a study of the human perception of Place through the use of the Cinema

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a thesis and projects by Matthew Baron

PLACE
PLACEmachine

a study of the human perception of place through the use of the cinema

Bachelor of Architecture Degree Program: Thesis Design

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This book documents and records the semester-long process of thesis project, PlaceMachine. The PlaceMachine is a device that instantly transports travellers to different places, much like a time machine can transport to different times. The ideas of place-dislocation are based on a study of the senses, the mind, and how the two interact to spontaneously create place. Two supporting points are included in the study: dream and phenomenology. These five points together form the core of an architectural methodology. This methodology drove two projects: an eight-screen cinema in downtown Chicago, Illinois, and a very small screening room that condenses the theoretical ideas.
Physical concepts are free creations of the human mind, and are not, however it may seem, uniquely determined by the external world. In our endeavor to understand reality we are somewhat like a man trying to understand the mechanism of a closed watch. He sees the face and the moving hands, even hears its ticking, but he has no way of opening the case. If he is ingenious he may form some picture of a mechanism which could be responsible for all the things he observes, but he may never be quite sure his picture is the only one which could explain his observations. He will never be able to compare his picture with the real mechanism and he cannot even imagine the possibility of the meaning of such a comparison.

-Albert Einstein
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Karin Lucas and the San Francisco Clan;
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Over thirteen months ago, while on an architectural internship in Indianapolis, Indiana, a friend of mine, the Quantum Mechanic, let me borrow a book. The book was titled something like *The New Physics* or *The Beginner's Guide to Quantum Mechanics*, or something like that. This forgotten book, and the books that came after it, spawned the formation of new questions in us: What is the nature of things? What is the ultimate reality? How does the universe really work, and why does it seem the way it does? Any student of life can pose these questions, and any method of answering is as reliable as another. What interests me is, as an architect, how does architecture answer these questions, or how can they be answered through a method of architecture? The following text and projects are a description of thirteen months of thinking, writing, sketching, posing, talking, dreaming, and forming the core focus of an architectural philosophy.
From the beginning, I have been primarily interested in our perceptions of architecture. How do humans experience this? I can understand a building or a built environment with my mind or my imagination—for example, a building by Peter Eisenman is very intellectual, and I must understand it with my intellect, but how is it experienced? How is this odd building to be perceived by a layman, a person with no background in architecture or architectural history, philosophy or psychology? What are the immediate thoughts?

When one talks about direct experience, the first ingredient is the body—the senses—and how the architecture informs the raw matter of the corpus. The universe, including the environments we build, exist in colors, patterns, shapes, edges, sounds, magnetic fields, gravities, heats, touches, textures, and a million other modes of energy; the first thing one must understand is that the universe is energy. It is by the nature of our senses that the universe is made comprehensible. The senses are funnels of energy, transposing and transcribing information for the benefit of the brain. The senses do not exist without the brain, just as the brain does not exist without the senses. The brain manufactures a model of the exterior world from the sensedata. The mind then understands and manipulates this model. It might be prudent at this point to connect these parts with a working definition: the senses are funnels tuned to the environment, the brain is an extension of the senses, and the mind is what the brain does. When the mind rotates and observes this interior model of the exterior, it does so with one purpose: the mind wants place. Place might be described as the way the mind understands the environment as represented by the model. Place is the sum total of experiences at a particular location and time. Place is mostly made up of space, but remember that space is a mental invention, a nominal experience, rather than phenomenal. This thesis and this philosophy are concerned primarily with understanding this important difference. Two other points are branches of this core thinking: dreams and phenomenology. Dreams are the mysterious nightly visitors, alien, yet somehow familiar. Dreams, in fact, are an example of the brain’s ability to make place. During a dream, the brain does the same thing it does while awake, but must do so without the constant flow of information from the senses. The brain creates places spontaneously from only internal symbologies, and does so well we often believe we are really experiencing when we sleep. If one understands this internal dialogue of the mind, one might understand the inside architecture the mind creates for itself, and perhaps gain clues for designing the outside architecture for bodies to live in. Phenomenology is the poetic philosophy of place, an exterior understanding of the inner workings of the mind through the artifacts of the mind, namely culture and its materials. This process of thinking condenses into five words—sense, mind, dream, phenomenology, and place—that describe a cyclical method of architecture, or perhaps these are five sides of the same coin. These five words are the core of this thesis.
A time machine transports one from the present time to a different time.
A space machine transports one from the present space to a different space.
A place machine transports one from the present place to a different place.

Have you ever watched a movie at a theater and become so engrossed in the story and the setting that upon exiting to the parking lot, you felt a disorientation? A dislocation? A sense of Where am I? This feeling is a clue to the internal workings of the mind and its cooperation with the senses. You experience a disruption of place.

Places, despite their tactile nature, occur in the mind. The mind is constantly creating place out of the information gathered by the senses. When watching a movie, the senses are reporting visual and audio stimulus of the setting of the film. Other senses, such as touch, smell, taste, and balance are either dulled into forgetfulness or satiated with a salty snack. The sensory guise is so complete from the activity of only two senses, that the mind begins to live in that place. We are not in a movie theater watching a movie—our participation is much more complete. We are in that place. The mind makes this transition so well, so seamless, because that is what the mind does best. The mind must make reality seem seamless for us to move about this environment. This feeling of becoming wrapped up by a movie is no longer a mystery. The sensory ruse is just complete enough to trick the mind.

The tangibility of a place is one great layer of information the place has to offer. As discussed later, the mind can interpolate between modes to fully comprehend the environmental information it constantly receives. It is possible then, to suggest the qualities of a place in less than full multisensory totalities. The question, then, is what is the relationship between the cinema as a place and the films within as place? What can the dialogue between these two disparate realities become? The experiment, then, is an architectural program called the PlaceMachine.
The Five Points already mentioned are five individual definitions, or five facets of the same thing, or five moments in a cyclical process. They are intimately connected in infinite variations, one aspect leading to another to another. Most importantly, they connect the mind to architecture—they describe both a process of design and a set of criteria to build an environment the basal human mind understands.
The senses are funnels of information, transposing and transcribing electromagnetic radiation, chemical reactions, movement through the space-time continuum, proximity relationships, changes in amounts and rates of energy flow across multiple spectrums, reducing a universe of energy to data usable by the brain. Reduction occurs due to the physical structure of the sense organs. For example, the eyes reduce the infinite electromagnetic spectrum to a restricted range of "visible" wavelengths because of the fine-tuning of the rod and cone cells of the retina to the dominant wavelengths of the sun. We are intimately linked to our environment in this respect.

The senses detect change. This seems to be an evolutionary survival mechanism. The logic is simple: change can kill. The sudden appearance of a predator from the bush, the rising temperature of a forest fire, the prick of a thorn—all are relatively sudden changes that could end one's existence. Slow changes, such as the pressure of a cancer, or static stimulus, such as the texture of a sweater are forgotten by the brain, becoming "white noise", to cross sense-terms, because stasis does not, in evolutionary terms, kill quick enough.

One other important thing to remember about the senses is that we embody more than the traditional five. Remember balance, for example, is a sense, important to an architect. Many senses shared by plants and animals are repressed in humans, and can be regarded as the "sixth" sense(s). For an exhaustive list, see Murchie's catalog of thirty-two senses in the appendix.
To put forward a working postulate, the mind is what the brain does. This of course does not take into account the amazing internal phenomena of imagination, foresight, memory, creativity, logic, or consciousness. It is necessary, however, to immediately link the brain and its associate sensory organs with the phenomena of mind if we wish to link place (the exterior environment) with the self (the interior environment). The understanding of the operations of a brain are reserved for an entire volume of study, but the question of the mind is of particular importance to this thesis and must be delved into. It is perhaps the failing of language to accurately describe the perception of forward momentum of consciousness in the single word "mind". We toss out this word as if it is a physical entity, a piece of us, hidden in a shadow of the skull. The brain seems to be a lifeless lump of gray tissue, while the mind is the noncorporeal spirit operating this matter. In fact, Aristotle believed the heart to be the organ of consciousness, and the brain to be a device to cool the blood. In our quest to find the basic unit of mind, we have uncovered the neuron, the dendrite, the molecule, the atom. Where is the mind in this physical universe? If we can reduce our physical matter to the subatomic level, placing us on the level of astronomical bodies and clouds of gas, what explains the predicament of consciousness? Therefore, the mind must be an intangible product of the spiritual realm, in league with the soul. Descartes reasoned that by the mere act of reasoning, his mind was an entity untouchable, unknowable by physical methods. He went so far as to reason that all of reality might be invented for his benefit by some evil demon, that in fact nothing outside of the body, or the body itself for that matter, really exist, that all sensations are fed to his transcendent mind. Freud pulled this one notch further by suggesting we have not only one mind, but many minds, some apparent and some hidden. These little homunculi vie for control under the smooth layer of the conscious self, pulling "us" into contorted directions.

The mind, unfortunately, is not anywhere, on earth or above it. The mind is the process of living — taking information, transforming, acting — in order to remain living. This does not reduce the human to the level of machine, for only the mind alone can observe itself and say, "here... this is me."
The dream is the waking life in sleep. Two understandings/realities of dreams exist side by side. The first reality is the existence inside the dream. The dream is more than a believable world; it is a world, spontaneously created by the mind. It exists and lives just as the waking world exists and lives. It is believable just as the waking world is believable. The second reality is the rationalization outside the dream. We juxtapose the experiences of the dream with our non-dream wakefulness and decree it as “only a dream.” Dream life is a blurry secondary existence, relegated to a forgetful curiosity.

If we think about the dream, though, it is obvious the dream occurs wholly in the mind — no outside forces influence the mind’s activities, either sensory or extrasensory. It is therefore concluded the mind makes up the dream. Continuing then, if we can study the dream, we can gain clues to the structure and movements of the mind. The mind is invisible in the waking world, because a world exists outside of it. But the world of the dream is manufactured from scratch by the mind.

Dreams show you that you have the power to make a world as you would have it be, and that because you want it you see it. And while you see it you do not doubt that it is real. Yet here is a world, clearly within your mind, that seems to be outside.

The mind then dreams the world it wants. Can a method be found to decode the dream and build its world?
Our everyday word consists of concrete phenomena. 

"Phenomena can be said to "take place." What is meant by the word "place?" The totality of occurrences and things having materiality, shape, texture, density, together determine an "environmental character" which is the essence of place. The totality of places by their nature cannot be analyzed or broken down into components without removing the everyday "life-world," which architects should be deeply concerned with. Phenomenology, therefore, is the methodology embracing the wholeness of life.

Nature itself begins the dialogue of phenomenology. There exists the earth and the sky, and the horizon that borders them. The earth is "the serving bearer, blossoming and fruiting, spreading out in rock and water, rising up into plant and animal..." and the sky is "the vaulting path of the sun, the course of the changing moon, the glitter of the stars, the year's seasons, the light and dusk of day, the gloom and glow of night, the clemency and inclemency of weather, the drifting clouds and blue depth of the ether..." These two elements describe the horizontal and the vertical, and along with the horizon, become origins for floor, ceiling, and wall. Inside is differentiated from outside, and it is within this inside that we dwell. The inside is not empty space, however, because we bring in food and wine and fire — all elements of the outside — while opening windows in walls — visual connections with the outside. It is when we gather the elements of the outside inside that it can be said we are "living in the world." 

Secondly, we desire a symbolization of what we understand. Symbolization is the translation of an experienced meaning into another medium. The symbol is then free from the original experience and able to be manifest in other places. Finally, we need to gather the totality of experiences to create the microcosmos that concretizes our world.

"A house in fact is a metaphysical instrument, a mythical tool with which we try to introduce a reflection of eternity into our momentary existence."
What can I say about place that has not already been said? Place is simply where a being is, and thus said, no simpler statement could be uttered with such depth. Understand this relationship between being and space is mutualistic, for nothing can be without being in a location, and although space can be understood without being, place is thus impossible.

To depend on a concept of place as a design objective is admirable, for it embodies so much. Place is understood right from birth, for as Bachelard writes, "before he is 'cast into the world,' as claimed by certain hasty metaphysicians, man is laid in the cradle of the house." The house is our first place, and from it we learn the psychic importance of attic and cellar, of window and door, of hearth and bed. Who is without these memories of "home"?

To take on placemaking is the architect's most noble calling, but also the most dangerous. One must continually ask how will this be perceived, sensed, experienced? By making place, the architect is performing a mystical feat greater than assembling materials and organizing spaces. He is creating the setting of memories, the cradle of daydreams, the cellar of fears, the stage of life.
The process of design described here started with an analysis of the site, followed by a method of design through an analysis of the designer's dreams. These analyses gave clues to organization and form of the cinema, explored through computer models and sketches.
To the west is the municipal governmental core made up of the Miesian Daley Center just across Dearborn St., created in 1967 by Mayor Richard J. Daley as part of his “clean sweep” urban renewal, and the City Hall and County Buildings one block further. In the plaza to the south of the Daley Center is the famous Picasso sculpture. This is the “big shoulders” of Chicago—hefty and conservative, silently boasting; yet in the background between Daley and CT&T is Jahn’s circus-tent State of Illinois Building. We see over seventy years of urban and governmental architecture in one shot.

Facing east across State St. is Marshall Field’s and Co. the grand old lady of the Loop’s retail corridor. It is definitely old-school architecture, built in the 1870’s, rebuilt in 1907, and most recently renovated in the past five years. It is the mother of all anchor stores. A block to the left is the Chicago Theater, the last of a number of great theaters, both live and movie, centered along Randolph St.

The Randolph Building, itself a rent-machine typical of the Loop prior to the 80’s, dwarfs the puny fill-ins to the east. The gray building to the west has been recently renovated; a McDonald’s inhabits its ground level. Ronny’s Swiss-chalet steakhouse is a jewel, unlike the pair of 60’s “oddities” next to it, both vacant and boarded up.

On the east corner, the Reliance Building, designed by Burnham and Root, is a very early example of the revolutionary steel framed skyscraper. Completed in 1894, its thin lines, white terra-cotta, and giant “Chicago”-style window bays heralded the Miesian perfection of the curtain-wall construction shown in the Daley Center just around the corner. The Reliance, in the process of renovation, is now dwarfed by the likes of 33 N. Dearborn (in black) and the Brunswick Building (in gray). Inbetween is the old Woolworth’s, the old retail, the poor side of State St.
The dream journal spanned the month of January 1997. The goal was to describe and analyze my own dreams to gain insights into the symbolic language of the mind. The beauty of dreams, as explained, is that they are spontaneous places created wholly by the mind for its own pleasure and enjoyment, and the mind does so without the benefit of the senses. The mind makes up places from sensuous memories. The dreams/analyses were to be translated into collages or illustrations, then those translated into sketch models. Each step was to gain information and complexity. This methodology alone could have become an entire thesis in itself.
I dreamt of a porno movie about an impotent man. I forget most of it, but the gist is: The woman is brunette, dressed in a black fitted evening dress, complete with pearls. The man looks kind of like a foppish Mel Gibson, but with crazy orange hair. He is dressed in some kind of colonial American blue suit, white frills, knickers, buckled shoes. The woman is hot, and hot for him. I watch them making out (I know I am watching a TV, but I don't see the TV). The woman bends over away from him and pulls her dress up over her hips, revealing her bare ass. The man is making some kind of small talk, then reluctantly touches her. She is meaning for him to enter her, but all he does is lightly touch her vagina and say, "Wow, you are about ready to explode." He unzips his fly and tries for an erection, but is unable. He has a decoration around his penis, like a cigar band, or a choker. It is brown suede and jeweled with a blue gem. He plays with his penis, but no erection.

Ah, the porno. I like this dream very much. I think it is a direct self-diagnosis. I am the impotent man unable to perform. This is only my hunch and not a Freudian analysis, but I know my own fears. I don't know if this impotency is a sexual fear, as presented by the imagery, or an intellectual fear, unfounded. Either way, I wonder who the woman is, why she wants me, and why I must satisfy her. The jeweled penis is a nice touch. Perhaps by decorating the flaccid tool of my psyche its beauty and fragility are brought to attention.
First dream. I'm part of some team—I don't know what we do or who the other members are but we are very professional—and very secret. We have to go to the Studebaker dorms to join up with our counterpart team. We sit in a lounge separate from the main public parts of the building and wait. The furniture is post-70's design—garish colors, etc. The second team arrives. They are about 8 to 10 women, all very beautiful, all dressed elegantly, all strangers to me. They sit and we start talking. I realize the door is still open, and say, "Is this any way for spies to conduct business?" and close the door. The leader, or someone, passes out silver pouches to each person. Inside the little zippered bag are binoculars, very fine. I focus the lenses and think, its odd to focus the left, or main, eye first, then the right. I think it is normally the opposite. I talk to one of the women about the binoculars. She is extremely thin and tall—almost emaciated. Her legs are like toothpicks. She is dressed in a silver-and-lavender dress, shiny iridescent and short, silver stockings, and silver shoes. She has a lavender choker necklace. Her nose is very pointy, much exaggerated, and I think at first this is a Jewish trait, but then I remember Barbara Streisand's nose and think otherwise. Her hair is auburn. She sits on the floor in a contorted position that makes her thin limbs remind me of an alien, yet she is still elegant, almost fragile. I am doing the talking, and she seems to ignore me. Another woman sits with us and begins talking to me, and I become very annoyed—couldn't she see I was talking to this silver woman?

We break up into groups to infiltrate the building. I quickly lose my group. I walk to the front desk which I know is on the 14th floor. The hallway and desk remind me of a 1930's elementary school: brown, wood, linoleum, tile, plaster, etc. I come to the front desk, holding the binoculars and a card with all my information on it, including mailbox number and locker number. I hand the man at the desk my binoculars and ask him to put them in my mailbox, pointing to the number on my card. He says that number is my locker, up two floors on the 16th floor. I thank him and look for a stairway. The stairway is across the hall from the desk. A metal detector separates me from the green stair. I hold my breath and walk through it. The alarm goes off and I stop paralyzed as a black man descending and a black woman ascending the stairs watch me. The alarm stops and we continue on our ways. I notice the stairway in front of me is actually a pair of escalators, up and down, but both emptying onto my level. I turn right to find another stair. The hallway to the right becomes a vertical mingling of levels connected by floating stairs. The walls of the hall are a deep rich velvet green, and the floating stairs (actually suspended from above by black wires) are dark inlaid wood. I ascend the stairs 1/2 level into a grand atrium space. A feast is in progress: two dozen people are seated along a very long table eating. I notice M. is sitting by herself on a bench over to the side of the party. I approach her and talk with her. I suddenly realize I would never talk to her like this, so I must be in a dream. If this is a dream, I better do something dreamlike. Immediately M. begins giving me oral sex. I am so amused by this development that I beg her to stop and I walk off laughing.
Project One is an eight-screen movie theater in downtown Chicago, Illinois, located on Block 37, at the corners of State and Randolph streets. The project blossomed from being a handful of screens subtly integrated into a larger development to the block-sized building and plaza incorporating the existing ice skating rink. The giant truss supports the bulk of the theaters over the skaters, while the stairtower moves travelers up into the theaters.
Project Two evolved quickly out of the frustrations of Project One. The theory of the PlaceMachine was becoming watered down in the increasingly complex yet important urban issues embraced by Project One's site. Project Two condenses and simplifies the main ideas put forward at the beginning of this book. Those ideas boil down to six moments, or criteria for design, which, in turn, became the criteria for the design of this PlaceMachine. It has the same basic program of Project One, that being a cinema, but the audience is restricted to twelve, and the site is arbitrary.

6 Moments, or Criterion

We first have to become aware of a THING, an OBJECT, existing (being) apart from the LANDSCAPE. The exterior treatment of the object, or MATERIALS, must give indication to use function, purpose, time, age, placement, and connection to humankind (i.e. a loaf of bread LOOKS-LIKE a loaf of bread, not a car. A PlaceMachine must LOOK-LIKE a PlaceMachine.) (A paradigm-less object/symbol will have to rely on existing symbologies to fulfil this role.)
two: entry:

We attack the architecture with our BODIES. We gain information from all other senses about this THING—we TOUCH it, HEAR it, can TASTE or SMELL it, it arrests our BALANCE, it might SHOCK or MAGNETIZE us—we are within its SPHERE-OF-INFLUENCE. Visual stimulus is still the major informant, but all other senses are talking now, completing a picture of its THING-NESS. Also, we can now no longer take in the THING-AS-A-WHOLE, but we take in PARTS or THING-AS-PARTS (remember we have the memory of the THING-AS-A-WHOLE, and the PARTS flesh out that image). Also, we transition from OUTSIDE to INSIDE at this point. This is the TRANSFER or THRESHOLD. This is a metaphysically unique point. Our universe decreases in size and complexity, sensory information becomes focused and less complex and random, and we experience the most basic of all ideas—the WOMB.

three: inside: architecture appears:

By moving onto and into this PlaceMachine, we have learned its purpose and uses, its placement and location in the universe, its relationship to us—physically and metaphysically—and we have had our first metaphysical experience at the THRESHOLD. Now we are inside and KNOW what is to come. The architecture inside must be functional.

- Materials must eat light, not reflect light from the screen, as to distract the travelers from the images.
- Seating must be absolute in comfort, effortlessly conforming and reforming to the body so as to dull the sense of TOUCH—the seats must disappear to the body.
- Sound and vision must be all-encompassing, i.e. flawless.

But the architecture appears. The criteria for the inside are more stringent for its disappearance than its appearance.
four: inside: architecture disappears: place changes

There must be a moment that all (most)
sense information is removed. We must
experience NO-PLACE. This is the
transition, and this is the second meta-
physical event. The lights dim, the venti-
lation slows and stops, the travelers sense
the change in light and fall silent, and the
lights extinguish. For a brief moment—
two seconds—there is no light, no sound,
no smell, no touch, no changes in balance,
no electromagnetic phenomena, no taste,
etc. NO-PLACE is for two seconds. Then
the movie starts, lights, goes. We are
SOMEPLACE else, and we are in that
place for an hour-and-a-half or more or
less.

five: inside: architecture reappears:

The place movie winds down, and the
travelers sense the ending. As the cred-
its appear, the lights slowly light and we
return SLOWLY to the inside architecture
of the PlaceMachine. Now the architecture
is slightly different—caused by the lights.
Visually, physically, we are in the same
PlaceMachine, but due to our travels, we
have returned differently. Now light comes
from above rather than below, or some-
thing like that.
six: exit:

Exit is the reverse of entry, but with the addition of memory. We remember the THRESHOLD and the metaphysical jump from OUTSIDE to INSIDE. We exit along the same path as the entry, touch the same materials in reverse succession, and view the point we came from. This exit is the PHENOMENOLOGICAL washing away of place. We take only the memory.
Dear Dr. Science,

Who invented the wheel? Have there been any infringements of the patent?

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Paul Mathewson, Sarnia, Ontario, Canada

The wheel was invented by Thomas Edison, along with almost everything else. I think the year was 1882. Before that time, everything slid around on a thin layer of slime mold, an odorous and unsightly substance that was just one of the miseries of living in those most sad times before the Internet. The hardest part for the Wizard of Menlo Park was to get the spokes of the wheel to appear to rotate backwards in movies, which he also co-invented with George Lucas. Well, Edison eventually solved the problem by using scintillating fossilized snakes, which glow under ultraviolet light, the kind projected from lenses of motion picture cameras. Yes, it gives greater meaning to this scientist's widely-quoted observation that "genius is one per cent inspiration and two-thirds slime mold."

emphasis added
The 32 Senses from Mandel: The Seven Mysteries of Life: an Exploration in Science and Philosophy.

The Instinctive Senses
1. Sight: including seeing polarized light and seeing without eyes (heliotropism or sun-sense of plants).
2. The sense of awareness of one’s own visibility or invisibility and the consequent competence to advertise or to camouflage via pigmentation control, luminescence, transparency, screening, behavior, etc.
3. Sensitivity to radiation other than visible light, including radio waves, x-rays, gamma rays, etc., but omitting most of the temperature and electromagnetic senses.
4. Temperature sense, including ability to insulate, hibernate, estivate, etc. This sense is known to have its own separate nerve networks.
5. Electromagnetic sense, which includes the ability to generate current (as in the electric eel), awareness of magnetic polarity (possessed by many insects) and a general sensitivity to electromagnetic fields.

The Feeling Senses
6. Hearing, including sonar and the detection of infra- and ultra-sonic frequencies beyond ears.
7. Awareness of pressure, particularly underground and underwater, as through the lateral line organ of fish, the earth tremor sense of burrowers, the barometric sense, etc.
8. Feel, particularly tough on the skin and the proprioceptive awareness of intra- and intermuscular motion, tickling, vibration sense (such as the spider feels), cognition of heartbeat, blood circulation, breathing, etc.
9. The sense of weight and balance.
10. Space or proximity sense.
11. Coriolis sense, or awareness of effects of the rotation of the earth.

The Chemical Senses
12. Smell, with and beyond the nose.
13. Taste, with and beyond the tongue or mouth.
14. Appetite, hunger and the urge to hunt, kill or otherwise obtain food.
15. Humidity sense, including thirst, evaporation control and the acumen to find water or evade a flood.

The Mental Senses
16. Pain: external, internal, mental or spiritual distress, or any combination of these, including the impulse and capacity to weep.
17. The sense of fear, the dread of injury or death, of attack by vicious enemies, of suffocation, falling, bleeding, disease and other dangers.
18. The procreative urge, which includes sex awareness, courting (perhaps involving love), mating, nesting, brooding, parturition, maternity, paternity and raising the young.
19. The sense of play, sport, humor, pleasure and laughter.
20. Time sense and, most specifically, the so-called biological clock.
21. Navigation sense, including the detailed awareness of land- and seascape, the position of the sun, moon and stars of time, of electromagnetic fields, proximity to objects, probably Coriolis and other sensitives still undefined.
22. Domineering and territorial sense, including the capacity to repel, intimidate or exploit other creatures by fighting, predation, parasitism, domestication or slavery.
23. Colonizing sense, including the receptive awareness of one’s fellow creatures, of parasites, slaves, hosts, symbiots and congregating with them, sometimes to the degree of being absorbed into a superorganism.
24. Horticultural sense and the ability to cultivate crops, as is done by ants who grow fungus, or by fungus that farms algae.
25. Language and articulation sense, used to express feelings and convey information in every medium from the bees’ dance to human literature.
26. Reasoning, including memory and the capacity for logic and science.
27. Intuition or subconscious deduction.
28. Esthetic sense, including creativity and appreciation of music, literature, drama, of graphic and other arts.
29. Psychic capacity, such as foreknowledge, clairvoyance, clairaudience, psychokinesis, astral projection and possibly certain animal instincts and plant sensitivities.
30. Hypnotic power: the capacity to hypnotize other creatures.
31. Relaxation and sleep, including dreaming, meditation, brain and wave awareness and other less-than-conscious states of mind like puation, which involves cocoon building, metamorphoses and, from some viewpoints, dying.

The Spiritual Senses
32. Spiritual sense, including conscience, capacity for sublime love, ecstasy, a sense of sin, profound sorrow, sacrifice and, in rare cases, cosmic consciousness.
ONE Introduction

TWO Idea

THREE Five points

1. This exhaustive study is contained in *The Mind's I*, edited by Douglas Hofstadter and Daniel Dennett.

2. How close he was! Robert Omstein speculates the cause of the move toward larger brains in the Homo genus was due to the radiation of heat, and the additional neurons were "recruited" into new organizations according to something he calls "neural Darwinism". "When the forests thinned in East Africa, our ancestors found themselves "suddenly," in evolutionary time, with less shade, in higher temperatures. As they needed to cover long distances, the loss of shade made extra cooling a necessity. The requirements of living in a warmer environment made necessary some important body changes that later caused the brain to mushroom..." (1991), 162.


6. Ibid., 204.


FOUR Process

FIVE Projects


Descartes, René. *Meditations.* 1641.


