proposed the construction of objects that contained space one could observe freely and directly. The space could be imagined as accessible to a smaller version of oneself or actually walked through. What is distinctive in Judd's work is that any narrative, feeling, meaning or sign one might find while being in the space is in one's head, and there is only bare material and form configured in scale to respect the presence of a spatial concept within and around the object. The twelve anodized aluminum floor works, first installed in 1989 in Germany, are a set of examples of Judd's hollowing out of time by an uncomplicated containment of space. Though the construction of the works is clear, never hidden, the effects are complex. Large aluminum sheets are assembled as prisms only open at the top, with elements in each prism of the same material, some in different anodized colors, or sheets of colored Plexiglas intervening in various ways within the overall volume.

The work also proposes Thinness. The container and the dividing elements seem to be as thin as possible. The qualities that result – lightness, sharpness and delicacy all contrast with the prisms' scale. Thinness allows for the use of isotropic materials and quiet junctures. Thinness is present in many of Judd's works, notably the impossibly thin ensemble of concrete buildings in Marfa. All Judd's works are propositions in architecture. Realized as art and buildings in real spaces, they are contingent, hand-crafted, *Prime Objects* among all things beautifully-made.

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APRIL, 191

БЕССАРАБІЯ, РУ

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INTERVIEW EXCERPTS: GERHARD MARX WITH ALEXANDRA DODD

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MARX: This is it. So my interest is in taking something that presents itself as objective truth and turning it into very subjective truth. I am speaking back to a particular kind of power by fragmenting it and turning into subjective utterance – a map of uncertainty.

DODD: Somehow I'm getting this picture of Donald Trump now... This fresh cultural panic about living in a 'post-truth era'. Mostly, that thought tends to have a negative valence. We associate it with the phenomenon of fake news, miscommunication and the pliability of facts in the face of rogue politics. But for artists and writers, there's always been something liberating in the 'post-truth' position. We could even think of it as a kind of triumph of post-modern theory – a dethroning of absolutism...

MARX: Yes. I'm interested in the lie, in the cheat – in refiguring the facts. I'm not using oil paint and moving from a space of formlessness towards something. I am using the material world and reshaping it. There's this sense that this is the world that I was presented with, but what can I do with it, where can I go with it? I think the act of cutting the map breaks it out of its function. The moment I cut into it, it becomes an object – a terrain itself. It no longer refers to a terrain – it *is* a terrain. It becomes the object of scrutiny. So building up the surface, exploring the textural qualities of it, becomes a way of driving a wedge between the map and the terrain. It seems that the more I fragment the map, the more visible the signs of its fabrication become. And, almost ironically, the more pronounced the signs become, the more I become aware of the haunted and loaded space between them and the actual time and place they used to refer to.

/   Perpetual Proximity (Transparent Territory), detail
     2016, cut and reconstituted map fragments and
   acrylic ground on canvas, 100 x 100cm

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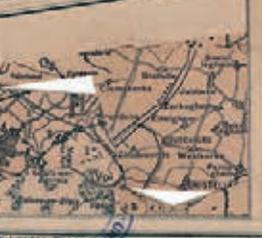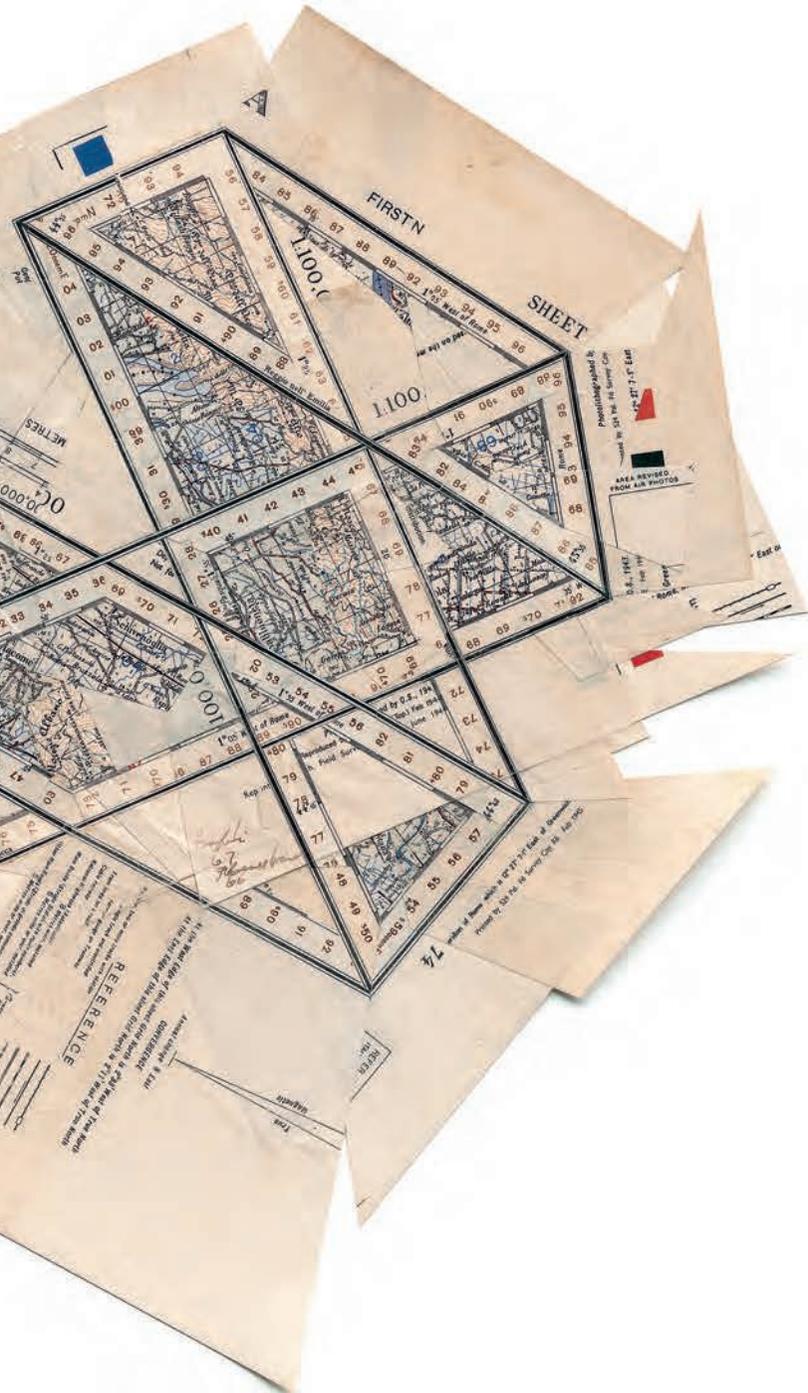
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Marx: I have always been intrigued by the architectural backgrounds in Giotto's paintings – they sit like strange, crystal-like geometries in parallel to the human dramas he depicts, ascribing to a different sense of perspective. I printed out a series of these paintings and blocked out the human figures with thick black tape to remove the anthropocentrism from the images. These references became central. I like to think that these works 'flicker' between the suggested dimensionality of the maps and their inherent flatness. The maps started to suggest spaces one might enter, like a chamber or an excavation site.

In some of the more recent *Transparent Territory* works, only small fragments of line describe the shapes of the planes in space. I try to give as little information as possible. I only draw the corners, the seams, the intersections, and the elements that are essential to describe the dimensionality of the geometries. They are fragments built from fragments and they float like jetsam in space.

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DODD: At what point in the making process does the logic emerge for you?

MARX: It is almost immediate, but it might shift over time. I start and follow the line, and once I've got five fragments, the logic begins to emerge. I disregard the content of the map and just look at it visually. It's a process of thinking as you make and making as you think – a very lively project of doing something and then trying to understand what the fact of you doing it means. It's definitely not expressionistic. It's an investigative project that I set in motion and that I then have to solve. I don't make work to express myself, but because I'm interested in things – want to engage with things. The act of making is an act of embodied thinking for me – a way of thinking with my hands.

/   Reiteration (Transparent Territory), 2016
     Cut and reconstituted Map Fragments on Acrylic
     Ground and canvas, 180 x 120cm
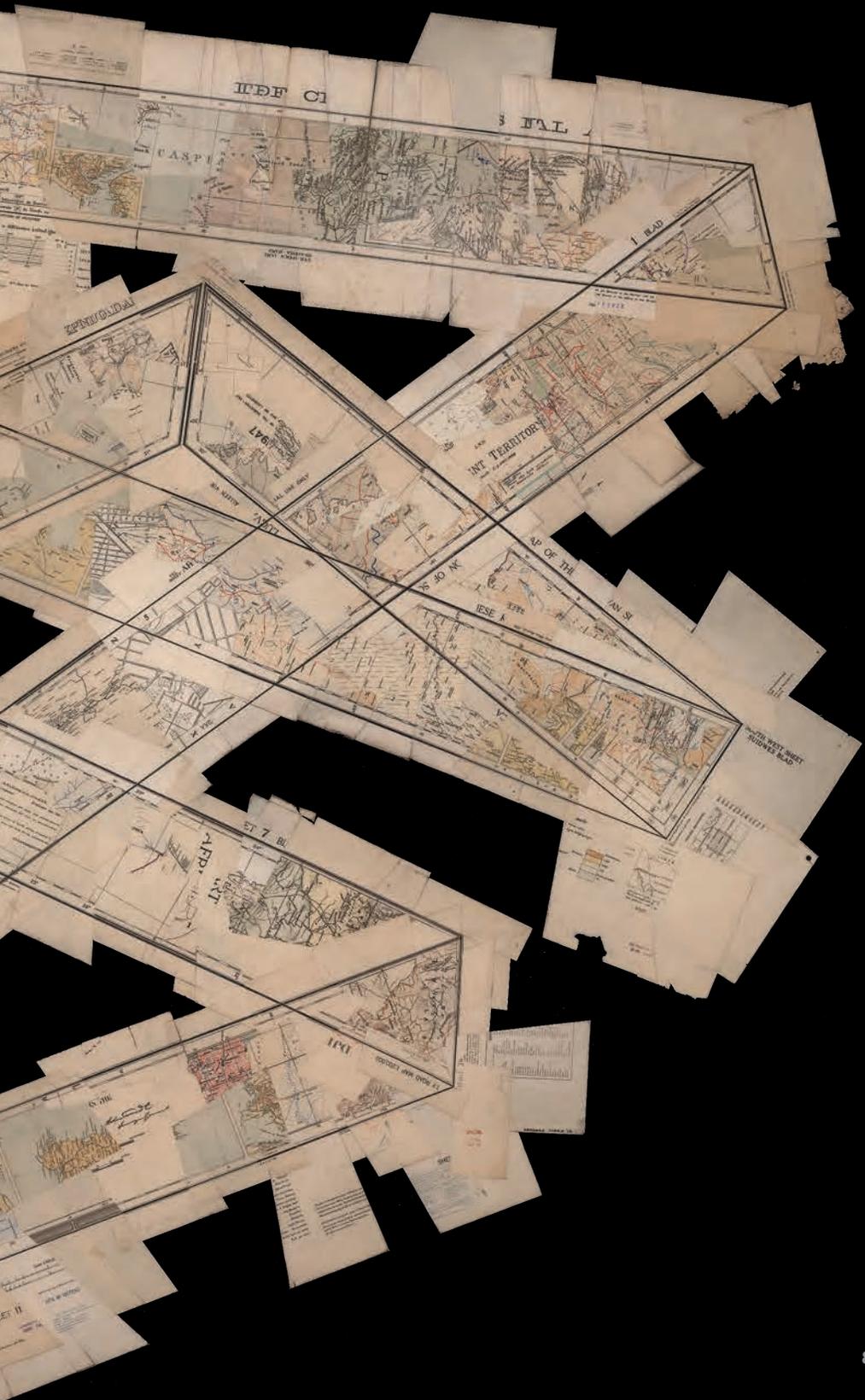
A small conjecture 1, 2016
Cut and reconstituted Map Fragments on Acrylic Ground and canvas
30 x 30cm

A small escalating refrain (Transparent Territory), 2016
Cut and reconstituted map fragments and acrylic ground on canvas
45 x 45cm

Dwell, 2018
Cut and Reconstituted Map Fragments on Acrylic Ground and Canvas
120 x 120cm

Transparent territory 2, 2016
Cut and reconstituted Map Fragments
70 x 70cm

Transparent territory 3, 2016
Cut and reconstituted Map Fragments
70x70cm

Swivel 1, 2017
Cut and Reconstituted Map Fragments on Acrylic ground and canvas
50 x 50 cm
Photo Andreas Vlackakis_cropped

Ocean Crossing, 2018
Reconfigured Map Fragments on Acrylic-Polyurethane Ground and Canvas
180 x 140cm

Migrant, 2018
Reconfigured Map fragments on Acrylic-Polyurethane Ground and Canvas
220 x 180cm

The Human Face Mirror

Massimiliano Ciammaichella

Betty Edwards, *Il nuovo Disegnare con la parte destra del cervello* (Milano: Longanesi, 2011), p. 71.

The theme of the *correspondences* between the real and the human face portrait activates a system of relationships that are both personal and linked to the relational patterns we deal with on a daily basis. It is about proprioception and its coherent reproduced image, but it is also connected to the expectation triggered by one's own aesthetic seen from someone else's eyes. This may be true for individuals represented in a photograph, in a painting or in a drawing made by other subjects than us, to whom we lend our physicality in order to have it transferred to the chosen support frame; but what happens when we construct a self-portrait?

If the term *correspondence* implies a reciprocal relationship—in this case, mediated by the device in which the act of recognition begins the graphic composition of a precise idea of self—, then the practice of self-portraying requires a continuous transfiguration process for which the face imprinted in the static image is the synthesis of a multitude of faces and possible expressions, which often we are unable to recognize because we are made of our diachronic forgetfulness and, despite living in the present, we are prone to wear and tear. In the light of these conditions, when we are asked to make a self-portrait, we face a crisis: we tend to attribute to our technical incapacity the non-fulfilment of the task, sometimes thinking that the *myth of Narcissus* does not belong to us, some others preferring to remain in the shadows. Therefore, it is the denial of personal staging, which is impartial in the credible reflection of the instilled image that also infuses our essence. That is due to the belief that we cannot present ourselves at the best of our abilities, so it makes us abandon the challenge.

Yet the design "is the ability to ride a bike", we all can master it and, as Betty Edwards teaches, we must learn to see. In this sense, the author proposes a series of exercises, including the self-portrait, with the advice of using an inverted image to abstract the level of recognition.

It is indeed very difficult to identify the subject represented in an upside-down photograph or illustration. That is because "[...] What simply happens is that the left hemisphere [of the brain] in front of this task renounces to face it"[1]. Therefore, learning to draw means to stimulate the right hemisphere and if it is true that to do so we must know how to see, the drawing of the self-portrait requires the ability to know how to watch

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Stefano Ferrari, *Lo specchio dell'Io.
Autoritratto e psicologia* (Roma: GLF Editori
Laterza, 2002), p. 34.

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Patrizia Magli, *Pitturare il volto. Il Trucco,
l'Arte, la Moda* (Venezia: Marsilio, 2013), pp.
128-129.

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Federico Fioravanti, "Il selfie di Claricia."
Accessed October 7, 2018. http://www.
festivaldelmedioevo.it/portal/il-selfie-di-
claricia.

1 Self-portrait of Matteo Paris, in *Historia
Anglorum. Chronica majora*, 1250-1259. London,
British Library, Royal MS 14 C VII, f.6r.

2 Self-portrait of Claricia, in *Psalter*, Late 12th-
early 13th century. Baltimora, The Walters Art
Museum

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Alberto Boatto, *Narciso infranto. L'autoritratto
moderno da Goya a Warhol* (Roma-Bari:
Laterza, 1997), p. 18.

and know ourselves. According to Stefano Ferrari, this learning process goes hand in hand with the construction of the ego to which the self-portrait alludes, as "it calls into question our sense of identity in such a way that our ego (and the image that represents it) must be—so to speak—refreshed and reprogrammed"[2]. More generally, the artist's self-portrait has satisfied the desire to convey a precise idea of identity and, as Patrizia Magli claims, this impulse oscillates between seeing and feeling themselves[3], as well as the need to leave to posterity a trace of their presence which can only be synthesized in the performative act of performing.

Throughout history the self-portrait has become a real artistic genre of which is very difficult to date the origin; but since the Middle Ages authors' figures of the illuminated codes have appeared, immortalized in the act of painting the block initial letter, concentrating and identifying themselves in their work as amanuensis and miniaturists. Usually they were monks who offered their calligraphic art and were shown while performing acts of humility and prostration, as for example in the case of Matteo Paris lying at the foot of the Virgin Mary, with his name and surname written above the back and published on the frontispiece of the homonymous *Historia Anglorum. Chronica majora* (1250-1259). [1]

They didn't lack for nuns as well, and in some cases secular women such as Claricia, who published the *Psalter* at the end of the 12th century, one can find a collection of psalms now kept at the Walters Art Museum in Baltimore. The young woman is painted in a graceful pose, her hair is combed in long braids and she wears a dress with bell sleeves according to the fashion of the time. Her figure integrates the stem of the letter *Q* and probably, as Federico Fioravanti notes, she was a copyist who did not take the vows and offered her service as an amanuensis in the *scriptorium* of the abbey of the Benedictine nuns of Augsburg, in Germany[4]. [2]

This practice of the incursion of the self continued also during the Renaissance. For example, Fra Filippo Lippi in the altarpiece of the *Coronation of the Virgin* (1441-1447 ca.), looks away from the scene represented to address it to the spectator. Positioned at the base of the composition on the left, he assumes a melancholic expression and his right hand holds his face absorbed in thoughts. According to Alberto Boatto, the artist's choice is not pointed to self-congratulation—as the seventeenth century accustomed us—but is rather linked to a "measured assertion [...]. What strikes and persuades in these first self-portraits is the absence of any vainglory and the calm sober affirmation of oneself as human beings"[5]. Conversely, the myth of Narcissus who reflects his own image in the obsessive and contemplative act of looking from the shore of the spring is evoked by the predominant use of convex mirrors, which appear, for example, in the *Andolfini spouses*
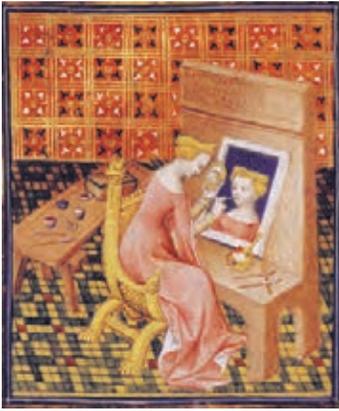
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Luciano Bellosi and Aldo Rossi eds. *Le vite de' più eccellenti pittori, scultori ed architetti. Di Giorgio Vasari* (Torino: Einaudi, 1986), pp. 815-822.
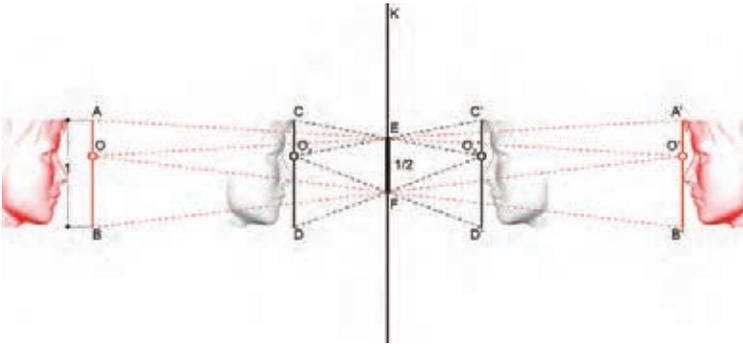
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James Hall, *The Self-portrait. A Cultural History* (London: Thames & Hudson, 2016), p. 32.

3 Portrait of Marsia, in *De Claris mulieribus, traduction anonyme en français, Livre des femmes nobles et renommees*, 1403. Paris, Bibliothèque Nationale de France

4 Massimiliano Ciammaichella, *Human face measure*, 2018

by Jan Van Eyck (1434), revealing who is hidden in front of the sur-
face of the painting, or in the self-portrait of Parmigianino (1524).

About this work, which became the *identity card* of the art-
ist—because it was greatly appreciated by Pope Clement VII who
invited the artist to immediately join him in Rome—Giorgio Vasari
speaks with great enthusiasm, defining the Parmesan painter Fran-
cesco Mazzola as a man with a beautiful face[6]. The artist portrayed
himself by employing a barber's mirror in a small room with a sky-
light. The portrait suffers from the distortions reflected by the curved
support, including the left hand on the foreground. But the face of
the young man remains intact: he has brown hair and eyes; the com-
plexion is rosy, and the semi-closed mouth reveals a slight smile.

The mirror also appears in what James Hall defines as the first
self-portrait of an artist, contained in the 1403 French reissue of work
which Boccaccio dedicated to the biography of 106 famous women—*De
Claris mulieribus* (1361-1362)—, where "[…] lt shows the ancient Roman
artist 'Marcia' sitting at a table in her luxuriously appointed workshop
gazing at the reflection of her head in a small convex mirror. Boccac-
cio probably based her on Iaia, one of six women painters mentioned
by Pliny: Iaia's self-portrait […] is likely to have been painted using a
mirror made of polished metal. The circular image on Marcia's mir-
ror is being scaled up unto an over-life-size, flat, rectangular painting
that includes her neck and shoulders. The tip of her brush touches her
painted red lips, as if to suggest that her second self will speak at any
moment. The *mise-en-scéne* insists emphatically that artists are perfectly
capable of amplifying and clarifying partial images derived from round
and/or convex mirrors, and adapting them to a different format"[7]. [3]

Unfortunately, the name of the miniaturist is unknown, however,
Marcia seems to know the scale relationships that exist between the real
and the mirrored image: our face reflected on a flat mirror is always half
the size of the real one, regardless of our distance from the mirror. This
assumption is easily confirmed and demonstrated [4]. We can assume
K as the profile plane of a mirror and AB the length of a face whose
eye is in O. The distance of AB from K is the same as the alter ego $A'B'$,
beyond the mirror, thus the projection of AB and $A'B'$ in K is equal to
half of each of them. The same applies to the CD segment, which illus-
trates the approaching of a face to the mirror and its virtual $C'D'$ clone.

Leonardo Baglioni and Riccardo Migliari reflect on similar con-
siderations in a refined article dedicated to the origins of perspective
and the use of mirrors as fundamental tools for reducing the real space
in the plan. Starting from the concept of visual pyramid, they state that
it is possible to build two more: "with vertexes that are horizontal and

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Leonardo Baglioni and Riccardo Migliari, "Lo specchio alle origini della prospettiva. The mirror at the origin of perspective," *Disegnare idee Immagini*, no. 56 (June 2018): 45.
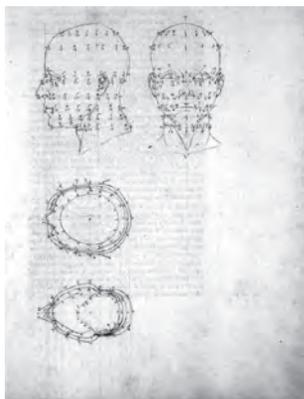
5   Albrecht Dürer, *Self-portrait*, 1484. Vienna, Graphische Sammlung

6, 7 Piero della Francesca, human head projections, in *De prospectiva pingendi*, before 1480, (P, c. 61r) and (P, c. 65r). Milano, Biblioteca Ambrosiana

symmetrical transpositions of the vertex of the first pyramid. Having established the positions of the vertexes we can move the mirror backwards and forwards until, through trial and error, the oblique edges of the side pyramids coincide with the diagonals of the squares reflected in the mirror. The distance between the observer and the mirror is equal to half the distance between the observer and one of the vertexes of the side pyramids. Or else we could maintain the same distance between the observer and the mirror and increase or decrease the distances between the vertex of the main pyramid and that of the side pyramids until the relative oblique edges coincide with the diagonals of the square"[8].

The mirror, therefore, is an instrument to understand reality and determined the birth of perspective, meant as the science of representation. Just think of the process that took the name of *costruzione legittima* (legitimate construction), which is due to the empirical practices of Filippo Brunelleschi who, in 1413, employed a 30cm side square wooden board, with a hole through which he could look at the image of the facade of the Florence baptistery reflected in a mirror parallel to the board itself.

Between the fifteenth and the sixteenth centuries there is a flourishing proliferation of treatises on perspective: Leon Battista Alberti dedicated the treatise *De pictura* to Brunelleschi in 1435; Piero della Francesca wrote the *De prospectiva pingendi* and *Libellus de quinque corporibus regularibus* at the end of the century; Luca Pacioli drew much from this work by publishing the *De Divina proportione* in 1509; Jean Pélerin completed the *De Artificiali Perspectiva* in 1505; Albrecht Dürer built and experimented with perspective machines and in 1484 painted his own self-portrait at the mirror by silver-tip on paper [5]. He was only thirteen.

Far from wanting to make a complete examination of the many treatises published during the Renaissance, it is still worth remembering how the history of modern perspective is conditioned by the use of the flat mirror and how this instrument has become an integral part of portraiture. In fact, the same authors of perspective treatises wonder about the human body measurement, with particular regard to the geometry of the face. For example, Piero della Francesca dedicates the third book of *De prospectiva pingendi* to the measurement of bodies and focuses on the most complex figure to be represented in perspective, the face, and perhaps he even portrays himself as an example. The first operation is the representation of the orthogonal projections of the head, which is subsequently sectioned with parallel and orthogonal planes in order to obtain a grid of curves whose points become object of measurement and are given by the intersection of the visual rays that depart from a projection center [6-7]. The definition of the method allows him to obtain infinite configurations, ranging from orthogonal

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Giovanni Careri, "L'artista," in *L'uomo barocco*, ed. Rosario Villari (Roma-Bari: Laterza, 1991), 342-343.

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James Hall, *L'autoritratto. The Self-portrait. A Cultural History*, 142-143.

to oblique perspectives, to draw farther faces, taken from the bottom up and vice versa. In the proposed model the front view apparently adopts the laws of symmetry, clearing the ground to the study of human body proportions and harmonic relationships, introduced by Leonardo da Vinci in *Uomo vitruviano* (Vitruvian Man) and in his *Trattato della Pittura* (Treatise on Painting) (1498); by Luca Pacioli in the study of head proportions in the aforementioned treatise; by Albrecht Dürer in *Vier Bücher von menschlicher Proportion* (1528), and by many others.

It is easy to deduce that the methods of architecture representation have governed both the proportional and aesthetic canons of the artefacts, as well as the features of those who designed and experienced them in different eras. Thus, the presence of the Vitruvian man has deified the concept of measurement of the 16th century space, becoming a model to which aim and relaunching the inhuman image of a perfectly symmetrical body.

The anthropocentrism—that influenced the Renaissance universe—evolved into the self-referential immensity of the Baroque artist, who used to mix with nobles and men of power when portraying them in his representations, unveiling the face of the scene director. This is the case of Diego Velázquez, who in 1656 portrayed the Spanish royal family in *Las Meninas*. This painting leaves room for different interpretations, certainly orchestrated by the artist and announced by the deceptive reflections of the mirrors in the room, which interrogate the viewer making him feel part of the fiction. In this way the self-portrait lures the gaze of the other, making him feel within this sort of *tableaux vivant*, in "a form of representation that no longer finds its foundation in imitation but is given as pure representation. A representation that has a value as it produces positive, pathetic or cognitive effects; capable of finding an adhesion, and no longer for its analogical correspondence to a pre-existing stable reality"[9].

Generally, there are many 17th century artists who play to integrate their directorial presence in the works produced, exalting the work spaces in which they act wearing the best uniform suitable to be shown also from behind, as Jan Vermeer does in *The art of painting* (1666-1668). Regarding Vermeer's oil painting, James Hall recalls that the painter's studio was small and placed on the top floor of his house; and in any case the work clothes could not be elegant[10]. But yesterday, like today, fiction benefits from self-esteem and undergoes the physicality of the protagonist to the performative act of the design of his image, which is distorted by the mastery of the means available to build it. When the face performs, both in a picture or in a photograph, the author tends to modify its connotations while maintaining characters of verisimilitude. Moreover, the artists and scholars of the twentieth century meditated on the canons
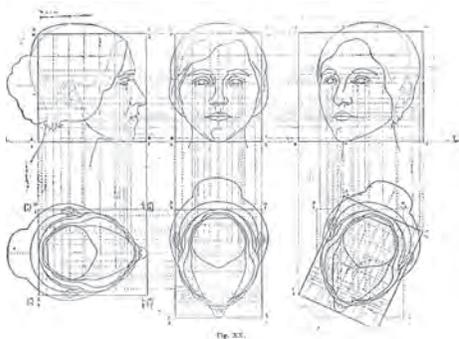
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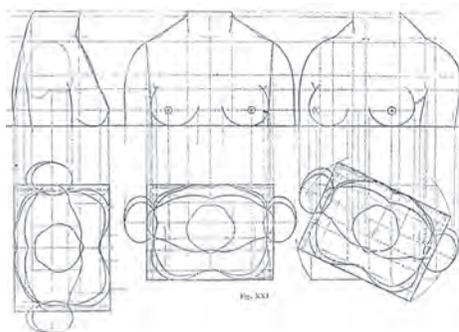
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Gino Severini, *Du Cubisme au Classicisme. Esthétique du compas et du nombre* (Paris: J. Povolozky & Cte, 1921), p. 71.

8, 9 Gino Severini, orthogonal projections, in *Du Cubisme au Classicisme. Esthétique du compas et du nombre*, 1921. Paris, J. Povolozky & Cte

of beauty and their objectification in terms of size and proportion.

For example, Gino Severini, without claiming to make a real treatise of descriptive geometry—as he clearly said—focuses on the study of harmonic relations inherent in nature and draws the orthogonal projections of his wife Jeanne's face and bust, published in his *Du cubisme au Classicisme* in 1921. In terms of his method, he declares: "[...] Because each section is the result of a common measure, of a single relationship that regulates the whole body, by making the same operation for each section, in the end the parts must coincide perfectly and [errors] are close to a fraction of a millimeter. So, I rotated by 25° the head taken as an example, then applied same rotation to the bust and I had no trouble in putting the head on the neck, then the arms on shoulders and so on. In this way the body is built piece by piece, like a machine. When all the parts are arranged with love and precision, then they are reunited, each having its function, and everything is perfect"[11] [8-9]. Severini's final considerations echo the rationalistic model of automation, intended as a solution to every problem. If, according to him, the construction of a human body is like a machine, two years later Le Corbusier uses the same arguments but substitutes the body with the house, intended a machine for living, as argued in *Vers une Architecture* of 1923.

In his essay *Il volto e l'architetto* (2008) Luca Ribichini focuses on the correspondence between the geometry of the face and the architecture of the *Savoye villa*, demonstrating how the Platonic ideal in the 1920s merged into the direct dialogue between painting and architecture that, for Le Corbusier, determines the compositional processes in a continuous plot. The modern human body synthesized within the features of the modulor dictates measurement and proportional relationships. References to proportion, the golden section and the principles of geometry, are ascertained in the theories of Matila Costiescu Ghyka, who in 1931 publishes *Le Nombre d'Or*. In his book, the Romanian mathematician—similarly to what Severini did—uses the image of his wife to legitimize the foundations of his theories, in this case focused on the study of the golden section. The photograph of Miss Helen Wills Moody's face is then subjected to the geometrization of a system of regulatory layouts, which, according to Ribichini, reminds one of the ground floor plan geometries of Villa Savoye.

As for the subject of this experimentation, Ghyka describes the face of his wife, stating that "it has the rare property of revealing a theme 'related' not only to the golden section but rather offers an 'ideal' canon strictly modulated for this purpose. It is not difficult to find also in the living 'microcosms' [of the photographs and the geometries found in them], as in the characteristics of the Olympic

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Matila Costiescu Ghyka, Le Nombre d'Or.
Rites et rythmes pythagoriciens dans le
développement de la civilisation occidentale
(Paris: Gallimard, 1980), p. 59.

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See: www.cindyjackson.com.

tennis championess, the Platonic symphonies resulting from the inscription in the sphere of regular polyhedra and of the alternating pulsating budding of the starry polyhedra starting from the dodecahedron [...], geometric paradigm of the harmony of the Cosmos"[12].

The geometries and *mathematic* of the face are connected in the Cartesian research of aesthetic perfection by Ghyka, however the principle of totalizing beauty, based on the rules of harmony and proportion, runs through the different periods of the history of art and arrives to us, after the desire to take the features of the perfect face prototype. This is independent from our original features, because the cosmetic surgeon can certainly be more generous than Mother Nature.

The American Cindy Jackson[13], for example, underwent fifty-two interventions that allowed her join the Guinness World Records in 2011; her inspirational source coming from the observation of her Barbie collection in 1977. Jackson's transformations have evolved, and are all documented on the Internet: they speak of a designed image that is in want of overcoming the wear and tear of time, proposing itself as a reference model, so much so that today she is a successful testimonial and consultant for body care and risk prevention of cosmetic surgery. Today, the body designed for its transformation has to deal with an imaginary self-portrait that mirrors an aesthetic ideal to be achieved and personified, since it is still a temporary image that does not rise to temporal steadiness. Moreover, aside from social expectations, we can say that technological advancements and innovations in the medical field support the reference aesthetics and image with which we relate to others is precisely what is brought in question. Thus, the aesthetic perception of the self and its performance can't be conceived as the results of a path that necessarily leads to the definition of a univocal synthesis image. If in the past the analogical instruments allowed one to translate the connotations of a re-adaptable face in bidimensional drawings, the current technological wave aims on at physical, and digital, constantly evolving presence. Every self-portrait speaks to the era when it was produced and can be compared to ideas of temporary makeup and the prosthesis, to the design of the tattoo covering the skin, to the technologies that coexist with the body, both exogenous and endogenous, to the subcutaneous grafts, to more or less invasive transformations to which we subject it.

Body artists have worked in various ways of transforming identity and the human Body, but since the 1920s a specific attention to the *bionic* and *post-human* has paved the way for some extreme practices. In 1991, the British artist Marc Quinn made self-portraits with his own blood, frozen inside transparent casts, and every five years produces a new sculpture to document the processes of his aging; during

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10, 11 Marzia Avallone, *In Carne Sancti - San Sebastiano II*, photographic performance, La Pelanda – Macro, Roma 2017. Assistant: Eugenia Monti (Darkam), Photo credits: Marta Petrucci

the following decade the Australian artist Stelarc has experimented in *The Third Hand* project the insertion of an additional mechanical arm, governed by stomach and legs muscles in the act of writing the word *Evolution* obsessively; the French artist Orlan distanced herself from Body Art, undertaking the road of *Carnal Art* as a way to reflect on the concept of beauty's slavery. For *The reincarnation of Saint Orlan*, since 1990 the artist has undergone a long series of surgical interventions to personify the reassuring iconic models' aesthetics of the figurative arts, then she decided to change course by having two silicone implants on the sides of her forehead. This reconsideration should denounce certain intolerances towards popular beauty standards, but the persistence of the prosthesis coexists with her current image, historicizing a face that displays many years less than her age.

Albeit oriented towards performing arts, the young artist Marzia Avallone arrives at her 2017 work *In Carne Sancti* through less invasive practices. In this case the construction of the self-portrait is compared to the staging of a possible other-than-self, in a wide-ranging project that includes seven interpretations of the martyr's figure according to an interpretative coding oscillating between classical iconography and performative action and is intended as an act contaminating the whole process.

In Carne Sancti - St. Sebastian II moves from the assumption that in medieval texts the figure of the martyr was described as the one who raised our human condition [10-11]. Stripped by a multitude of arrows and therefore subjected to the sufferings of mortal life; San Sebastian is an *exemplum*. As a symbolic image of the tormented body, he is not only the exaltation of one's own suffering but also, he who masters the resistance to arrows, pain and death. In the artist's interpretation, the stress is placed upon the concept of pain and its overcoming: it is not a suffering body to be exposed but one that is an accomplice and participates in the action which frees itself from the narrative precepts that have accompanied it during the very long path formalized by Christian iconography. In the performance, an arrow is sewn on the chest by expert hands, using needles and suture thread. It is an isolated, autonomous and ostentatious embroidery that outlines a short circuit among body, envelope and imposed sign, which can be recognized as a distant reinterpretative memory trace.

In this sense, it is possible to affirm that the self-portrait, today as much as yesterday, actualizes the return of the *repressed* and is a mode of the *uncanny*, intended as Sigmund Freud defined it in *Das Unheimliche*, in 1919. Thus, the image that we embody does not necessarily reassure us, and what we recognize as familiar can make us uncomfortable, because the face is "an instantaneous occurrence of multiple heterogeneous

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Patrizia Magli, *Il volto raccontato. Ritratto e autoritratto in letteratura* (Milano: Raffaello Cortina, 2016), p .23.

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Stefano Ferrari, "Le dinamiche del perturbante nella psicologia del ritratto," in *Il volto, il ritratto, la maschera*, ed. Elisabetta Baiocco (Siena: I Quaderni, 2000), 59-73.

16

For deepening: Massimiliano Ciammaichella, "Tożsamość Cyfrowa. Autoprezentacja w Second Life," *Autoportret* 1, no. 52 (Winter 2016): 68-73.

17

secondlife.com; highfidelity.com.

18

Erving Goffman, *The Presentation of Self in Everiday Life* (Edinburgh: University of Edinburgh Social Sciences Research Centre, 1956), p. 10.

19

See as example the following software list, any are free: *Colmap* (colmap.github.io), *Micmac* (micmac.ensg.eu), *3DF Zephyr* (www.3dflow.net), *Recap* (www.autodesk.com), *Agisoft PhotoScan* (www.agisoft.com), *PhotoModeler Scanner* (www.photomodeler.com), *ContextCapture* (www.bentley.com), *RealityCapture* (www.capturingreality.com).

12 Clara Accebbi, *She comforts you*, self-portrait, 2018

events. In fact, its morphological conformation is constantly tested by the inner movements that modify its expression"[14]. According to Stefano Ferrari, for the artist both portrait and self-portrait trigger a projective identification mechanism in the chosen model[15]. It comes back the problem of self-identification in the produced image, of the other-than-self-empathizing, of the double and of the mirror of deception or reality.

Then, what does the self-portrait mean to all of us?

During the last twenty years we have found ourselves communicating with others through filters, more or less truthful, capable of speaking about us independently from our physical presence. The acting skills that are proper for each of us are often conveyed in forms of telepresence that require all of our skills as builders of our double through digital representation tools capable of portraying us in a very short time. We can then interpret our role by means of 3D digital avatars, immersing ourselves in the different virtual worlds of the Internet. We generally design them so that they assume our features, molding them around desired aesthetic ideals[16].

Second Life and *High fidelity*[17] are only two among many performance spaces where we can go on stage through moving images that simulate attitudes, poses: propensities to credit self-complacency based on others' approval. After all "[…] When an individual plays a part he implicitly requests his observers to take seriously the impression that is fostered before them. They are asked to believe that the character they see actually possesses the attributes he appears to possess, that the task he performs will have the consequences that are implicitly claimed for it, and that, in general, matters are what they appear to be"[18].

As for the perfectible three-dimensional clones, we can equip them with image-based modeling tools capable of translating the spatial coordinates of different photographs that can simultaneously capture a body to easily generate an avatar and provide it with a high-resolution texture[19] [12]. But the photographic portrait, interpreted in the static fixity of the synthesis image of the face, is one of the main business cards through which we introduce ourselves in social networks and in other contexts. Those who assume to design the perfect selfie usually employ his or her smartphone according to a corollary of postural attitudes that immediately declares social status. The use of filters and manipulatory tools for every shot reveals the failure to accept oneself through the features we would like to assume, but do not possess. In these cases the fictional manipulation of a body, which is subjected to the longing of showing itself, crashes down through the exhibition of the ineffable retouching of its functional insecurities.

In conclusion, we have seen how the story of the self-portrait begins its narrative from the desire to show oneself and to underline the social status of belonging. If in the Middle Ages the amanuensis and miniaturists felt the desire to immortalize themselves in their works to emphasize the importance of the craft—and the artists followed the script of religious faith obsequiously in the acts of prostration of the self—, the Renaissance man defined himself by the measure of his own anthropocentric universe: physical and spatial. Differently, the 17th century counts upon the deception of the actorial mise-en-scene.

In all cases, the control of one's own image was entrusted to the reassuring projective rules of mirrors capable of controlling their measure, but also of distorting expectations. Simultaneously, *Descriptive Geometry,* understood as a science of representation able to describe the morphology of artefacts, independently of its mere nominal 19th century origins, has encoded in restitutions the connotations of someone who has been submitted to its rules.

Our contemporary world has accustomed us to instruments of representation capable of simulating the third dimension of our real physical belonging, and the construction of the self-portrait has become a desire within everyone's reach. Today the verisimilitude of the mirror image—and the desired one—has enslaved us to the manifold identity transformations that the body is able to realize.

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Wayfaring through Poem-Drawing in Spatial Design
/
Correspondence as Self-Altering Along Place-Making

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WAYFARING AS THE 'SOFTBALL' METAPHOR

A person can move on foot from one place to another in three ways: 1. by gazing at (dissolving within) the surrounding as isolated—separated—from the self; 2. by walking with eyes wide closed, concealed in one's own inner thoughts; 3. by establishing a dialogue with the surrounding through sensorial listening and reflective responsiveness. Only the third way can be said to constitute a *real journey*, since the mode of displacement is transformative for both interlocutors: the traveler and the surroundings. This analogy can also be perceived as a metaphor for the research journey, in which human beings generate and integrate explicit and tacit knowledge. The anthropologist Tim Ingold names this journey "wayfaring": "combining movement and attention" in the process of discerning the outside world through inner means of perception and evaluation (2016|2007, 16).

In a lecture titled "The Art of Paying Attention" (2017), Ingold illustrates the difference between scientific and artistic approaches. The first approach is compared to the *hard-ball-metaphor*: a hard ball hits a glass surface until it breaks to pieces. Then, scientists call this "a breakthrough"; they treat reality as a "series of resistant surfaces" which should be tortured to reveal secrets (Ingold 2017). On the contrary, the soft ball "takes the properties of the surface" while the surface deforms according to the intensity of the touch: a kind of "mutual responsiveness and correspondence" occurs (Ingold 2017). The hard-ball isolates the object of research from reality by violating and devaluating its nature, while remaining rigidly unchanged itself; the soft-ball develops a dialogue with the wider context of the surface, while allowing itself to be modified by the touch. The softball metaphor exhibits artistic practices, but also the "wayfarer" mode of being and research.

Why is the softball metaphor important for the artistic dimension in architecture? The softball approach can be named a *wayfaring* through the design process. It is both sensitive discernment—the understanding of spatial qualities (through experience)—and a poetic reviving of their relevance in a present context (through imagination). Poem-drawing is a syntonic mode of artistic thinking-through-doing

1

Seamon uses the term "person-world intimacy" as a metaphor for the phenomenological research, according to which the person and the environment constitute an indivisible whole. This implies that the research relies heavily on the person's *attitude*, *receptivity* and *responsiveness*.

2

Ingold uses Polanyi's pyramid to visually demonstrate an understanding of tacit knowledge as the underwater part of a sinking pyramid, an immovable static deposit placed under the *explicit* knowledge (placed above water). He suggests the *archipelago* metaphor as a more dynamic visual alternative.

in spatial design. It works as a softball, a transformative tool that interweaves the paths of the wayfarer and the place of research. It cultivates a will to understand a spatial situation in depth and to carefully translate spatial values into guidelines for further design development. In research-through-design, it works as a "transducer": a translator and generator of *movements* that come together as a "bundling of affects" named "enchantment" (Ingold, 2016). Thus, a *spatial enchantment* would mean "grabbing" the attention and offering "a path" of that attention that one can follow, in one's own way, "in an affective correspondence of movements" (Ingold, 2016). It demands wayfarer's awareness in recognizing an existing *chant* in the world, which is later translated into an imagined place, pregnant with new enchantment-possibilities.

Poem-drawings are knots on the way towards such enchantment, although as processual modes they are works influenced by and/or evoking enchantment in themselves. The aim of this essay is to emphasize how their epistemological softness encourages: 1. a serious immersion into wayfarer's embodied/tacit knowledge (not only explicit knowledge) as core factor in design; 2. an integration of what is sensed, felt, known, desired and created through the self, in an authentic wayfaring with curiosity and care for the "person-world"[1] interweaving (Seamon, 2000, 5). For that purpose, it is important to stress from the very beginning that we refer to "embodied knowledge" not as the lower part of Polanyi's pyramid[2], but as "currents of water flowing around" an "archipelago of islands" – the accumulated data that form a network of static judgements and opinions (Ingold 2016). Hence, embodied knowledge is a field of action where poem-drawing allows a vertiginously turbulent review of what is considered "known" and "familiar". They work like a disturbing "eddy", or "vortex" (Ingold, 2016) that makes one look at the spatial context of the design task as seen for the first time.

KNOWLEDGE THAT GROWS FROM THE INSIDE: INGOLD'S ANTHROPOLOGY AGAINST OBJECTIVITY

To understand the relevance of poem-drawing as a wayfaring tool in spatial observation and re-creation, it is necessary to introduce the main conceptual guidelines in Ingold's perspective of what *thinking-through-making* or *research-through-design* should contain as modes of understanding the world and the self as an inherent part of that world. Let us elaborate a few of them by contextualizing their relevance to the poem-drawing wayfaring.

3

The process of making, transformation, "the activity in which a person brings something into being that did not exist before" (Polkinghorne, 2004, 115).

Truth Against Objectivity

The core value of any research should be the *"appeal for truth"*, not use-fulness or pragmatic applicability (Ingold 2017). This concept of truth expands beyond the rigid obsession with accumulated data, isolated from the experiential and social context. In a similar manner, Alber-to Pérez-Gómez introduced the term "poiesis" to explain the way in which human beings (unlike animals) *adapt* to the environment; but this adaptation is always "aimed at *more* than preserving life" (2006, 6). In research environments that are sensitive to "poiesis"[3] and arts in spatial design, one's *search* for truth and one's *tying* to the world, should develop as "an antithesis of pragmatism" (Tarkovsky 1989, 40). Thus, the means for finding a personalized way in the creative process constitutes a "meta-language" that helps people "impart information about themselves and assimilate the *experience* of others" through spiritual bonding far beyond the level of physical crisscrossing (40).

But what is the concept of truth in such a poetical approach to the built reality? According to Ingold, truth is a "*unison of imagination and experience*" in a "world in which we are alive and the world is alive to us" (2017). As such, truth depends largely on our "full participa-tion" in the world: in order to be truthful, all human knowledge must "grow from the inside" with our "participatory and observational in-volvement" in the places we are moving through (Ingold, 2018). While objectivity *outside the self* is core value in scientific experiment (aiming to "test" and "trick" the world), re-creation of truth *through the self* is the core value of the artistic experiment ("an experience enacted") (Ingold, 2018). This statement echoes Tarkovsky's rebellion against the abstract notion of order: his poetics of memory and logic of dreams call for 'associative linking' and both "affective and rational appraisal" by the spectator, making him "a participant in the process of discov-ering the life" happening in the artwork (1989, 20). Another anthro-pologist stressing this difference in a similar way, is Ernest Cassirer: in his view, while artistic approaches offer an "intensification" of reality, scientific views appear as "abbreviations" of reality (1994|1944, 184).

Poem-drawing allows the dialogue between author's *experience* and *imagination* to become core ingredient in discovering the "true" way in design. It disturbs and re-creates both explicit and tacit experi-ence, the memory of emotional experience and creativity in cycles of two (non-linear) phases: *moments* of enlightenment (duende/epiphany, a heightened state of emotion, expression and authenticity) and *peri-ods of "elaboration"* of that enlightenment (Carafoli, 2016, 412). What makes poem-drawing an important alternative mode in the search for truth through the self, becomes clear only when it is observed in

relation to the objective (conventional) tools of research and design: a knot along the way, where different modes of knowledge are integrated, it offers a reflective view on the journey in a certain site-specific and time-specific moment. Poem-drawing grasps a relevant emotional condition, but its contextualization and integration in the design process occurs as a constructive dialogue between the subjective and objective dimension in architecture. Poem-drawings help the architect to observe the design task not as a thing separated from himself/herself, but as co-creative field of transformative forces moving through him/her, molding the path in each moment of the process.

Wayfaring as Attentionality Against Interaction as Intentionality
In a lecture in 2016, titled "Training the Senses", Ingold tries to emphasize the importance of response-ability as a core skill in wayfaring: a capacity to "go along with whatever is occupying your attention" (2016). Two preconditions for wayfaring are needed: 1. sensitivity in concentrating your attention in deeper levels of reading and interpreting the qualities of the place (an eddy, a knot); 2. *going along* through time, instead of *leaping across* points (closed circles) with blinded senses. The opposite of wayfaring is interaction: "back and forth" movement between "intentional beings" that share energies outside themselves, using the hardball metaphor (2016). Wayfaring, on the other hand, cultivates a kind of correspondence: "two beings going along together and *attending* to one another" (2016). While intentionality stems from the representation of things, attentionallity moves *through* things: it flows through and around them, pervading them with observer's attention and presence. Hence: a self-altering dialogue is being established. It is not only about "corresponding" between the parts included in this dialogue, it is also about *differentiating* themselves from the other. This process of differentiation resembles Simondon's or Jung's *individuation* process: never complete, always on-going, a life-long transformative process of self-discovery and self-altering.

Additionally, there is a difference between the anatomical human body and *the body of attention*. An illustrative example of the second concept is the process of hearing: "the body is stretching towards" the sounds coming from the outside, so it becomes a "bundle of sensations" that spread in different direction, intertwining inside the listening subject (Ingold 2017). This is a much different approach than *explaining*: "in order to perceive work as art, you have to let it be in you in its presence", while you, on the other hand, are attending it from the inside by paying attention to that presence (2017).

A processual design tool, poem-drawing can cultivate an acute *attention* and *dialogue*. It is modifiable according to the innerness of

4

A representation of a phenomenon into an understandable information, a fact, extracted from the wider complexity of its existence. Jung describes how extreme concreticism "sets too high a value on the importance of facts at the expense of the psychic independence of the individual": it makes one "grow together" with the object of perception as result of non-articulated sensation (1963, 360-361). An extreme abstraction is the very opposite. In spatial observation, a rhythmical *balance* of abstraction and concretization would mean a rhythm of *defamiliarization from* and *immersion in* the environmental problem, a sequence of repetitive "small deaths" of one's previous conceptions ways of *learning to* see, think and create (Peterson, 2018, 223). In this context, *datum* is an inevitable human reduction of reality; its intensity depends on how cultivated is one's resistance towards extreme abstract or extreme concretistic attitude in reading and translating places.

the architect, and the time-spatial context of the design task. It meets
the core requirement of phenomenological research: the researcher
must *adapt* his instruments according to his or her own truth and the
"nature and circumstances of the phenomenon" (Seamon 2000, 11).
A poem-drawing helps one prepare his or her being for listening to
the current whisper of a specific place on different levels. The design-
er *corresponds* with a place of intervention not only by sensing and
contemplating with its appearance from the inside, but also re-imag-
ining this whisper in an appropriate future scenario. He is *attending*
the whisper by inhabiting its presence in different time-frames.

Method Against Methodology: Integration
Against Accumulation of Knowledge

Ingold uses the word 'method' not in Feyerabend's connotation - a
reductor of "the richness of being" (Feyerabend, 1999). On the con-
trary, he refers to "method" as a transformative tool that allows going
along with things, taking its shape according to the way the things
unfold in the moment of attention. Unlike method, *methodology* is an
"enemy of correspondence": it works by "keeping distance from things"
for the sake of pure "objectivity" (2017). Methodology immunizes the
object of attention against (out of) its presence, decontextualizing its
ongoing life: the extraction occurs in an insensitive way that leads to
an obsessive "superstitious overestimating of naked facts" isolated
from their relevance in the real world (Jung 1963, 361). Methodology
does not offer any integration of "naked facts"; it accumulates them
in an endless assemblage of outwardly articulated conjunctions.

  Ingold's distinction between method and methodology leads to
analogous distinction between *quality* and *datum*. *Quality* is the way a
thing "reveals itself to you, becoming a part of your perception", whereas
datum[4] is the moment when you transform that quality into an abstrac-
tion by "dividing a world of process, of flow" (2017). In tracing spatial
values, how is it possible to reduce such violation of the life process of the
observed phenomenon to a minimum? How to interpret a spatial quality
through intuitive wayfaring, avoiding dead ends of abstract notions of
order? "Pure objectivity is as illusory as pure transport … This illusion
can be sustained by suppressing the embodied experience of place-to-
place movement that is intrinsic to life, growth and knowledge" (Ingold
2016|2007, 105). The hardball approach generates this suppression,
transforming the "erotic space between the known and the unknown"
into a dry assemblage of conjunctions (Perez-Gomez 2006, 69).

  While observing the poem-drawings of renowned architects, we can
understand their design decisions and spatial philosophies in a depth

that goes beyond any methodology or principle (Kulper, Hejduk, Le Corbusier, Van Den Berghe, Holl). They exhibit the architect's discipline of everyday spiritual growth, life and knowledge creation; they trace the creative process by exhibiting moments of "progressional ordering of reality" (Jarvis 1997, 69 qtd. in Ingold 2016|2007, 91) or as "integration of knowledge along a path or travel" (Ingold 2016|2007, 91).

VARIETIES OF SPATIAL WAYFARING
THROUGH POEM-DRAWING

Poem-drawing can be considered to open *intimate windows* between the self and the observed phenomenon (architectural or urban setting) because it is, in itself, a "softball" tool which tries to trace *life itself*, as felt by a wayfarer. Translating the movements of life, which never have a clear final meaning, it aims to "clarify" an experience (felt, desired, designed) by grasping its flow in a creative *knot* in the design process: "the threads from which it is traced are lines of wayfaring" (Ingold 2016|2007, 104). Depending on the time period in which the poem-drawing appears, it frames the interweaving of different threads of knowledge: the interweaving varieties define influential reflections within the design process.

Generally, we can distinguish three types of influence: 1. *emotive (instead of descriptive) re-reading* of the place (cultivating perception through the self); 2. *poetic generation of spatial ideas*, free from an overtly precise linguistic and visual architectural language; 3. *reflective defamiliarization* from routine perception – artistic procedure of creating a resonance between otherwise disparate images, enhancing of the perception of the familiar through cycles of distancing from and immersing in the design-related problematique. But these "types" – they never occur linearly; more often, we use combination of two or three of them, according to the complexity of the specific Path-finding. Analogously, we exhibit three types of wayfaring through poem-drawing: the design examples via case studies, and the author's personal works.

Re-Reading Places Through the Present Self:
Wayfaring as Concretization / Topo-Empathy
We use the word "re-reading" to stress the importance of vigilant observation of the place of intervention. It means re-establishment of the tie one has with a place by moving further and closer to it, *inhabiting* with fresh senses, fully aware of inner and outer *change*. Here, poem-drawings work as instants of grasping such *inhabitation*, transformative participation and awareness. They enhance, trace and develop two states: *being-in-love condition* (passionate commitment) and
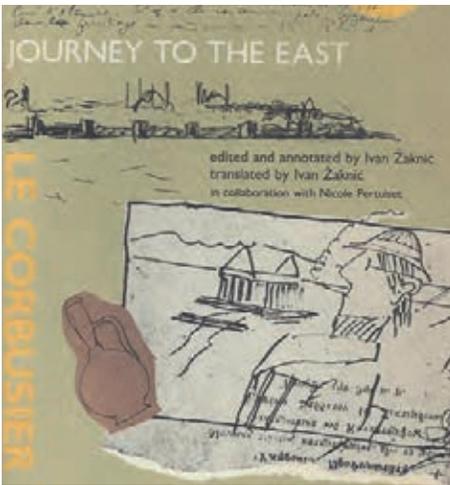
1   Page cover of *Journey to the East* by Le
     Corbusier, translated by Ivan Žaknić,
     reproduced courtesy of The MIT Press

creative-process-condition (interpreting meanings through creating). Both reflect an intensified capacity in the architect to discern and re-create *ties, metaphors, analogies* between seemingly non-connected qualities.

Re-reading places is most intensive at the beginning of the design process: collecting photographs, stories, maps, technical drawings, interviews – the entire body of extracted information that should be filtered through a personal meshwork of understanding. The moment when rough data transforms into relevant knowledge, is when we include *empathy* as a mode of *understanding*: seeing through the skin of the users, perceiving spatial entities as human beings (living Otherness), developing a will to understand a spatial problem from different view-points. And, it is not always concerning a *spatial* design problem: often, architects find journeys, artistic and cultural experiences, books and non-architectural references a source of inspiration that makes them displace their viewpoint and to see the world in the light of the new design task. In all cases, the architect's inner self is the filter through which the threads of influence interweave and generate meanings that create an order out of what is perceived as a myriad of impressions.

For example, Le Corbusier's "Journey to the East" (2007|1911), [1] is a travelogue of the young architect, a testimony of wayfaring – with-out *intention* (not design-created observation) but with full *attention* towards reading the different layers of the environment he moved through. Only later did these notes of interweaved verses and draw-ings become core guidelines of his vision of the new architecture. These early "poem-drawings" can be considered tacit knowledge; their importance became visible when the author translated their spatial qualities in his design solution for the contemporary world. Le Cor-busier himself wrote "…to draw… to trace the lines… handle the volume, organize the surface… means first to look… to observe… to discover" (cited in Bolles+Wilson 2011, 20). The lessons in observing architecture are later applied in his holistic notion of *place-making*.

Another example of re-reading a place is revisiting the memo-ry of emotional experiences related to their past appearance [2]. Jo Van Den Berghe opens a lecture at KU Leuven (2015) by reading a poem dedicated to his grandmother. Then, he exhibits a body of re-search concerning the house in which he grew up with her; since the house does not exist anymore, wayfaring is done *through* his em-bodied knowledge, lacking any dialogue with the other "users" of the house. By obsessive writing, re-drawing and recreations using working models, he succeeds to recognize spatial fragments that are embedded in his inner self as unconscious patterns that influence each of his designs. Similar research has been made by the author

2

5

A degree of abstraction that is not to extreme
and harmful in the devaluation of the object,
that is not ignorant towards its core values,
but builds upon their presence in reality.

3

2   Van Den Berghe, drawings excavating the
    memory of the old home. Screenshots from a
    lecture at KU Leuven, 05.02.2016

3   A poem-drawing in the first cycle of the
    trialogues in the research "Tracing Spatial
    Values Through Poem-Drawing" (Bogdanova,
    Spasevska and Nikova 2018, 129-143)

in 2018: inspired by Tarkovsky's *Mirror* (1975) (the interweaving of Andrey's cinematic image and Arseny's poems), an attempt to investigate the embodied memory of the grand-maternal home was done through poem-drawing (Bogdanova & Zupancic, 2018, 222-234).

The re-reading of places can revive historical spatial values through their contextualization in questions of the present. This is important because one cannot trace the values of a place without taking into consideration the stories of the people who were interwoven within that knot at different time periods. Here, we are not interested in *historical facts* or *accumulated chronological data*; on the contrary, we are interested in *translating* blind sensations and information into a living relevant ingredient of the present. To create this healthy degree of abstraction[5], empathy and imagination are needed. As Alberto Perez Gomez has stated, "Whereas history recounts real facts from the past, poetry (fiction or drama) opens up the future by transcending the first order of reference to reality. In other words, fiction reveals what is essential for humans in recognition of our mortality and transcendence, and thus opens up potential realities for culture" (2006, 152). We need to bring mere data into presence by living through the skin of another human, plant, animal, from another time-space. We can have a visionary and hermeneutic approach towards the spatial values that surround us, only if we are able to integrate our own experiences (and dreams), our compassion with others' experiences (and dreams) and the less-human features in our surrounding into a story which is meaningful and understandable as experiential truth.

Figure [3] is an example where personal and borrowed memories are integrated with a poetic interpretation of facts in a spatial narrative. This is done through the skin of an imaginary character: a young pregnant woman from 1944. The aim is to discern how (and if) spatial values could vary through time in the culturally complex place of research: Ohrid city. Simultaneously, poem-drawings were generated from two other co-researchers who developed stories through two other imaginary characters: an old lady in 2084 (dystopian scenario) and a 7-year old girl in 2018. By comparing poem-drawings from three time periods, we aimed to question whether it is possible to reveal which spatial qualities remain absolute, timeless, and derived from the specificity of a particular site. Figure [3] belongs to the first phase of the trialogues: re-reading the places by wayfaring through the memory of (lived and imaginary) emotional experience.

Scenery so modest
as so hardly constitute
architecture.
The idea is to create
within everyday life
this kind of
personal-scale openness,
a product of
individual experience:
an accumulation
of such mini-landscapes
in different places.

/ Ishigami 2018, 21.

Landscapes that were originally here,
but never met,
mix and mingle with each other.
Making a new natural environment,
that was not in the original
natural environment,
without using anything new,
and without discarding anything
that was here.

/ Ishigami 2018, 45.

4

4   Villas in Dali (author's photograph of the
model)

Translating Place Through the Present Self:
Wayfaring as Abstraction / Heuristic Observation

By *translation* of places we mean a *metamorphosis* from an existing
condition to an appropriate design proposal. Wayfaring here occurs as a
design-oriented reading of place and aims to conclude with a newly com-
posed spatial solution. To do this, a degree of abstraction of the spatial
quality out of context is necessary: the defamiliarization phase prevents
the observing subject from passively re-thinking the environmental
setting. This kind of *learning through doing* requires an "intensification
of all our energies" and our "fullest concentration" in interpreting the
perceived qualities into relevant ingredients of the *process* in architec-
ture (Cassirer 1994|1944, 210). "As soon as we fail to concentrate, and
we give way to a mere play of pleasurable feelings and associations, we
have lost sight" of the design process as living artwork in itself (210).

Whereas in re-reading places a sensitivity towards listening was
needed, here the requirements are more complicated – a sensitivity in
creational responding is a pre-condition for successful reading. Figure
[4] is an example of sensitivity in the search for the beauty in the natural
landscape. With minimum interventions between the stone megaliths,
Ishigami designed eight villas in Dali: the design proposal was based on
a previous painstaking examination of the properties of each stone as a
living being. Only small adjustments of the stones were done, whereas
the landscape permeates the villas as philosophy of life close to nature.
For this project, he uses poem-drawings to express the atmospheres he
desires to achieve with the new site-sensitive solution: "Walking the
site, physically sensing / small places amid the vast fields of boulders,
/ manageable, livable spaces were found. / These are joined to form / a
single large structure" (Ishigami 2018, 117). Through verses, the archi-
tect aims to invite the reader to look at the project by imagining his own
wayfaring through the place by encouraging an imagination of the first
person experience instead of looking at the drawings two-dimensionally.

Another example is Ishigami's *House with plants*, a poem-drawing
dedicated to that design proposal. Here, the author invites the reader to
imagine a never-finished world in which the desire—the imagination
of the transformation—brings an awareness of a new concept of archi-
tecture: the one that is different from "shelter" that keeps us separated
from the world. It softens the border between the inside and outside and
allows the nature, the snow, the sun, the rain to become a crucial co-cre-
ator of its being. This is one's way of freeing architecture when dealing
with the innumerable demands and challenges of this world: interpret-
ing it "more freely" and approaching it "more openly" (2018, 11).

The third example of a translation of spatial values into design

5a

5b
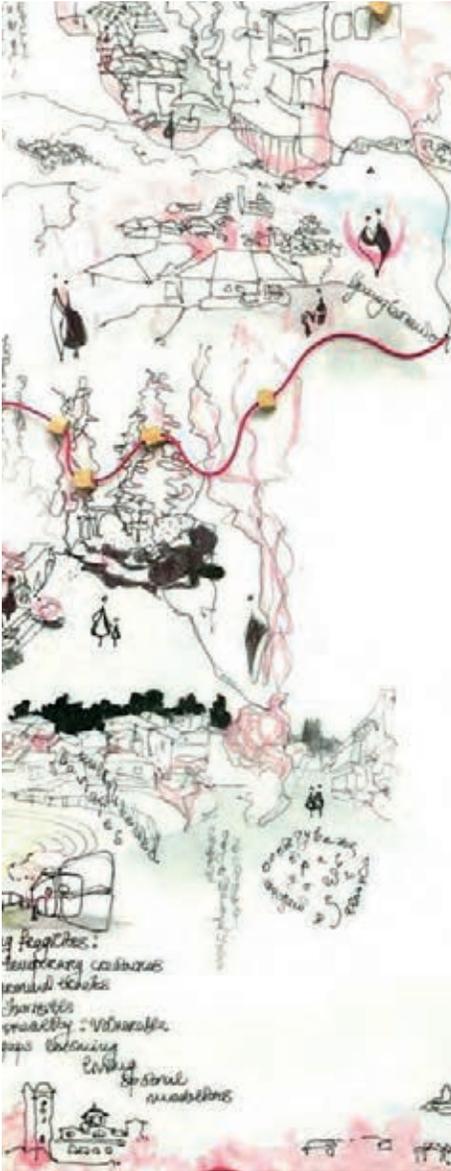
5a Map of wounded places (tracing paper layer 1)

5b Desired atmospheres (layer 2)

solutions is the Botanical Farm Garden. A landscape architecture project, it exhibits Ishigami's obsessive analysis of each tree as an individual, as an "old friend" who changed its place of living in a new meshwork of movements and relations. The task was to relocate a forest (a hotel-to-be-built location) in the adjacent meadow, in order to prevent cutting of the trees. Ishigami implements the history of the place by poetic re-thinking of its mythological past through the present: 1. long ago, it was a paddy field and a mossy forest; 2. today, there is a *stream* and a *sluice gate* recovered in the new scenario. Hence, a superimposition of "all the layers from past environments in the site's history" occurs (2018, exhibition guide). A poetization of existing qualities is developed through the sensitive re-thinking through design.

The last example of wayfaring through poem-drawing as a translation of site-specific spatial values in an urban design project is exhibited in [5]. After cycles of trialogues in re-reading Ohrid through three imaginary characters, site-specific spatial values are recognized, and then translated in each of the three design solutions; one being the re-thinking of a *mahalla street* (a pedestrian street in a densely organized traditional urban tissue) as a semi-public spatial entity that exhibits site-specific ways of human life.

Figure [5a] is a map of one of the chosen mahalla streets. Fragments in black "mark structures in decay", and the pink surfaces are green fragments "framing the pedestrian promenade" (Bogdanova, Spasevska and Nikova 2018, 140). Wounded places are traced and re-created into micro pedestrian squares: "neighborhood markets and semi-open structures as knots of socialization between the neighbors" (140). Figure [5b] represents a possible way of healing spatial wounds through desired atmospheres in perspective, section and axonometry: "hanging cradles oriented towards the city scape and the lake, pergolas holding creepers, vines and roses creating a filigree shadow above the benches, bird cottages in the treetops, urban yards and craft-markets connecting the promenade with the lower city visually" (140). The verses exhibit feelings we aim to bring with the newly proposed scenario: *"Floating temporary creatures above ground tracks…an invisible corporeality … he took me through a filigree embroidered by porous treetops"* (ibid.).

Place-Making: 'Alongly Integrated' Knowledge of the Inhabitant

As inhabitants of the world, creatures of all kinds, human and non-human, are *wayfarers*, and … wayfaring is a movement of *self-renewal* or *becoming* rather than the transport of already constituted beings from one location to another. Making their ways through the tangle of the world, wayfarers grow into its fabric and contribute through

6   Fragments of Le Corbusier's "Poem of the
    Right Angle" (2012/1953) © FLC-ADAGP
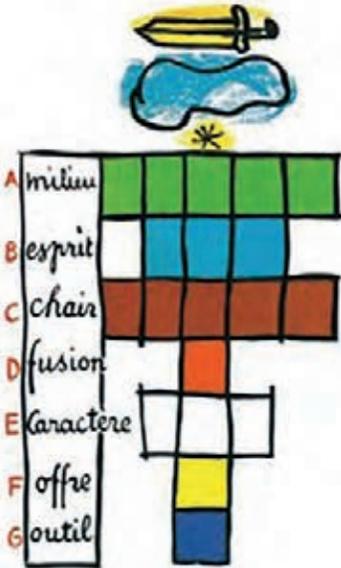
their movements to its ever-evolving weave. Ingold 2016 | 2007, 119

It is necessary to stress that wayfarers should be considered "successful inhabitants" of a place (Ingold 2016 | 2007, 104). They are neither nomads who fail to establish a meaningful tie with a place, nor settlers who tend to "occupy" a place due to their condition of "restricted horizon of a life lived only there" (104). This metaphor by Ingold reminds us of the previously emphasized need of the balanced rhythm of closeness and distance from the object of attention. Therefore, *inhabiting* would be a condition in which there is a corresponding growth and becoming between the wayfarer and the places he / she is stretching *towards* and *through*. This means that wayfaring is neither "placeless nor place-bound, but place-making" (104). Proceeding along the discernment of the world through simultaneous self-discovery, the wayfarer "knows as he goes", so the inhabitant knowledge is "alongly integrated" (ibid. 91).

Related to the designers working with poem-drawings as wayfaring "methods", their *inhabitant condition* allows coherence between what one feels, knows, remembers, recalls, reads, believes, desires and designs in a certain moment of the creational timeline. This way of daily reconstruction of knowledge through the integration of experience and imagination requires a sensitivity in constructing a *theory through design*, i. e., a vision of true architecture that is built upon a highly individual (even anarchistic) re-evaluation of paradigms, manifestos, or any other mode of collective thinking that harms the freedom of deep thought. Moreover, it asks for a meta-understanding of spatial qualities: an adaptable and transformable approach according to the spatio-temporal context of the design task. And finally, it demands looking at, moving through and re-creating of the world "as a project, not as a subject or object" (Jonas, 2018).

Figure [6] shows fragments of Le Corbusier's vision of truth, composed by poems and drawings standing close to each other. Although they do not overlap, their systematic distribution in a t-shaped table of content tries to make an order, a personal guideline of architectural behavior which is not ignorant towards the different situations in the time-space reality. The hermeneutic void of his poem-drawings invites the reader to participate in the co-creation of the guidelines; but unlike his "Journey to the East", here we are faced with a mature critical reflection of his own architectural beliefs and architectural practice. We can find the similar alongly integrated "theory" in John Hejduk's "Vladivostok" (1989). The book begins with an ekphrasis for Michelangelo's sculptures; the main story develops as a text-drawing *theater of mythology* where the main characters are urban elements animated as human beings; the book ends with a sequence of poem-drawings titled "Eros", radiating a spiritually pregnant aura. In both cases, when sensing

their prophetic character, we can say that *Vladivostok* and *Poem of the Right Angle* have for their authors the significance the *Brother Karamazov* (1880) has for Dostoyevsky: a testament for his clearest vision of truth as a holistically reflective thought on all his previous artworks.

DOUBTS AND LIMITATIONS – HOW TO MAKE A POEM-DRAWING CORRESPOND WITH THE LISTENER?

How does one read a poem-drawing aloud? What kind of performance is needed to express loudly the tie between the written and the drawing fragments? Can a poem be felt when read aloud without looking at the sketches as an inseparable part of it? We experienced these doubts during a presentation and exhibition, when asked to read aloud one poem-drawing.

Two "difficulties" were present: 1. it is impossible to understand a poem-drawing neither by listening nor by reading if it is decontextualized from the design process in which it has been created; 2. in poem-drawings where the lines between verses and drawings intertwine more organically, a delicate slowness in studying the silent piece of paper is required, whereas the verbal performance was almost impossible. This can be seen as a limitation of architectural wayfaring, but it can also be seen as a challenge to discern modes of expression different than the verbal in which a poem-drawing can be shared (dance, performance, pantomime…).

Poem-drawing as a *processual* mode in design can encourage *correspondence in co-creation* between designer(s)'s innerness and the outside environment in different moments of the design process. But poem-drawing, as a *representational* mode would demand an even more complex correspondence: the one between the author and the *listening* audience: "True knowledge can be experienced only through speech; it is never gained forever and must always be reactivated in the present" (Perez-Gomez, 2006, 66). In order to be understood and felt, a poem should be more *and* less than a poem at the same time: it needs to grow into a *correspondent* to drawing, a speaking light that reveals what is drawn from a distance. It needs to grow from an authentic language of expression and written/drawn communication into a poetically spoken language, a living word that makes the silent grain of wisdom transferable to other wayfarers. Otherwise, the wayfaring through the self in the design process will remain unheard, hidden in the silent hieroglyphic symbols. Wayfaring, a lonely process of self-altering through Pathfinding, becomes meaningless if it does not correspond to and interweave with the Paths of living wayfarers.

Additionally, the organic birth of poem-drawing involves

emotions, memories, dreams, beliefs, "unmeasurable" spatial quali-
ties and generates a chaotic matter without easily visible ties. To be
understood *in the context* of a design process, a rigorously systematic
way to exhibit their meaning, importance and placement in the pro-
cess is necessary. Otherwise, the wayfaring through poem-drawing
could not be *explained well enough to be understood as meaningful*
mode of doing architecture. This also means, that the recitation of
a *processual* poem-drawing could hardly make a clear sense with-
out a simultaneous theoretical reflection on the designed work.

/ This essay is elaborated as reflection on the author's PhD in progress
entitled: "Emotive Immersion Through Poem- Drawing in Spatial Design" at
the University of Ljubljana Faculty of Architecture, Ljubljana, Slovenia.

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Pedagogical Palimpsests and Cosmic Landscapes
/

Robert M. MacLeod

1

1   Harry Dean Stanton walking into the desert

This essay offers an overview of a recent advanced graduate design studio at the University of South Florida School of Architecture and Community Design. The studio began, as do most collaborative efforts, through conversation and correspondences between the collaborators. An interchange of ideas mapped through phone calls, emails and common aspirations. Rather than a defined project or building typology, the studio was organized around a specific place: Marfa, Texas. Marfa served as a place of work, a physical locale, a sensibility, and a purveyor of things mythical, wonderful and unusual. The essay also addresses pedagogy in terms of the inter-looping nature of an architectural education: the necessary redundancy and lineage across educators and academies.

CONTEXT

The 1984 Wim Wenders film, *Paris, Texas*, is a beautiful, if difficult, tale of loss. The opening sequence is set in the Texas desert. A boundless landscape with an endless sky. Motionless clouds hang as if strung from cables. The tiny figure of Harry Dean Stanton emerges, walking with some purpose through the arid landscape in suit and tie and red baseball cap. The laconic Ry Cooder soundtrack echoes the vast emptiness of the surroundings; though empty only in the sense of settlement. In reality, the landscape is one of great, jagged drama littered with the detritus of habitation: railroad tracks, two-lane highways and lines of telephone poles project a sense of the infinite. Rust and ruin dot the rugged red earth. Abandonment and melancholy align our protagonist with his context. [1]

    Paris, Texas was partially filmed in the Trans-Pecos region of "Far West Texas", a place of unsubtle inversions: arid deserts and dramatic mountainous; vast lands (over 31,000 square miles) and modest populations (27 people per square mile); the lush Big Bend National Park and eastern edge of the Chihuahuan Desert (the largest in North America); and elevations ranging from Guadalupe Peak (8750 ft.) to the Pecos and Rio Grande River Confluence (984 ft.).[1]

    Presidio County is a triangular shaped territory bordering Mexico by way of the Rio Grande River, flowing from the northwest to the south east. The county seat is Marfa, home to the striking

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Telegram home from Donald Judd traveling to California by way of Texas for military duty in 1946, Judd and Murray, Donald Judd Writings, 424.

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Wikipedia contributors, "Giant (1956 film)"

2   Mainstreet Marfa from the cupola of the Presidio Country Courthouse

3   West Texas landscape

4   Giant film poster

second empire influenced Presidio County Courthouse (1886-87), grounding the town with great flair. Indeed, it seems to pin down all that could otherwise drift away. The night sky hosts (unveils, reveals) a celestial feast. It is no wonder that the renowned Mc-Donald Astronomical Observatory is located near Fort Davis in the Davis Mountains of nearby Jeff Davis County, Texas. [2]

MARFA AND JUDD

"Dear Mom, Van Horn Texas. 1260 Population.
Nice Town Beautiful Country Mountains -
Love Don 1946 Dec 17 PM 5 45."[2]

Along the road from art critic to artist—so-called minimalist, a moniker disliked by Judd—and after many years based in New York, Judd returned to West Texas in the early 1970s and purchased a 45,000-acre ranch and several buildings in the town of Marfa. Throughout his life, Marfa served as one of three primary residences for Judd as he migrated between Marfa, New York and the Swiss village of Küssnacht on Lake Lucerne.

Donald Judd and the West Texas landscape by way of Marfa are now inexorably intertwined. Marfa is a kind of bespoke village embedded in the rugged and arid West Texas landscape. Fine dining and high art comfortably reside with burritos, mules and cactus. The modern Marfa clings to both its recent and distant past while grappling with a distinctly eccentric present. In Marfa, place is history. The history of Marfa is ever present by way of its atmosphere: a powerful landscape, rolling and horizontal, boundless until bounded by mountains and coupled with the thin air proffered by its 4800 ft. elevation. [3]

The near distant past of Marfa is rendered through the western epic film *Giant*.[3] Released in 1956 and directed by George Stevens, it stars Rock Hudson, Elizabeth Taylor and James Dean (who died prior to the release of the film). Partially filmed in and around Marfa, the region served as the expansive ranch of protagonist Jordan "Bick" Benedict, Jr. (Hudson). The film's narrative mediates between a grand multi-generational drama of familial friction and transition, as big oil invades the traditional Texan ranchlands, and, for its day, daringly confronting the region's pervasive racism as wealthy Anglos condescend toward service class Mexican Americans. [4]

Today, the shadow of *Giant* looms more modestly in Marfa. The El Paisano Hotel, home for the cast and crew for several months, still stands, renovated in 2004 after years of decline and safely secured on the U.S. National Register of Historic Places. Judd's eccentricities have

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Sennett, The Craftsman, 20

made Marfa a town eccentric unto itself. The ruin of Reata, the lonely estate owned by Bick Benedict, stood for many years, a derelict billboard of a one-time pretend mansion. The ruin is now gone. However, in a Marfa appropriate intersection of contemporary art and the Texan landscape, artist duo Michael Elmgreen and Ingar Dragset erected a fake Prada store in 2005, some 30 miles northwest of Marfa on US 90. A billboard turned museum by way of the Texas Department of Transportation (originally classified by the Texas DOT as an illegal billboard, the building was reclassified as a museum and remains standing), the Prada store is minimalist art, a critique of consumer culture, and a roadside attraction, in addition to serving as a ground zero for selfies and social media posts. It serves an an outpost, a pre-welcome station for inquisitive visitors and offers a sneak preview of what lies beyond. One might argue the fake Prada holds a distant kinship to (if not an obvious extension of) Judd's solemn cast concrete boxes. Both foreign but oddly at home and welcome in the West Texas landscape. A landscape, it seems, capable of absorbing virtually anything. The pretend Prada proffers a cultural correspondence—one perhaps, of irony and dissidence—between Marfa and the outside urbanized world. [5-6]

THRESHOLDS

The Greek God Janus serves as a catalyst for the Marfa Studio. Janus is two faced. Each face looking in the opposite direction, one facing the past and the other peering into the future. Janus is a threshold and, as are all thresholds, a correspondence between and across two realms. The theme of correspondence provides a didactic structure for the studio work.

MATERIAL CULTURE

In "The Craftsman", author Richard Sennett speaks of material culture and offers a reading of the value of skilled work where "the desire to do a job well done for its own sake" encourages individuals to "learn about themselves through the things they make".[4]

The concerns of material culture reside in the design studio. That is, the value imbued in the making of an object or set of related things. Material culture binds the corporeal—the physicality of materiality—with intellectual production and situates the resulting work in a vernacular, place-based logic. We explore the intrinsic connection, correspondence, if you will, between the eye, the mind and the hand. One seeks "to make" as a means of inquisition. Making is considered an intellectual act, a form of thinking.

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Wikipedia contributors, "Palimpsest"

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Bailey, "Time Perspectives, Palimpsests and the Archaeology of Time," 203

7   Palimpsest drawing

The studio serves as a pre-thesis think tank and presumes a thesis of some kind is essential to all projects. Thesis seminar is both a self-driven design studio concluding one's formal academic training and an intellectual trajectory for making architecture. Thesis as a formal project stands at the threshold between concluding an academic career and beginning the journey into practice. A Janusian moment. Thesis is presented as both an end and a beginning. The Marfa Studio seeks to engage ideas and serve to clarify the participant's intellectual trajectory toward thesis and beyond. Studio participants dictate studio discourse and direction. Ambitions and doubts establish the arc of the work. The beginning of the term is spent uncovering the foundations of the student's search and, more importantly, preparing a methodology that is both questioning and generative.

PEDAGOGICAL PALIMPSESTS

The term *palimpsest* originates in ancient Greek as *palimpsestos* with *palin* (again) combined with *psestos* (rubbed smooth or again scraped). This translates as "scraped clean and ready to be used again" and describes the process of erasing and smoothing wax coated writing tablets and repeatedly writing upon the surface. The Romans referred to this process as "washing papyrus", a commonly used surface that was cheaper than the parchment prepared from animal skins. This washing or erasure is more often a product of preserving the afore mentioned and sturdier parchment.[5] The palimpsest, then, is a ghostly structure with layer upon layer, written and erased, written and erased. A kind of ritual displacement of knowledge, a privileging of one order over another [7].

The Palimpsest is, perhaps, the most direct and intimate of correspondences. The process of erasure and re-writing yields a density of ideas and information, collapsed into one place and awaiting discovery and interpretation. A disjunct correspondence of collisions over time yields a disjunct overlaying of knowledge. This dense map of accidentally intertwined cultures and bodies of knowledge suggests an appropriately speculative pedagogical structure for the Marfa Studio. Archeologist Geoff Bailey outlines a palimpsest typology as follows:

True palimpsests
"True palimpsests are palimpsests in the strict sense of the term in which all traces of earlier activity have been removed except for the most recent."[6] A true palimpsest is an actual real time recording device. Erasure presents each successive mark as new and complete. Erasure yields an absence whereby history remains a mystery.

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Ibid, 204

8

Ibid, 205

9

Ibid, 207

Cumulative palimpsests

"A cumulative palimpsest is one in which the successive episodes of deposition, or layers of activity, remain superimposed one upon the other without loss of evidence, but are so re-worked and mixed together that it is difficult or impossible to separate them out into their original constituents."[7]

This palimpsest is also most commonly referenced within architectural discourse. The overlaid, simultaneous circumstance of coincident histories. This palimpsest is an exquisite entanglement of layers, imprint upon imprint, inviting distillation and interpretation.

Spatial palimpsests

"…spatial palimpsests, a variant of the cumulative palimpsest but distinct from it and defined as a mixture of episodes that are spatially segregated but whose temporal relationships have become blurred and difficult to disentangle. … the boundary between cumulative and spatial palimpsests is not a sharp one. Both may be characterized by a variety of locations of activity and by different degrees of spatial and temporal integrity. The key difference is rather one of geographical scale."[8]

Indeed, in the experience of a building we see, feel and encounter the building in radically different ways over time (or even in a relatively short period of time). The time of day and year alters the disposition and character of light entering the spaces, yielding very distinct experiences, impressions and memories.

The very experience of architecture emerges as a multi-palimpsestic condition, altered by time, materiality, season, the weathering of surface, and cosmetic changes to a space. Each experience is influenced by a previous experience, mood, expectation, or pre-conception. The randomness of the immediate environment shapes one's memory: a nearby train, a car horn, a distant jackhammer, and/or a passing conversation collide to form an intertwined heterotopic spatial/aural context. Context sways perception, and perception emerges from an ever-changing palimpsest of experience.

Temporal palimpsests

"A temporal palimpsest is an assemblage of materials and objects that form part of the same deposit but are of different ages and 'life' spans. On first description this sounds like a cumulative palimpsest by another name. However, in the cumulative palimpsest, the association of objects of different ages is really an aggregation due to the effect of mixing together what were originally distinct episodes of activity or deposition."[9]

Think of temporal events such as rain, snowfall, wind acting upon

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Ibid, 208

11
Rossi and Eisnman, *The Architecture of the City*, 7

and altering either immediately, temporarily or slowly over time the geography of a place.

Palimpsests of meaning

"A palimpsest of meaning can be defined as the succession of meanings acquired by a particular object, or group of objects, as a result of the different uses, contexts of use and associations to which they have been exposed from the original moment of manufacture to their current resting place…"

"…whether in the ground, a museum, a textbook, an intellectual discourse, or indeed as objects still in circulation and use. It is distinct from all the other types of palimpsests so far discussed in that it can apply to an individual object, and because it brings us more obviously into the domain of subjective time experience."[10]

In Peter Eisenman's forward to Aldo Rossi's *Architecture of the City* he discusses Rossi's notion of specific place, or locus: "…thus, while the locus is a site which can accommodate a series of events, it also in itself constitutes an event… Buildings may be signs of events that have occurred on a specific site; and this threefold relationship of site, event and sign becomes a characteristic of urban artifacts. Hence, the locus may be said to be the place on which architecture or form can be imprinted. Architecture gives form to the singularity of place, and it is this specific form that the locus persists through many changes, particularly transformation of function…

This relationship suggests a different limit to history. History exists so long as an object is in use; that is, so long as a form relates to its original function. However, when form and function are severed, and only form remains vital, history shifts into the realm of memory. When history ends, memory begins. …History becomes to be known through the relationship between a collective memory of events, the singularity of place (locus solus), and the sign of the place as expressed in form." And Eisenman goes on to say, "…the new time of architecture… is that of memory, which replaces history."[11]

The palimpsest of meaning intersects with the palimpsest of history. History pivots to memory and over time we witness a scribing of events upon the place. This is the palimpsestic overlay of events; the creation of memory. The process is a kind of memory machine. And the production of architecture (the process of making architecture) references one's history, as if frozen in time, and coupled with one's memory of events, of discourse, of experiences.

Finally, *thesis* is from *late Middle English (via late Latin from Greek), literally 'placing, a proposition', from the root of tithenai 'to*
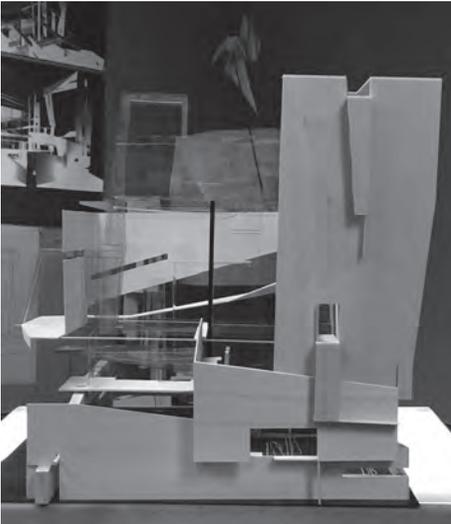
8a

8b

12

Oxford dictionaries, online

13

Ibid, online

place'.[12] To place; to make a place; a place as thesis. The thesis of
the Marfa Studio is to make place, or rather, an essence of place.
And surely a sense of place drew Donald Judd to West Texas.

CONTEXTUAL CORRESPONDENCE

Travel to Marfa is something of a pilgrimage and, in this instance,
intended to challenge and strip away the familiar surroundings of the
students' immediate context. In other words, to experience the near
opposite of the known. In this circumstance, the known is the lush, wet,
humid landscape of Florida. With 1350 miles of coastline, a fragile karst
topographic underlay, and rising sea levels, Florida has both a tempo-
ral and ironically primordial character. It is primarily a landscape of
canopy, shade and shadows interwoven with highways, a mish-mash of
architectural pre and post war development, and various water bodies
collectively blanketing urbanized regions in endless sprawl. It is a state
defined through tourism, violent storms, the temporal, and the mythical.

Much of Florida is delineated by the liminal line between water and
land; the sunrise and sunset of east and west; and the development and
demographics of north and south. In many ways it is two states, rural
and urban, wealthy and not, new settlers and increasingly rare natives. Its
strangeness revels in contradictions and mis-alignments. The east-west
disposition of the Interstate 4 corridor bisects the state north to south.
It is said the Interstate 4 corridor decides national elections, such is the
diversity of opinion, race, ethnicity and culture. The corridor is a place
of fantasy and the fantastic, home to mass tourism, amusement parks,
miniature worlds, and filmic narratives retold as themed rides. De-
funct attractions are modern day ruins as generations of entertainment
venues die and are reborn only to die again. It is a state both of youth
and exuberance, yet, for the elderly, serves also as God's waiting room.

Our contextual correspondence is one of opposition and con-
tradiction. Context means to weave together, *from the late Mid-
dle English (denoting the construction of a text): from Latin con-
textus, from con- 'together' + texere 'to weave'.*[13] Context is equally
commonplace and elusive; multifarious and particular; concrete
and abstract. The familiar juxtaposed by the foreign. [8]

PLACE AND SPACE

In his celebrated writings, Christian Norberg-Schulz speaks at length
of genius loci, the spirit of place that we consider in the correspon-
dence between these apparent opposing landscapes. Although vastly

14

Norberg-Schulz, *Genius Loci*, 23

15

Ibid, 24-32

16

Ibid, 42

17

Ibid, 42

18

Ibid, 45

19

Ibid, 45

different in climate, landscape and altitude, Florida and West Texas align through certain rubrics of place, as defined by Norberg-Schulz: "…it is an existential concept which denotes the experience of meanings." [14] His four modes of understanding natural systems offer an existential reading of landscape as idea more so than an object or artifact:[15]

Things: The forces of the natural landscape are related to concrete natural elements or things.

The Sun: An abstraction of the cosmic order, as defined by the presence of the sun as form giver and shapeshifter.

Character: The character of place, tied to human presence

Light: We understand light as a thing, an idea, and a symbol. In religious traditions, light is linked directly to the spirit, Devine presence, and a deep cosmic order.

Norberg-Schulz provides a typology of natural landscapes: Romantic, Cosmic, Classical and Complex. Florida is a romantic landscape: "The sky is hardly experienced as a total hemisphere but is narrowed in between the contours of trees and rocks, and is moreover continuously modified by clouds."[16] The dense canopy of Florida's interior is near primal, filtering light, creating shadow, and providing respite from the relentless sun and humidity. The sky is surely fast moving as Atlantic and Gulf winds crisscross the state yielding a complex and temporal sky pattern. The earth is ever-present: we sense, feel, smell and all but taste the richness of the earth. Interestingly, Norberg-Schulz specifically defines the Nordic Romantic landscape as "chthonic"; of the earth; belonging to or inhabiting the underworld.[17] Florida's underworld quickly shifts from a shallow layer of earth to a water world of aquifers, underground caves, rivers and fragile limestone.

    The West Texas landscape is Norberg-Schulz's cosmic landscape: "In the desert the complexities of our concrete-life world are reduced to a few, simple phenomena…In the desert, thus, the earth does not offer man a sufficient existential foothold. It does not contain individual places, but forms a continuous neutral ground."[18] The West Texas sky is defined by the sun and, alternatively, by the moon and stars. It is a place of absolutes, at times formless. Norberg-Schulz further notes its existential character through the Arabic proverb: "The further you go into the desert, the closer you come to God."[19] As with the reciprocity of sun and shadow, Florida's romantic landscape offers counterbalance to the cosmic landscape of West Texas.

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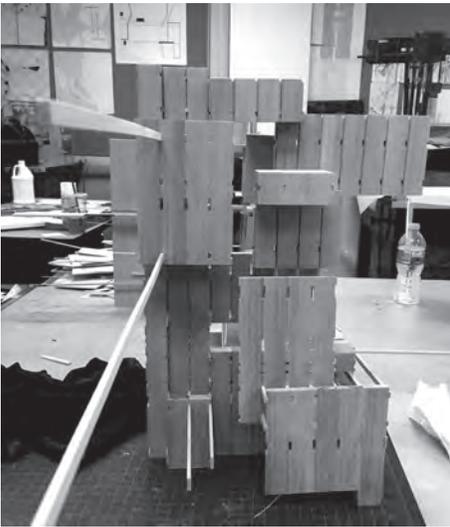
10

The studio format is tripartite with an *epilogue* that also serves as a *preface*.

Part 1   From Artifact to Palimpsest
Part 2   The Provost
Part 3   Fiat Lux
Part 4   Epilogue/Preface

9   Provost project

10   Provost project under construction

THE MARFA STUDIO FORMAT: THE FAMILIAR MADE UNFAMILIAR AND THE SUSPENSION OF DISBELIEF

Part 1 / From Artifact to Palimpsest

We begin with the familiar and strive to render it unfamiliar. The student is asked to select an artifact of some personal significance. These items included a chess set, cufflinks, photographs and sewing patterns. The artifact was represented and transformed through a series of hand-made drawings. It was redrawn, shifting scales and modes of representation. The nature of the drawing emerges as a muti-layered interpretation of the original artifact. It is a real time palimpsest assembled through scalar shifts, juxtapositions, interpretations and re-interpretations. The resulting document is a densely layered map of territorial overlays resulting in a two-dimensional, yet spatial palimpsest.

Part 2 / The Provost: the Overseer

The resultant diagram is used to construct the Provost, a speculative volumetric construction that serves as a vehicle to determine and experiment with "the architectural edge". *Bounds* mark the location of space and *edge* defines its character. The Provost is a 24" square cubic volume with only three requirements: one vertical surface must be 2" thick and built with an opaque material; an intersecting vertical surface must be a thin, tectonic assembly partially constructed with Plexiglas. Any sense of *ground* must float within the 24" volume. The intersection of thick and thin, transparent and opaque, tectonic and stereotomic force a didactic correspondence, a material, spatial and experiential dialogue programmed through a minimal, even liminal, condition of occupancy. The scale of one inch equals 1.5 feet yields a 36-foot scalar volumetric cube [10].The program is simply a place of arrival and exchange; purposely left open-ended to promote a sense of speculation and poetic habitation. The artifact drawing exercise is used as a programing tool to develop a spatial logic within the confines of the Provost. [9-10]

Curricular Correspondence

The University of Texas at Austin, located in the state's capitol city, lies 429 miles east of Marfa. In the mid 1950's the School of Architecture at UT saw the convergence of another set of giants, though at the time, no one could foresee the significance of this gathered faculty.

Under the guidance of School Director Harwell Harris, Bernhard Hoesli, Colin Rowe, John Hejduk and Robert Slutzky converged in the Texas hill country and commenced construction of a new architectural pedagogy. Impeccably detailed in Alexander

20
Caragonne, *The Texas Rangers*, 5-12

21
Ibid, 190-194

22
Ibid, 192

23
The variations of the nine-square project
have been developed at myriad institutions by
countless faculty.

Caragonne's, *The Texas Rangers, Notes from an Architectural Underground*, the curricular map of the architecture school both borrows from and rejects the trappings of both the beaux arts and modernist educational traditions. History and precedent were revalued, context reconsidered and architectural space forged ahead of architectural form. An overlay of the fashionable and influential gestalt psychology privileged visual perception and paved the way for "seeing" architectural space in two and three dimensional constructs.[20]

The advent of the deeply influential "nine square grid" project established a Cartesian point grid providing formal structure while inviting interpretation of rules and formal order. The nine square exercise privileges plan over section and presents a Miesian inspired space of infinite expanse along the x and y axes. Hejduk eventually interprets this in a more literal column and beam structure. We see this through his five experimental Texas Houses developed during his brief tenure in Austin.[21] There is we learn, an authentic sense of discovery and invention through pedagogy.

"Hejduk thus began a career in teaching with a pattern that would repeat itself over the years, teaching others not what he "knew" but instead what he was in the process of discovering."[22]

This nine square exercise is later extruded to an 18-square grid, thickened to permit an increasingly complex spatial order through a more animated section. Eventually a 27-square grid, essentially a cubic volume, makes the exercise far less two dimensional than the original nine square project. The nine square generated any number of related beginning design exercises: the kit of parts, the cube, the space box, and so forth.[23] The Provost exercise continues this legacy, not as an introductory exercise, but as a project asking the student to "begin again", to revisit fundamental relationships, to invent program as experience, to re-consider tutorials and re-shape strategies of making.

Perhaps the most important feature of the nine-square exercise and its myriad descendants is the clear sense of order that can be quickly acted upon and critiqued. Of course the nine-square references Le Corbusier's free plan and Mies van der Rhoe's precise grid based plans and universal space, but it also echoes the powerful symmetry of classical architecture. The addition of a line or, in three dimensions, a plane, quickly modifies the order of the scheme and creates a language of representation and a means of discourse. Alterations and additions induce asymmetry, tension, re-centering, and re-ordering through a more complex tartan grid. The immediacy and accessibility of the nine-square inspired exercises is essential to creating a place to begin making architectural decisions.

24

Borys, "Lume Di Lume: A Theory of Light and
Its Effects," 7-8

11
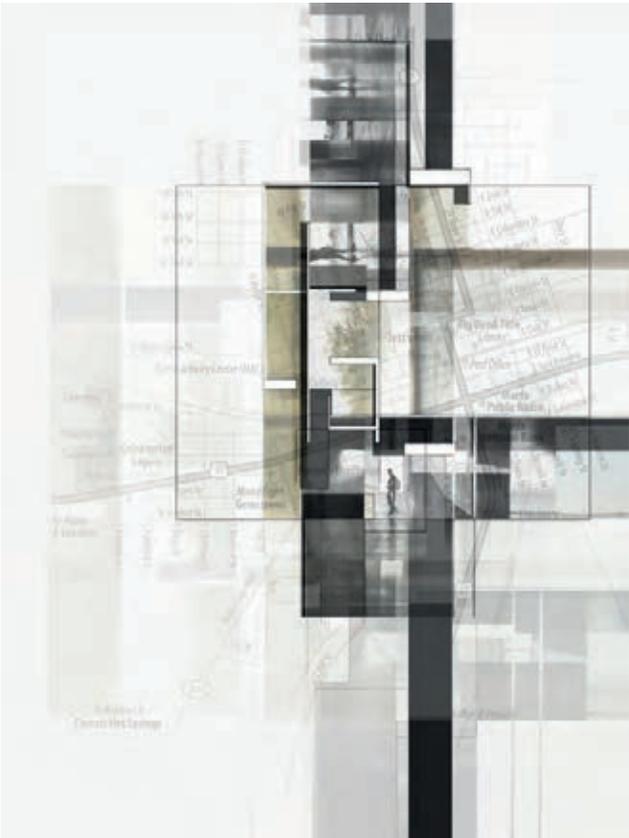
11   Light/Shadow study

Part 3 / Fiat Lux: Light catalogued and cast

Marfa's high altitude and intense sunlight yields a dramatic play of light and shadow. Students are asked to assemble an archival *catalog* of light through carefully composed photographs. Vincenzo Scamozzi's 16th century treatise, *L'Idea dell"Architettura Universale* serves as a point of departure as he outlines six categories of light:[24]

Intense: from direct sun on a clear day

Lively/perpendicular: as received in courtyards and domes

Horizontal, free: as received frontally or diagonally as in rooms or porticoes

Limited light: obstructed by a place's narrowness, like a street

Secondary light: as it enters from an adjacent directly lit space

Minimal light: reflected

From the project outline:

"Each of Scamozzi's light types depends on an encounter with an architectural body or space. In other words, the light is altered as it enters a space by first being interrupted (or gathered) by a roof, wall, or other surface. The verbs are revelatory: light enters, is received, obstructed, reflected… The adjectives, intense, lively, horizontal, limited, secondary, minimal, are likewise informative. Literature and poetry provide us with other descriptives: light can shake, pour, sputter, and flow; it can be caught; it can be false or deceiving, divine, ancient. It can affect the senses: it can blind and burn. Keep in mind we cannot perceive heavenly light independent of its earthly twin, shadow, which gives rise to measure and time."

A palimpsest of light and shadow is digitally constructed using overlaid images to collapse the temporal photographic documentation into a single frame. An accompanying narrative describes the light quality of each image and, in turn, serves as a program for the construction of "light vessels". [11]

The Vessels / Seriality and Light as Program

Inspired by Donald Judd's Marfa works and guided by the aforementioned light studies, students designed and cast (using plaster or concrete) a series of light vessels. Casting the artifact necessitates an inversion of spatial logic, a dance between solid and void. The casting of artifacts designed to capture the casting of shadows suggests an intellectual correspondence between conception and construction; light and surface; time and space. The vessels emerged as a serial assembly interacting through proximity, juxtaposition and locale, vis-à-vis, the registration of ground as datum. [12]

The vessels, through their cast forms, correspond and invert

12a

25

Oxford dictionaries, online

12b

12c

12d

12   Vessel project
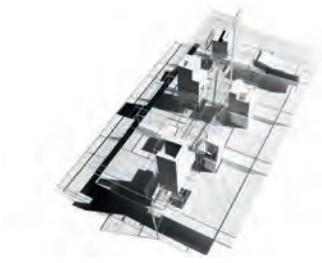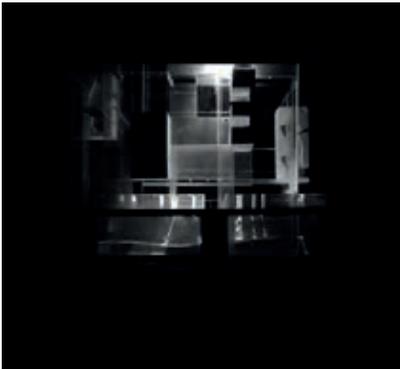
the Provost project with its roots in the tectonic, Cartesian world. The vessels, each in character a more-or-less cubic volume, revisit the figure/ground interplay of space and form, so appreciated by the Gestalt theorists *(literally from the German Gestalt, 'form, shape')*[25]. From some distance, the vessels revisit the nine-square project of the 1950s without the strict formal order and, instead, promote the emergence of space over the superimposition of logic. The ensemble of vessels has a somewhat urban character, marking negative space both between objects and within each artifact. Forms negotiates between one another for presence and relevance.

The serial nature of the exercise echoes Judd's aluminum boxes and concrete landscape frames. Seriality supports the inherent repetitive and redundant nature of architectural education. To be made redundant is, in the most literal sense, to be cast off or superfluous. Yet, redundancy is also rhetorical, repetitive, and excessive. Pedagogy is inherently rhetorical, as is true with any language including the language of architecture. We address composition, technique, and expression in order to deliver, convince and argue for an architectural (formal/spatial) proposition. Bricks can, and indeed, must be as rhetorical and convincing as words. Space is expressive, nuanced, figurative and finally, negotiated.

Part 4 / Epilogue/Preface/Toward Thesis

The last portion of the studio is devoted to each participant's thesis-borne *agenda*. While the first three design exercises reveal ideas and strategies, the final project brings these predilections and sensibilities directly to one's research and design work. This project is the Janusean threshold between design studio and thesis proposal; between thesis project and beginning again in the professional realm. Thesis projects (remember, "placing a proposition") in an academic setting are invariably ambitious, optimistic and even naive. Students dwell – as they should – in an ideal circumstance of making, whereby an architectural proposal can address things extraordinary, complex, unfamiliar, personal, and even strange. Within the academy lies the hope of clarity. [13]

Historian Charles Jencks famously timed the death of modernism to the destruction of a single profoundly failed housing project. The demolition of the Pruitt-Igoe project surely marked a dark moment in the optimism of architecture as a social project. But was Jencks correct? The modern project, it seems, is alive and well. Students inherent a world littered with problems, shortages, threats and obstacles. It seems they often wish to create impact and offer concrete responses to often abstract problems; matters that are sometimes not so much solved as theorized.

In the exquisite essay, *Weak Architecture*, Ignasius Solà-Morales

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26

Solà-Morales, *Differences : Topographies of Contemporary Architecture*, 71

27

Ibid, 71

13   Thesis Palimpsest (Residue of Transformation, NYC)

critiques architecture's instrumental monumentality and insistence upon the self-definition of the *monumental as physical permanence* (per Rossi). Solà-Morales calls for another kind of monumental statement, one steeped instead in memory. In his words, "…as a vestige, as the tremulous clangor of the bell that reverberates after it has ceased to ring; as that which is constituted as pure residuum, as recollection".[26]

Solà-Morales concludes his essay in search of another kind of permanence:

"In contrast, the notion of monument I have sought to put forward here is bound up with the lingering resonance of poetry after it has been heard, with the recollection of architecture after it has been seen. This is the strength of weakness; that strength which art and architecture are capable of producing precisely when they adopt a posture that is not aggressive and dominating, but tangential and weak."[27] The architectural thesis an an academic endeavor has fallen out of favor in many institutions. The speculative, open-ended thesis has been displaced by various vehicles including the terminal project, a carefully orchestrated display of competence, the research studio, echoing larger university investigative agendas, or simply a final design studio of no particular focus, except providing a proficient, if modest, conclusion. We see a renewed interest in the architecture of crisis, privileging focused problem solving over broad conceptualization. Resiliency, sustainability, housing, and addiction serve such a taxonomy. The academic thesis project is a labor intensive endeavor, requiring a committed faculty coupled with a curriculum designed to anticipate the leap into thesis through a runway of research and critical thinking opportunities.

As the academic thesis binds statement with problem and proposition with project, the exercise might well learn from the notion of weakness proposed by Solà-Morales. Architecture is an instrument of jurisdiction. We guide movement, stake territory and, dare I say, build walls. The simple act of delineating space necessitates some degree of control. And the control of boundaries, edges, and spaces is inherently political. Hegemony is integral to the act of making. We so often seek an answer when we are actually in search of a question. Studies of architecture might channel deeply personal sensibilities and the desire for answers into architectural proposals that interrogate, doubt and ultimately contribute to a larger social project of porous intellectual boundaries contributing to a multifarious, palimpsestic query of the very discipline itself.

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Philip Ursprung is Professor of the History of Art and Architecture and Dean of the Department of Architecture at ETH Zurich. He earned his PhD in Art History at Freie Universität Berlin after studying in Geneva, Vienna and Berlin, and taught at the Hochschule der Künste Berlin, Columbia University New York, the Barcelona Institute of Architecture and the University of Zürich. He is editor of *Herzog & de Meuron: Natural History* (Montreal CCA and Baden, Lars Müller, 2002) and *Caruso St John: Almost Everything* (Barcelona, Poligrafa, 2008). He is author of *Allan Kaprow, Robert Smithson, and the Limits to Art* (Berkeley, Univ. of California Press, 2013), *Der Wert der Oberfläche* (Zürich, gta Verlag, 2017), *Brechas y conexiones: Ensayos sobre arquitectura, arte y economia* (Barcelona, Puente Editores, 2016) and *Representation of Labor / Performative Historiography* (Santiago de Chile, ARQ, 2018).

Alberto Pérez-Gómez was born in Mexico City in 1949, where he studied architecture and practiced. He did postgraduate work at Cornell University, and was awarded an M.A. and a Ph.D. by the University of Essex (England). He has taught at universities in Mexico, Houston, Syracuse, Toronto, and at London's Architectural Association. In 1983 he became Director of Carleton University's School of Architecture. He has lectured extensively around the world and is the author of numerous articles published in major periodicals and books.

In January 1987 he was appointed Bronfman Professor of Architectural History at McGill University, where he founded the History and Theory Master's and Doctoral Programs.

His book *Architecture and the Crisis of Modern Science* (MIT Press, 1983) won the Hitchcock Award in 1984. Later books include *Polyphilo or The Dark Forest Revisited* (1992), *Architectural Representation and the Perspective Hinge* (co-authored with Louise Pelletier), and *Built upon Love:*

Architectural Longing after Ethics and Aesthetics (2006). His most recent book *Attunement* (MIT Press, 2016) examines connections between phenomenology, recent enactive cognitive science and emerging language, seeking attunement in architecture and the urban environment and examining the issue of architecture as atmosphere. He has also recently published *Timely Meditations* (RightAngle Intl., 2016)*,* a collection of essays in two volumes. Pérez-Gómez is also co-editor of the seven-volume series *Chora: Intervals in the Philosophy of Architecture*.

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Judith Birdsong is an educator, writer, and photographer whose work has been exhibited and recognized both in the US and abroad. She is a lecturer at The University of Texas at Austin, and in 2016 and 2017 held the position of Gibbons Distinguished Visiting Professor at The University of South Florida. She received her Bachelor of Arts in Art History from The University of Texas at Austin (1985)

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Robert McCarter is a practicing architect, author, and Ruth and Norman Moore Professor of Architecture at Washington University in St. Louis since 2007. He has previously taught at the University of Florida from 1991-2007, where he was founding Director of the School of Architecture; at Columbia University from 1986-1991; and at three other institutions. He has had his own architectural practice since 1982, in New York, Florida and St. Louis, and some 40 of his architectural designs have been realized. He is the author of twenty-one books to date, including *Grafton Architects* (2018); *The Work of MacKay-Lyons Sweetapple Architects: Economy as Ethic* (2017); *The Space Within: Interior Experience as the Origin of Architecture* (2016); *Marcel Breuer* (2016); *Steven Holl* (2015); *Aldo van Eyck* (2015); *Herman Hertzberger* (2015); *Local Architecture* (with Brian MacKay-Lyons, 2015); *Alvar Aalto* (2014); *Carlo Scarpa* (2013); *Understanding Architecture: A Primer on Architecture as Experience* (with Juhani Pallasmaa, 2012); *Wiel Arets: Autobiographical References* (2012); *Frank Lloyd Wright: Critical Lives* (2006); *Louis I. Kahn* (2005); *On and By Frank Lloyd Wright: A Primer on Architectural Principles* (2005); *William Morgan, Architect* (2002); and *Frank Lloyd Wright* (1997). Among other awards and honors, in 2018 the curators of the 16th Venice Biennale of Architecture, "Freespace," selected McCarter as one of 71 International Exhibitors, his exhibit entitled "Freespace in Place: Four Unrealized Modern Architectural Designs for Venice; Carlo Scarpa's *Quattro progetti per Venezia* Revisited," and he was named one of the "Ten Best Architecture Teachers in the US" by *Architect* magazine in December 2009.

Uršula Berlot Pompe, Ph.D., is a visual artist, art theorist and associate professor at the Academy of Fine Arts and Design, University of Ljubljana. Fields of research: art and science, theory of space in visual art, mimesis. She is the author of scientific monograph on Marcel Duchamp and numerous articles on art theory.

Claude Armstrong is an architect, teacher, researcher, and partner in Armstrong + Cohen Architecture. His projects have been built in New York, New Mexico, New Jersey, Florida, and Tanzania. A graduate of the City College School of Architecture and Columbia University's GSAPP, he has previously designed for communities, non-profits, schools, and artists, has taught at the University of Florida and at Preservation Institute Nantucket. Armstrong was introduced to Donald Judd in 1982 by architect Lauretta Vinciarelli, and collaborated on projects in Marfa (TX), New York, and Switzerland. Armstrong + Cohen Architecture has continued work with Judd Foundation on historic preservation and new programs.

Donna Cohen is associate professor of architecture at the University of Florida. She teaches design studios and history in Florida and Italy, as well as an interdisciplinary seminar on design anthropology with the UF Center for African Studies, where she founded the Architecture/Africa Initiative. A graduate of Smith College, the Cooper Union, and the University of Florida, Cohen is a partner with Armstrong + Cohen Architecture, where she specializes in community initiated projects. Their work has been published in *New Architecture on Indigenous Lands* (University of Minnesota Press, 2013), and *The Green Braid: Towards an Architecture of Ecology, Economy, and Social Equity* (Routledge, 2007), and recognized with awards from the Graham Foundation, American Institute of Architects, the Holcim Foundation for Sustainable Construction, the National Endowment for the Arts, Premio Dedalo-

Minosse, and the Harvard Project on American Indian Economic Development. Her research on Judd is based on her experience assisting the artist.

Gerhard Marx was born in Johannesburg, South Africa in 1976. Living and working in Cape Town, South Africa. Marx's work is primarily concerned with the development of original drawing and sculptural techniques, in which the technique, and the actual process of making carries particular conceptual and philosophical associations. Each technique opens a field of exploration, enabling something of a language that Marx uses to explore to its full poetic and philosophical potential. His seventh solo exhibition, *A Geometry of Echoes* was held with the Goodman Gallery, Cape Town (2015/2016). Other recent exhibitions include *Skelet*, de Armatuur van het Lichaam in de Hedendaagse Beeldhoukunst, Museum Beelden aan Zee, The Hague, Netherlands (2015), and *Imaginary Fact: South African Art and the Archive,* South African Pavillion, 55th Venice Bienale, Italy (2013).

Marx has been involved in the making of several large and Public Sculptures, among these are *The World On Its Hind Legs*, a collaboration with William Kentridge, Beverley Hills, LA, *Vertical Aerial: JHB,* at the Old Ford, Constitution Hill, Johannesburg, *The Fire Walker*, collaboration with William Kentridge (Queen Elizabeth Bridge, Johannesburg) and *Paper Pigeon*, collaboration with Maja Marx (Pigeon Square, Johannesburg). He has extensive experience in theatre, as scenographer, director, filmmaker and playmaker, including *REwind: A Cantata for Voice, Tape and Testimony* (directed by Marx, interactive film by Gerhard Marx and Maja Marx, composed by Philip Miller), performed at the Royal Festival Hall, Southbank, London (2010), the Market Theatre, Johannesburg (2008) and the 62'Centre, William College, Massachusetts (2007). Marx is a fellow of the Sundance

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IN QUEST OF ATTUNED ARCHITECTURAL ATMOSPHERES
Contributions of Cognitive Theory and Neurophenomenology
/ Alberto Pérez-Gómez
In my most recent book, I unpacked the centrality of the concept of atmosphere for architectural meaning and its historical roots. In order to fully grasp the possibilities of *Stimmung* and its implementation nowadays, creating life-enhancing atmospheres responsive to human action and to *place* in the fullest sense (as both natural and cultural context), a proper understanding of consciousness and perception beyond Cartesian misunderstandings is crucial. To this aim, insights drawn from neurophenomenology and so-called third-generation cognitive science prove indispensable. This paper discusses some of these insights.

OUT OF THIS WORLD IN TWO PARTS
/ Agostino De Rosa
What is the role played by the beholder in Modernity and in contemporary world? While we are witnessing a progressive denigration of the visual act—understood here as a cognitive and initiatory action—, the visual image has now assumed an increasingly central role in the epistemological trend of making architecture and artistic production. This essay tries to historically frame the slow process of regimentation of the vision, and its liberation that has occurred in recent times thanks to the experiments conducted in the context of the contemporary art; thus the space of artistic experience is redefined as *a place in which one sees oneself see*.

HIDING IN PLAIN SIGHT
Donald Judd's non-referential architecture
/ Judith Birdsong
The artist, Donald Judd, is best known for his sculptural objects and large-scale serial installations, but in the years preceding his premature death in 1994, he had begun to shift his attention more and more toward works of architecture. Using the redesign of a simple cabin attributed to Judd as a case study, this article exposes and examines the correspondences between his art and architecture that bind them together as a single body of work which acknowledges only the most superficial distinction between the two.

DIAGONAL POEMS OF THE RIGHT ANGLE
Parallels in Practice in the Works of Richard Paul Lohse and Aldo van Eyck
/ Robert McCarter
An essay exploring one example of a largely unexamined tradition within modernism, which from its beginning was understood by its leading practitioners to integrate and engage all the arts. In this tradition, spatial concepts, ordering principles, experiential precepts and design methods are shared in the work and teaching of both modern painters and modern architects. As an example of a "parallel in practice," where contemporaries were directly influenced by each other's thought and work, the essay pairs the Swiss painter Richard Paul Lohse (1902-1988) and the Dutch architect Aldo van Eyck (1918-1999). In their respective works, Lohse and Van Eyck explored the deployment of rigorous right-angle grid ordering systems, into which

were woven diagonal tensions including shear, rotation and pinwheel compositions, without ever using any literal diagonal forms, elements or spaces. Lohse and Van Eyck shared the belief that the underlying ordering principles of art and architecture held implications for both urban and social structure, extending from the domestic room to the urban community to the society at large, and that spatial and formal structure in art and architecture had the capacity to enrich everyday life and to make the world a better place.

PICTORIAL ABSTRACTIONS
Visualizing Space in the Eras of Modernism and Information
/Uršula Berlot Pompe
Since its beginnings, abstract art followed the idea of reductionism and abstraction of the real, often in order to reveal internal, essential yet invisible truths that lay beyond the sensorial complexity of the everyday world. Today, the reductionist forms of abstract, geometric and minimal art, likewise referred to as non-representational or non-objective art coexist with and within the complexity of new pictorial abstractions, with some of them reflecting a new space paradigm seen as a form of complex and dynamic nonlinear reality, while others subvert the aesthetic logic of digitally generated (algorithmic) abstract forms. This essay focuses on selected space conceptions as manifested in modern and postmodern abstract painting through the prism of concurrent scientific explanations of spatiality. It illuminates spatial concepts of emptiness and absence and the idea of a dynamic expansive multidimensional space in the framework of chosen avant-garde painting and analyzes the representation of space understood in terms of invisible energy field, sublime image of the infinite or optical spatial tactility in the abstract expressionist painting. Furthermore the essay deals with space and light experiments in painting of Light & Space artists and presents examples of contemporary abstract painting of the information era that are influenced by digital technology and its virtuality as well as by the aesthetic and formal implications of scientific theories of complexity and nonlinear dynamic systems.

ATTRACTORS IN THOUGHT
George Kubler and Donald Judd
/ Claude Armstrong, Donna Cohen
How might Donald Judd, American artist (1928-1994) have been influenced by the revisionist theories of art historian George Kubler? This essay, constructed in a set of six interchangeable "planes" of thought, considers Kubler's seminal 1962 work, The Shape of Time, Remarks on the History of Things, as it relates to Judd's emergence and subsequent preeminence in the international artworld. The structure and terms of Kubler's thesis bear close reading with several corresponding instances in Judd's collected writings, and, indeed, Judd's practice. Passages in Kubler's book resonate with the style and empirical philosophy of the artist, as do specific terms and concepts, *prime objects, entrance, sequences, series* and a defense of the ungraspable *actuality of time*. The essay is a primer for further research and discourse of the works and underlying thinking in both art and architecture of Donald Judd.

THE HUMAN FACE MIRROR
/ Massimiliano Chiammaichella

This paper investigates the relationships between the real, perceived, desired images and the reproduced image of the human face and of the physicality of the subject who transfers it to his own self-portrait. There are many correspondences; both objective and interpretable, and visual arts have built on this practice a very long tradition that has lasted for centuries. However, the availability of advanced representation tools today allows the reproduction of a myriad of verisimilar images of the self, or perceived as verisimilar, experimenting multiple identities to trace the most suitable figure to tell about us to the others. The object of the study is the representation of one's own image, conveyed by drawing techniques – analogical, digital, and hybrid – in order to identify methodologies and practices capable of communicating it. Correspondences should not only be sought in the likely adherence to the portrayed subject, but rather in the set of graphic artifacts that from time to time manifest themselves in the cognitive narrative of her individuality and become instruments to design social identity.

WAYFARING THROUGH POEM-DRAWING IN SPATIAL DESIGN
Correspondence as Self-altering Along Place-making
/ Viktorija Bogdanova, Tadeja Zupančič, Igor Toš

By traveling, the wayfarer cultivates an enhanced sensitivity towards the surrounding phenomena while continuously changing position. While immersed *in* the places marked by his movement and memorized by his attention, his displacement also situates his glimpse *above* the ordinary appearance of things. Wayfarers *interpret* the given world: they never perceive maps, writings or drawings as complete recipes for defining a Path, but they *ground* abstract concepts into personal and shared *experience*. There is an intense level of correspondence and co-creation between the researcher and the phenomenon of research. This paper aims to exhibit wayfaring through poem-drawing as an attentive movement towards a meaningful spatial solution, allowing: a thorough process of observation of the self and the place of intervention; a discernment of site-specific values and wounds; a creational judgement and interpretative imagination in design. Poem-drawings are knots of slowness and reflection on the creational flow. They encourage relational thinking (a meshwork of meaning) and they integrate different modes of knowledge (theoretical, embodied, technical) into a design-oriented reflection.

PEDAGOGICAL PALIMPSESTS AND COSMIC LANDSCAPES
/ Robert MacLeod

This essay offers an overview of a graduate design studio taught at the University of South Florida School of Architecture and Community Design. The essay discusses context and place through the lens of the West Texas landscape and the town of Marfa, Texas. Architectural design studio pedagogy and its various informants are the focus of the discussion. The essay reviews how certain historical correspondences addressing design fundamentals rooted in architectural education in the 1950s, remain relevant and even transformative in the current curricula. Finally, the paper offers speculation and direction regarding the nature of the architectural thesis project.