

Of Games,
The Infinite
and Worlds:
The Work
of Gabriel
Orozco

ex libris
Karsten Schubert

Of Games,

...

The Infinite

and Worlds:

by

John Gabriel

Trozco

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The Douglas Hyde Gallery,

Trinity College,

Dublin 2, Ireland

t +353 1 6081116

f +353 1 6708330

e dhgallery@tcd.ie

www.douglashydegallery.com

MERZ/Luc Derycke & Co.

36 Geldmunt B-9000 Gent, Belgium

t + 32 9 329 31 22

f +32 9 329 31 23

e luc.derycke@pandora.be

www.lucderycke.be

Of Games,

MIGUEL GONZÁLEZ VIRGEN

The Infinite

and Worlds:

The Work

THE DOUGLAS HYDE GALLERY, DUBLIN

of Gabriel

MERZ

Orozco

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PROLOGUE

by John Hutchinson

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PROLOGUE

THE BROOM

1

John Cage first met Marcel Duchamp in the 1940's, but they only became friends twenty years later. Cage knew that Duchamp was a serious chess player, and he used this as a pretext to get to know him better. Cage simply asked Duchamp to teach him the game. So, for the last three years of Duchamp's life, the two men (and Teeny Duchamp) met at least once a week and concentrated on chess. Cage, it seems, wasn't an especially formidable opponent. 'Don't you ever play to win?' Duchamp kept asking.

Duchamp probably had less interest in Cage's work than Cage had in his. Duchamp didn't particularly enjoy listening to music, although its fugitive quality fascinated him—he liked to amuse himself by thinking of ever more elusive sounds, such as the faint rustle of one leg of a pair of corduroy trousers against another.

This, perhaps, was less whimsical than one might suppose. Duchamp, after all, was convinced that the 'infra-mince'—a curious form of being that has been loosely defined as 'a movement between two physical states, a transition expressing both difference and connection, a void empty and full'—is at the heart and core of things.

Gabriel Orozco has said that movement generates a void. He, too, likes making art that is a kind of disappearing act, a series of traces. Many of his procedures and strategies, like Duchamp's and Cage's, are akin to games—banal, playful, sometimes absurd, but always internally consistent and possessed of a certain intelligence.

A characteristic of most games, and one that Orozco finds fascinating, is the relativity of their moves. Nothing makes sense in isolation. The same idea can be manifested on a grander scale: the universe may be seen as a dynamic web of interrelated events, none of whose properties are fundamental. Every one of them is inseparable from the properties of the others, and the overall consistency of their interrelations determines the structure of the entire network. All of this is a process of constant movement and flux, halted temporarily at moments of stillness or transition.

3

'The centre everywhere, the circumference nowhere, the perfect labyrinth is the desert', Gabriel Orozco once wrote.

This thought is close to the Buddhist idea of 'interpenetration', much loved by John Cage, which is beautifully explained in the last part of the Avatamsaka Sutra. In the Gandavyuha, the story is told of a young pilgrim, Sudhana, and an account is given of his mystical experience of the universe, which appears to him as a perfect network of mutuality, where all things and events interact with each other in such a way that each of them contains, in itself, all the others. The symbol of a tower is used to convey something of Sudhana's experience:

'The Tower is as wide and spacious as the sky itself... And within this tower, spacious and exquisitely ornamented, there are also hundreds and thousands of towers, each one of which is as exquisitely ornamented as the main Tower itself and as

spacious as the sky. And all of these towers, beyond calculation in number, stand not at all in one another's way; each preserves its individual existence in perfect harmony with all the rest'.

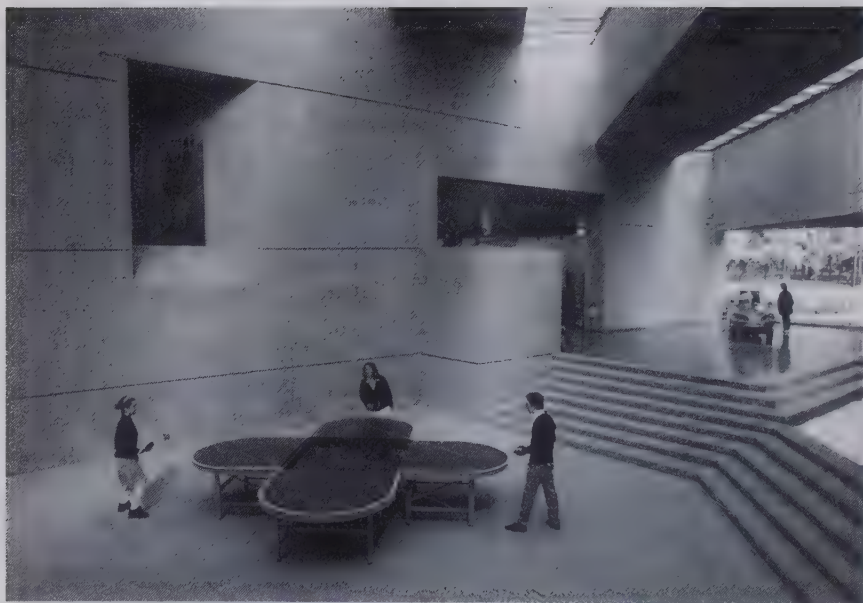
Sudhana, the young pilgrim, sees himself in all the towers as well as in each single tower, where all is contained in one and each contains all.

4

In this exhibition, everything seems to hover. There are connections between the photographs (so precise in their intuitive formality), the uplifting and deceptively unstructured video, *Jaipur Kites*, and the new sculptural installation, *The Weight of the Sun*. The overall impression is one of openness and balance, given an edge by the hand of a trickster. The work is positioned firmly and gently at the very point of 'infra-mince' that is crucial to the understanding of Orozco's art; it is at once a game, a passing gesture, and a complex set of references to ideas both trivial and profound. In that respect, it is not unlike a riddle or, perhaps, a *koan*.

Gabriel Orozco's most engaging art is cunningly egoless, grounded in deep visual awareness and structured within the framework of contemporary cultural discourse and site specificity. Here, with a swift series of moves, both in the construction of the new piece and in its juxtaposition with older work, he has created a world of lightness out of the discarded and the overlooked. In a typically complex act of transformation, Orozco has turned an everyday object into a symbol and then back again into ordinariness. The broom has become an emblem of all that orders and cleans, a source of light, the centre of a cosmos, and the nucleus of an atom. But after all the varied associations have been teased out and noted, it reverts, as do the other pieces in the exhibition, to something like nothingness.

JOHN HUTCHINSON



Ill. 1 Ping-Pond Table, 1998

THE ARCHITECTURE OF THE GAME

... Nobody, when judging that novel, will fail to discover that it is a game; it is appropriate to recall that the author never considered it anything else. I claim for that work, I heard him say, the laws that are essential to all games: symmetry, arbitrary rules; tedium.

JORGE LUIS BORGES, "Review of the work of Herbert Quain."¹

1 *Ping-Pond Table*

Gabriel Orozco may also consider some of his works as just mere games.² As a vindication of symmetry, arbitrary rules, and tedium, perhaps none of his works is more exemplary of the laws of games than *Ping-Pond Table* (1998). Like all archetypal games, this work is a microcosmic representation of the temporal and spatial structure of the universe. Like any game, it is also a way of interacting with and influencing directly the perception of the universal structure. Unlike most games, however, *Ping-Pond Table* is an epistemological exercise in accessing and revealing the spatial and temporal mechanisms for the production of the symbolic structure of the world, as well as its lines of rupture and of access to the infinite. It is, finally, a key piece in any tentative approach to the artist's work.

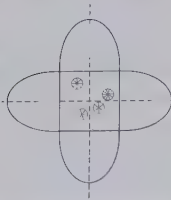


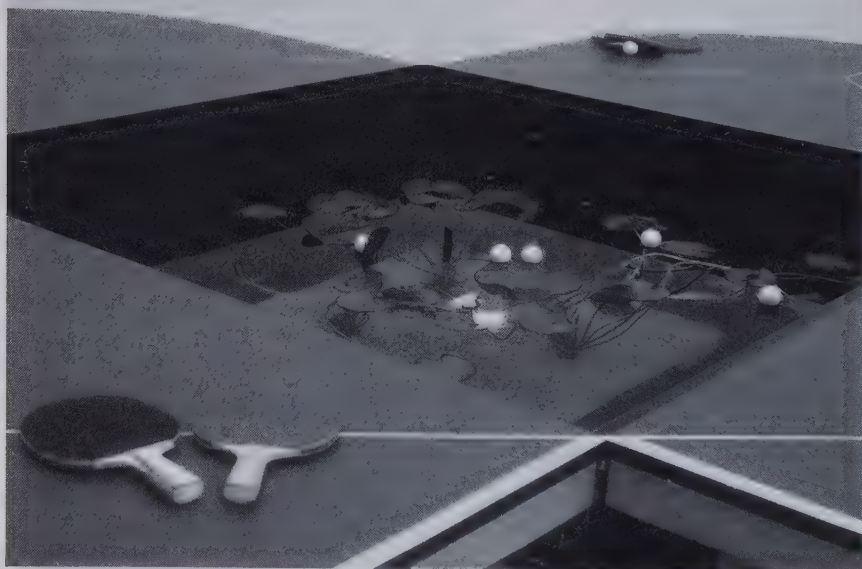
Fig. 1 *Ping-Pond Table*, plan

Plan

Two oval-ended ping-pong tables have been cut through the middle, their four halves rearranged around a square lily pond. The inner edges of the tables demarcate the boundaries of the aquatic

square. The flat surfaces of the half-tables are aligned following two central axes perpendicular to each other.^(Fig. 1) Two players bounce off their serve; the confronting players wait for the balls to bounce off their own quad in order to return them; the game goes on until any of the balls falls outside the playing field or into the pond. The game starts all over.

The symmetry of the game is rigorous with regard to the physical area of the players and their possibilities; arbitrariness lies in the spontaneous rules that the two or four players happen to make up, yet turns into an absolute indeterminate with



Ill. 2 *Ping-Pond Table*, 1998. Detail

the introduction of the pond (complete with water lilies) as centrepiece. The museum guards watching over the matches embody the requisite tediousness.

Isometric

Out of the three elements inherent to any game, *Ping-Pond Table*

contains one with a disruptive, unsettling function. Water, the arbitrary element, immediately tells us that something besides mere chance is involved. The pond, full of water lilies in bloom floating over a bed of aquarium pebbles, awakens poetic memories of Chinese gardens, of Monet's *Nymphs*, of the enchanted pool where the Little Prince lost his Golden Sphere. The water stimulates a sense of poetry and contemplation, and is therefore an element that contradicts the agility of the players. Another level of the game starts to be uncovered.

The ball falls into the water. The game stops while one of the players retrieves the ball. The game starts again. The ball is wet. Wherever it bounces, it leaves an ephemeral splotch of wetness. Soon we have a series of splotches, a map of bounces which, however, begin to fade away leaving behind a faint trace. The tenuous imprints left by the bouncing balls on the surfaces of the tables are also a clock that record the game's time. (Fig. 2) The ball falls into the water again. The clock stops. Time stops. Poetry is activated.

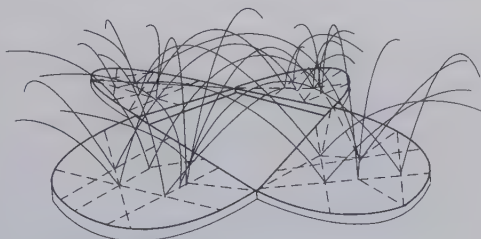


Fig. 2 Ping-Pong Table, mapping the bounces

The serene pond, contrasting with the rhythmic activity on the table surface, disrupts the game's time. In stopping it, and in activating the a-temporality of memory, the pond connects with the timelessness of poetry through a symbolic symmetrical axis. In stopping the game's time, the pond connects the players with eternity, if only fleetingly.

Section

As seen in a schematic architectural cross-section, (Fig. 3) the game tables actualize the mapping surfaces of time, which stops at the line of symmetry—i.e., the connection to the infinite pro-

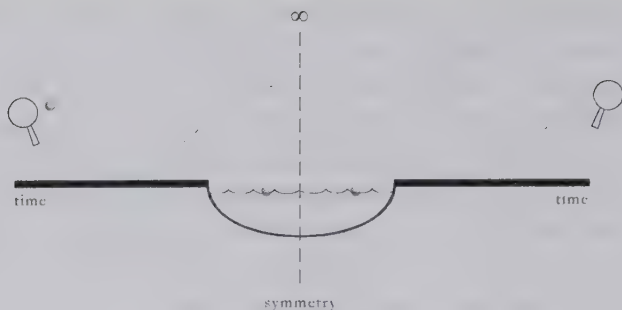


Fig. 3 Ping-Pond Table, section



Ill. 3 Ping-Pond Table, 1998

vided by the pond in the centre. What roles should we assign to the balls, their trajectories or the players?

A look at other works by Orozco can help us clarify the role of these other elements. In turn these elements throw light on the nature of the works themselves.

2 *Until you Find Another Yellow Schwalbe*

Destiny enjoys repetitions, variants, symmetries.

JORGE LUIS BORGES, "The Plot".³

In *Until You Find Another Yellow Schwalbe*, staged in 1995 in the streets of Berlin, Orozco makes use of a motorcycle that, before the dismantling of the Wall, had been a basic commodity in the life of Berliners. He rode one yellow Schwalbe through the city streets. Whenever he found an identical motorcycle, Orozco parked next to it and proceeded to photograph the event.

Orozco arranged the motorcycles in such a way as to stress not only their *identity*, but also the line of symmetry that links one motorcycle to the other. It would seem that the artist's operation consists rather in placing a flat reflecting mirror in front of each yellow motorcycle that he finds, thus devaluing the objective *aura* of the motorcycle. (Fig. 4) But it also suggests the symmetry of the *event in itself*, of the event of riding through the streets of Berlin on a yellow Schwalbe motorcycle and finding that someone else has travelled the streets of Berlin on a yellow Schwalbe motorcycle. With one motorcycle symmetrically facing the other, we do not know which motorcycle is Orozco's or which somebody else's. It is unimportant; what matters is the symmetry between the objects and within the event.

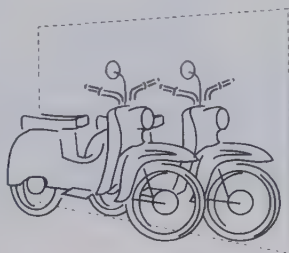


Fig. 4 Mirrored Schwalbe.

A diagram developed from a sketch by Orozco⁴ translates into schematic form the artist's circulatory operation through the streets of Berlin. (Fig. 5) Orozco's orthogonal lines suggest that he rode his motorcycle following a kind of abstract chess knight movement on a chessboard. The knight—the artist on

motorcycle—continuously moved into a confrontation with his symmetrical counterparts on the chessboard, the urban grid.⁴ In an interview, Orozco strongly emphasized how he had the

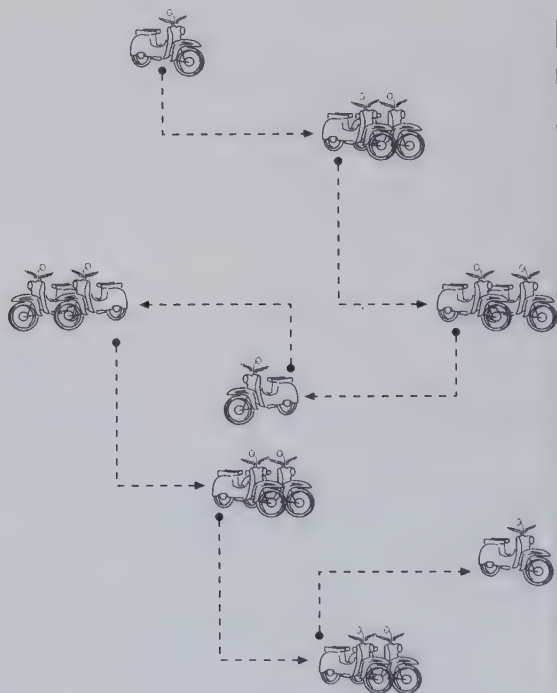
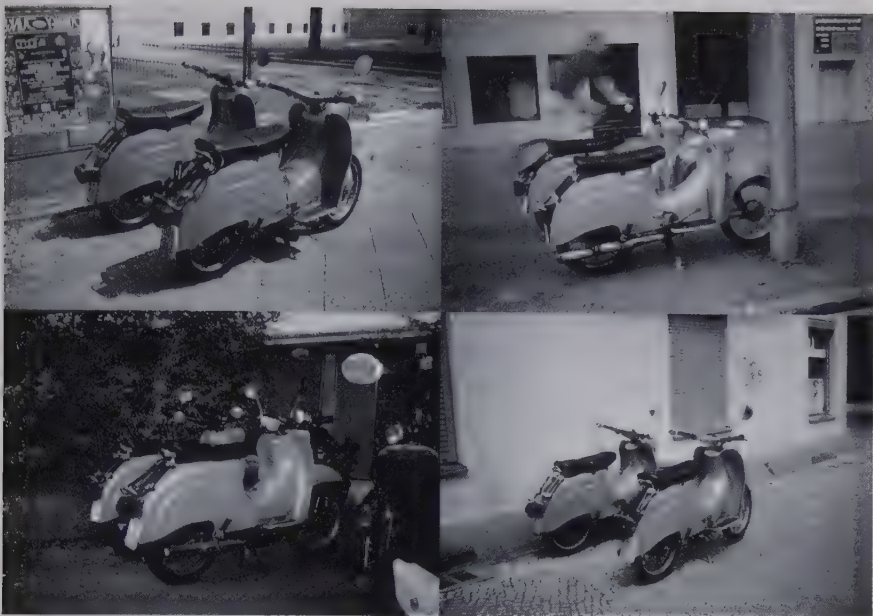


Fig. 5 Until You Find Another Yellow Schwalbe

photographs of the event arranged on the gallery walls. The photographs, at eye level, were linearly disposed so as to be viewed in a continuous promenade around the gallery partitions.

In arranging the photos in a linear, rhythmic pattern, I wanted the spectators to feel like they were watching a linear sequence of two parallel motorcycles moving together. Almost like one of those nineteenth century photographic sequences of the movement of the body. I wanted to reproduce, somehow, the motorcycle's movement through the city.⁵

The effect was one of projecting onto the spectator the feeling of actually moving through the streets along with a mir-



Ill. 4 Until You Find Another Yellow Schwalbe, 1995

ror image of his or her motorcycle. The spectator is in fact made to move physically from photograph to photograph, from event to event; he or she is pressed into re-enacting an enthralling dynamism of motorcycle racing through both city traffic and history. It is a sort of Futurist ecstasy of noise and speed, of mechanical acceleration through a Borgesian labyrinth of mirrors.

Arbitrariness

The streets of Berlin as the board of a game. The chess pieces are Schwalbe motorcycles that survived the fall of the Wall. The board surface marks the temporal accidents. Orozco serves first. He lobbs a Schwalbe toward the other side of the playing field. Accidents take place. Orozco receives a Schwalbe back. He stops to observe the frozen game, recording it. He continues until he finds another player.

Dullness

In the universe according to Orozco, everyday objects are the balls with which we play on the playing field of our daily routines. Time allows, and structures, the space of the game. On one side of the table, the player is the spectator, or the artist. On the other side, the player may be another spectator, another artist or, simply, reality that returns the object. Certain objects and certain game boards (time structures) allow a more agile and direct game than others do. Schwalbe motorcycles, symmetrical and mobile objects, "bounce" easily from one side to the other of a game board intensely structured by the time of historical memory, such as it is in the city of Berlin.⁶ Symmetry, however, is always the same: the connection to the infinite where time stops, the tedium of eternity.

Trajectories

The trajectory of the ball is the event itself: movement, what goes on within a space that is defined and modulated by time. When the ball touches the surface, it suffers an inflection on the curve of its trajectory. These inflections are the accidents that unexpectedly propel the event in another direction, towards another player. This is of vital importance to Orozco: "Accidents may interest me, not because of their dramatic function, but because of their almost surgical ability to suddenly reveal how things work."⁷

An object's course from one player to the other—the parables of their trajectory, whose points of inflection are in the temporal structure (game board)—is the *event* that moves through a space geometrically modulated by time. The event, in fact, can only take place in the space defined by the playing area. When the ball bounces off outside this arena, the game stops. The event no longer takes place. *Until You Find Another Yellow Schwalbe* could be played only during the historic transition of Berlin in the early 90's. Now it is possible to define all of the structural elements of *Ping-Pond Table* (Fig 6).

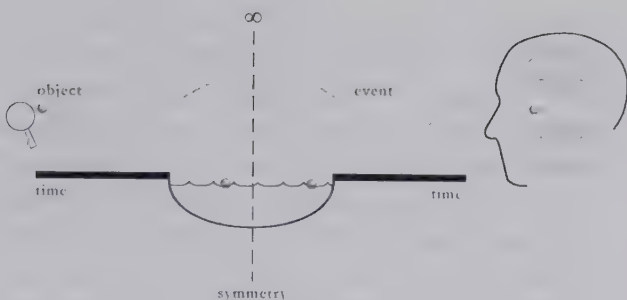


Fig. 6 Ping-Pond Table, elements

3 *La DS*

Talking of Bishop Berkeley... I remember him writing that the taste of an apple is not in the apple itself—the apple does not carry taste within itself—nor in the mouth of whoever eats it. Taste demands the contact between both.

JORGE LUIS BORGES, "The Enigma of Poetry." *Norton Lectures at Harvard University.*⁸

Perception and Memory

What is the purpose of this game? To strike objects that travel in parabolic trajectories through spaces structured by temporal surfaces and inflected by accidents—what is the point?

The game described by Orozco is the continuous exchange between the object as reality *per se*—an "essence"—and the conceptualization of that object by each player-subject. Each subject, in other words, is involved in a non-stop game of give and take between the exterior objective universe and his own, inner, symbolic-conceptual framework. The universe, on one side of the table, is the incomprehensible objectivity of essences. The subject, on the other side, is their necessary categorization into a symbolic structure.

That this is the key point of the game, as Orozco understands it, is revealed by the artist in his work *La DS*. In it,

the artist not only refers to the underlying elements of the game, but also transcends them to the point where he is able to manipulate and alter the game mechanism.

Let's see: this time in France, Orozco has sliced in half a classic Citroën DS automobile. He has then sawed off a continuous slice from the interior face of each half, and then reassembled the car. The trickster has been careful to retain the formal qualities of a driveable object (keeping the steering wheel, for example). The result is a car-object from which



Ill. 5 La DS, 1993

an entire slice seems to have disappeared. Shock; for spectators, the effect is that of a normal car in which a mirror has been inserted along the driver's side, and what they see is the original side and its reflection. Most of the passenger side is gone, but the car still has its four wheels: it is the mirrored slice of the Citroën.

With this piece, Orozco forces spectators to reconsider the way they perceive and assimilate the car. Confronted with an object that is strangely incongruous to the one with which they are familiar, spectators experience a certain distress because the rules of the game have been changed. In fact, it seems as if before them is no longer an object but rather the mirror image of that object. "At other times I have said," Orozco reminds us, "that *La DS* is like a three-dimensional photograph in a way, because of the effect it has on spectators. Suddenly, it seems like a photograph, as if it were unreal. This has to do with the memory of the object, which was my point of departure. When we confront that car, we feel that we are looking at an image."⁹

Relating *La DS* to our *Ping-Pond* scheme, Orozco, by removing the central band along the car's central axis, has suspended and frozen the original car right at the moment it crossed the game table's axis of symmetry.^(Fig. 7) By suspending it over that symmetry line, that portion of the car entered into contact with symmetry and fell into the waters of eternity. Confronted with this situation, spectators intuitively grasp that a mechanism of non-comprehension has been triggered. They were prepared to apply their concept of a Citroën, but since that is no longer possible, the car hovers on the brink, halfway between essence and memory.

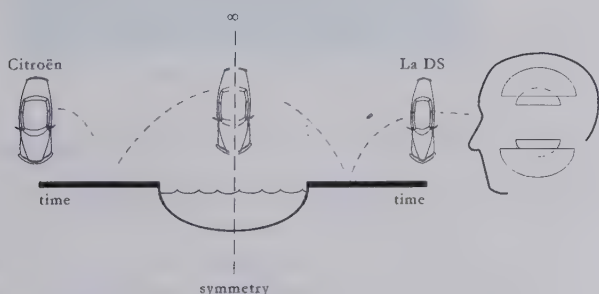
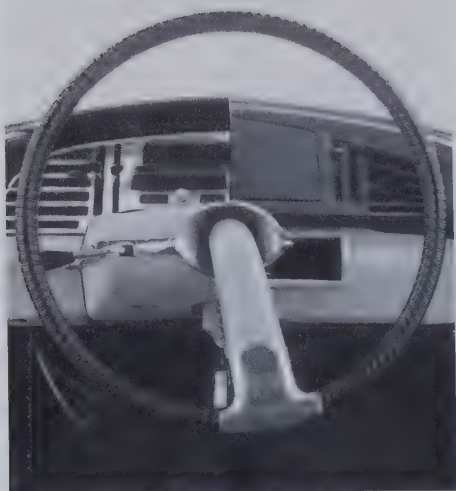


Fig. 7 *La DS*, frozen over symmetry

Orozco has been very explicit about his interest in the line of symmetry, which he sees as an absence, a non-dimensional void:

I have been interested in this notion of missing space that is still there and how a thin line that divides two bodies is not measurable. Of course, physically it is very thin, but emotionally or mentally it is much bigger and is immeasurable. In my work, I think, it is that space which interests me as a sculptor. I believe that this space has to do more with consciousness and the mental than the physical. Disappeared physically but very present mentally or emotionally, conceptually or virtually—whatever you want to say. It's there; the space is there and you can feel it.¹⁰



III. 6 *La DS*, 1993. Detail

There is another mechanism revealed through the manipulation: upon perceiving an object, the spectator must send that apprehension into his memory so as to compare *perception* with his own catalogue of *memorized things*, in order to classify it. This suggests a new game within the spectator's mind, where objects entering his mental space are no longer

essences but things domesticated by the senses, things which must then be tossed to the other side of the table, to memory, the other inner player.^(Fig. 8) We have then a new game platform, another spatial fabric woven by time, but now a mental time. This is a time that structures the space of the mind: *Black Kites* (1997).

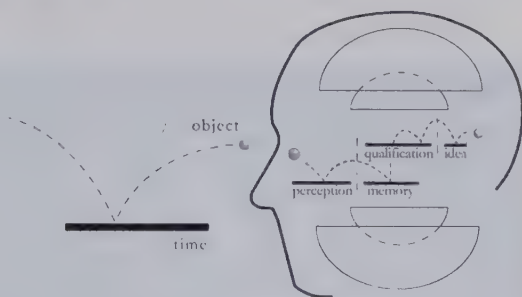


Fig. 8 Mental space: the infinite ping-pong game of signification

In this work, Orozco has depicted the map of mental time by drawing a geometric grid on a human skull. This map surface structures in turn mental space. The grid structures the timing of the games that understanding must play in order to arrive at the signification of a sensory perception. *Black Kites* is, in this sense, the “portrait of space,” as Orozco himself outlined in his notes about the skull:

TO DRAW ON A BONE STRUCTURE DESCRIBING THE THREE-DIMENSIONAL IDLENESS.

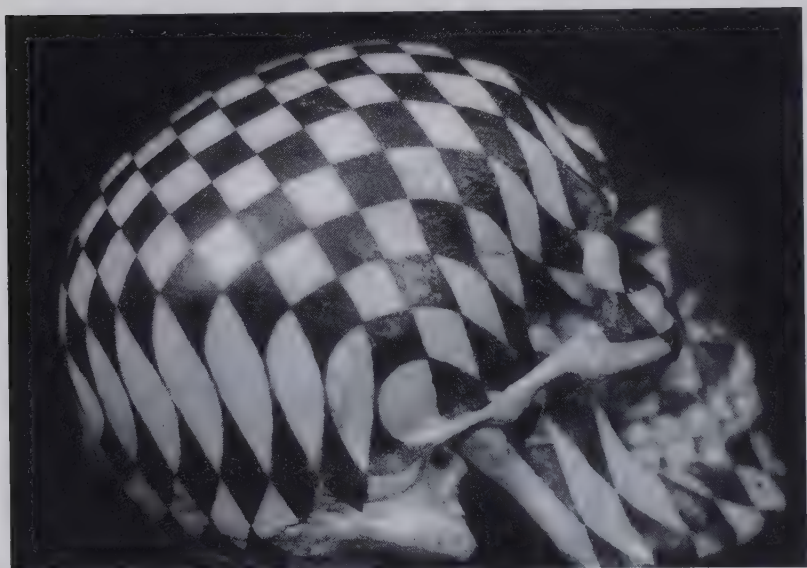
LINE OVER VOLUME. TOPOGRAPHY OF THE CRANIUM. ENTERING THE EYES. LOSING ITSELF. PORTRAIT OF A SPACE.

A SPACE THAT HAPPENS. SUCCESSION OF LINES, SPACES AND TIME. TO KILL TIME.

GRID OF THOUGHTS. CONNECTIONS. AWARENESS AS A GRID OF PERCEPTION. . .”

La DS has been in fact left suspended over two lines of symmetry, that of the exterior game and that of the interior,

mental game. In the inside of the cranium, it is frozen in the in-between of two antagonistic areas: that of the perceived image and that of the memory of the pre-classified DS. This is the non-space that Orozco describes as *absent*. It exists as a non-physicality in the exterior but has more importance as a mental line that is emotionally incalculable. That line is the connection to eternity, where time ends and poetry begins.¹²



Ill. 7 *Black Kites*, 1997

4 *Game mechanisms*

The players

Orozco suggests on various occasions that the mental swing that sends the ball back into the space of actual events is itself a micro-game.

Spectators musing over the photos from *Until You Find Another Yellow* inevitably engage in the following mental exercise: after assimilating the initial surprise that comes

from the existence of so many nearly-identical motorcycles, they will compare to one another each of the motorcycles in order to discover possible differences and in the process even identify the artist's motorcycle. The differences are minimal, Orozco going to great lengths to hide the individuality of his own bike. The spectator's memory must work at high gear. The ball bounces from one side to the other of the mental line of symmetry before being ejected to the outside.

On the other hand, Orozco's use of an *obsolete* object for the new Berlin, as Benjamin Buchloh¹³ points out, hints at the workings of symmetry within the human mind: as spectators, we compare the motorcycles, repeatedly attempting to cross the symmetrical line between the new (perceived) object and the original (memorized, historical) object. The obsolescence of the Schwalbe—as well as that of the Citroën, an object already obsolete in France when he took to work on it—helps to make more evident their suspension in the in-between of sensory perception and memory.

The process revealed by Orozco suggests an infinite structure for the game of signification: the ping-pong game is repeated *ad infinitum* in increasingly smaller scales, within mental space—in an interval that is almost instantaneous—before the object can emerge as a categorized and domesticated subject.

At the start, facing each other from the ends of the table, the objective universe and the spectator are playing. The ball flies to the spectator; he catches it with his perception and sends it in to the field-time of memory. Memory itself develops in turn a game between, say, impression and qualification; qualification, a game between category and idea; idea, a game between concept and archetype; the archetypal game is played between Forms and the substance of Space... In this way the process of meaning—investment approximates a spiral—and thus infinite—progression,^(Fig. 9) where the perceived object begins a serial bouncing that moves with a

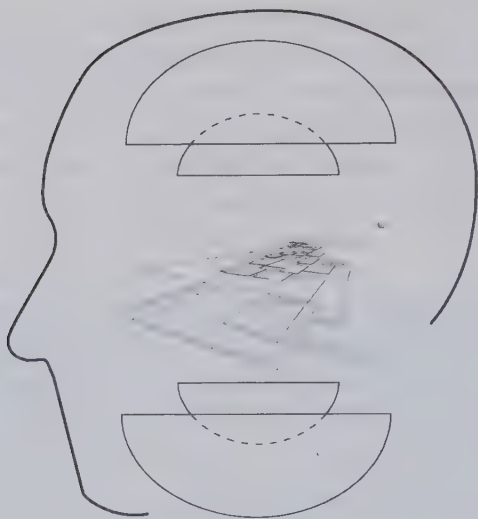


Fig. 9 Mental space: the infinitely spiralling ping-pong game of signification

speed approaching the limit of instantaneousness, before re-appearing again in external reality, categorized in speech, so that the player is able to say, “that *is* a Citroën.”

It is not surprising that, asked about the temporal development of his work, Orozco replied, “I do not see it as being linear—as with one moment following another and then another. Rather, I am constantly revisiting it. It is, I believe, more like a spiral, more like the universe.”¹⁴

A definition

The game is the continuous and dynamic exchange of meanings from one spectator to the other within the space structured and modulated by time, symmetrically divided by a line that connects to (or is) the infinite. One player registers an incoming object invested with the initial charge of meaning (*a*) that the previous player gave it before sending it out through the trajectory-event that the time-playing-field allowed. Time causes inflections in the trajectories and

affects, in its space, the meaning of the initial (*a*). The player receives an inflected (*a*) and returns it as (*a'*). It is a complex operation that involves each player's inner, spiralling game. Memory activates one part of the mental space: Qualification and idea; idea, the play area between Symbol and Archetype, and so on to infinity.¹⁵

Bouncing meanings

Certainly this game of continuously mobile signification is highly active in the gallery spaces showing Orozco's works. He starts with an object that reality throws at him. He then causes accidents in the process of perception, so that he returns the object as (*a'*)—an unsettling (*a'*) that invokes the mechanism of the game. Now, it is obvious that the opposite player-gallery-goer, as well as accidents on the gallery-playing-field, can cause the object to return to Orozco, now as (*a''*). Orozco provokes or creates accidents and momentary suspensions of the game, but does not stop it. During the retrospective held at MARCO in Monterrey, Mexico, Alfredo Consalvo asked him about possible “perversions” that spectators could introduce into his work. Orozco replied that he assumes as his responsibility as an artist that the spectator will receive work (*a'*) as (*a'*), without inflections from the museum space. However, if any spectator processes the work that he or she receives as neither (*a'*) nor (*a''*) but rather as (*b*) or (*c*) is perfectly fine for him, because the game continues and (*a'*) can experience inflections in the mental game fields of the museum visitor.

I believe that the accidental relationship between spectators—with their own prejudices, their knowledge and their information—and a new object with which they have to establish contact—that is a coefficient full of accidents, potholes and re-routings... I am aware that the work has many interpretations, but I am almost certain that “*a*” is transmitted as such, and for that I am responsible. Besides, I consider a work as effective when it should more or less transmit ‘*a*.’ Now, if it becomes ‘*b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*,’ that is the life of the work and the public is activating it.¹⁶

Orozco's favourite objects for manipulation are mobile, urban objects with a powerful mnemonic charge and symmetry about a central axis: motorcycles, bicycles, cars, elevators; or spherical everyday objects such as oranges, watermelons, lumps of modelling clay or soccer balls. These are objects that favour the manipulation of the main elements of the game: trajectories, the time map of urban memory, their powerful associative charge, symmetry. They help to reveal, similarly, the social, urban character of all the contemporary games of signification. Regarding this urban and mnemonic mobility, Benjamin Buchloh points out that "First of all, the three works *La DS*, *Habemus Vespam* and *Until You Find Another Yellow Schwalbe* are linked by their careful object selection: together they constitute a typology whose 'public' status appears to be already guaranteed by its mere affiliation with transportation, urban circulation, and consumer-culture design... Here collective social communication and interaction supposedly do still occur—even if only in the most banal and catastrophic form."¹⁷

5 *The time of art*

Poetry is not something rare: it is waiting, we'll see, around the corner. It can jump in front of us at any moment.

JORGE LUIS BORGES, "The Enigma of Poetry," Norton Lectures at Harvard University.¹⁸

"The space of art is secondary to the time of art," Gabriel Orozco once declared.¹⁹ Time is the game board that structures the space through which the trajectories of objects (the events) can be produced. Similarly, it is time which registers the accidents that affect trajectories, the surface that alters the movements from one side of the game to the other. The absence of time—which eliminates space—is also a con-

dition of the line of symmetry. The primacy of time is the reason that, for Orozco, only the aesthetic *moment* makes sense, because for him it is the only true activator of creativity: it is the moment that changes the trajectory of events, the moment of the accident, when an object (*a*) is altered by an accident on the playing field—because of this accident, the object is transformed and redefined:

What interests me, above all, is the time of art, not the space of art; in fact, the space of art does not matter to me. It can be a museum, the street... because, in reality, this happens in fragments of time, in moments when the artistic event takes place or the aesthetic experience occurs.²⁰

For Orozco, the *pure* aesthetic moment does not exist, that ideal moment of contemplation associated with museums. It cannot exist because the game is always activated: “There never was a pure moment. I do not believe that there has ever been a pure moment for the contemplation of art.”²¹

TANGENTS TO THE VARIABLE CURVE

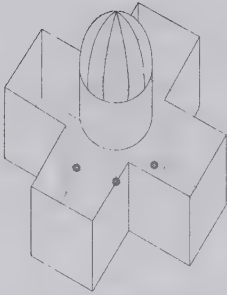
1 *Foucault's Pendulum*

Fig. 10 Foucault's Pendulum
at the Panthéon, Paris.

In 1851, Jean-Bernard-Léon Foucault, originally a physician, hung from the centre of the dome of the *Panthéon* in Paris a pendulum for the purpose of demonstrating and measuring the rotation of the terrestrial orb on its own axis. (Fig. 10) Foucault's pendulum consisted of a 28 kilogram iron ball suspended by a 67 metre long steel cable. The ball was left to swing by its own pendulum impulse.

Foucault's idea was that, should the earth be revolving on its own axis, a free-swinging pendulum would stay on the same *absolute* plane of swing while the spherical plane of the

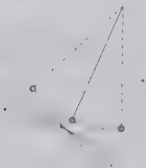


Fig. 11 The rotating earth ground under the
constant plane of Foucault's Pendulum

earth underneath moved in rotation. (Fig. 11) The pendulum had to have the sufficiently large frequency so as to allow the commensurability of the displacement of the plane beneath it. Actually, Foucault was able to measure Earth's rotation to an accuracy of 0.17%.²²

If hung from a dome just on top of the North Pole, Foucault's pendulum would show that the ground underneath its plane of swing rotates a full 360° in a counter-clockwise direction every 24 hours. As viewed by a stationary observer on the earth, the plane of the pendulum would be turning in a clockwise direction once a day. Because the axis of rotation of the earth runs through its poles, as the pendulum is moved

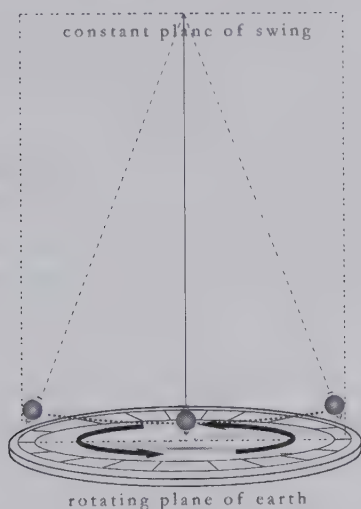


Fig. 12 Foucault's pendulum at the Panthéon.

towards the equatorial line the arc covered by its plane of swing becomes less and less. Placed right on the equator, the pendulum would show no displacement of the ground underneath. In Paris, (Fig. 12) Foucault's pendulum rotated clockwise at a rate of more than 11° per hour, completing a full 360° rotation relative to the earth every 30 hours.²³

For the most part, the nineteenth century was one of instrumental, not theoretical, development. Foucault was working during a historical period that saw great thinkers striving experimentally to prove and corroborate the momentous advances of the Baroque and the Enlightenment. The most

far-reaching of those advances had been, perhaps, the Copernican cosmological revolution. This was a product of the Baroque search for universal harmony. Its theoretical principles, however, were later revised and laid out by the Enlightenment thinker *par excellence*, Isaac Newton, in his *Principia Mathematica* of 1687.

Foucault hung his pendulum from the most magnificent product of Enlightenment architecture: the *Panthéon*. The building had been originally designed by Jean Jacques Soufflot as the Church of *St. Geneviève*, thinking of it as a rival to St. Peter's in Rome. The church had not been consecrated when the French Revolution broke out, and soon after the end of it the monarchic symbol was appropriated as a monument to the fallen and re-baptized as the *Panthéon*.

Not only did Soufflot want to mark a grand synthesis between the Piranesian interior grandiloquence and the Neo-classical "noble simplicity" of the façade, but also, in its constructional portents, he wanted it to be a paradigm of enlightened technicality. The gigantic scale demanded from the masonry construction all kinds of steel-bar-and-stone acrobatics. When Foucault hung his pendulum from the *Panthéon*, he was thereby claiming the total correspondence between the new, enlightened *tour de force architecturale*, and the new, rational understanding of the universe.

But it was a correspondence without harmony, and this difference is what marks the great break between Baroque and Enlightenment cultures. Joseph Rykwert drew attention to one such point of inflection in the historical transition from Baroque to enlightened Neo-Classicism. This was when, in 1683, Claude Perrault, architect to King Louis XIV, published a treatise about the proportions of the five orders of architecture, *Ordonnance de Cinq Espèces de Colonnes*. Perrault states flatly that there is no correspondence between musical harmony and the visual harmony afforded by geometric proportions.²⁴ And, although he did not reject the idea that

the human body is a model of visual proportions, he declared that those proportions can vary, just as nature created differently proportioned human frames according to their function in life.

With such statements, Perrault simply broke with, in the field of visual arts, the long-held belief in the classical harmony of the universe, the correspondence between macrocosm and microcosm through the continuous playing of the same notes through all matter and at all scales. The Baroque, on the other hand, still sought a universal harmony. Not the static, neoplatonic harmony of the Renaissance, but the harmony of movement and change and transformation—the harmony of infinite worlds as manifestations of One Substance, according to Giordano Bruno; God's Pre-established Harmony in the Best World according to G.W. Leibniz, to name two of the most important philosophers of that period.

2 *Oval with Pendulum*

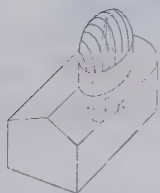


Fig. 13 Oval with pendulum at La Chapelle de la Vieille Charité

In 1996, Gabriel Orozco hung a billiard ball from the top of the dome of *La Chapelle de la Vieille Charité*, in Marseille, France. The ball is suspended by an almost invisible thread and is allowed to swing freely.^(Fig. 13) Orozco actually constructed his own version of Foucault's pendulum—with some variants.

The suspended billiard ball is in fact allowed to hang less than one millimetre above the felt surface of an oval-shaped billiard table. As it describes a pendulum arc, the ball escapes the playing area without touching the upper rim of the table.^(Fig. 14) It swings away barely (again less than one millimetre) above the inner edge. For this to happen, the suspended cable must be carefully measured to an exact length close to fourteen metres.²⁵

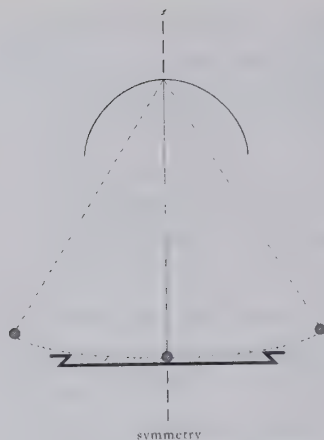


Fig. 14 Oval with Pendulum, section

A longer cable—with a wider radius of swing—would make the ball hit the table edge. A shorter cable would reduce the arc of swing, decreasing in turn the area of interaction of the pendulum ball with the billiards lying freely on the table. Next to the table, set as in any playing club, there is a set of cues. *Oval with pendulum* is in fact a playable Foucault's pendulum. The players—the spectators—set the pendulum in motion.

Orozco has made the billiard table mirror the elliptical plan of the rim of the cupola. This elliptical rim results, in plan, from the sectional cut of the egg-shaped upper dome. The egg shaped dome is, in turn, a Baroque device. Orozco has gone back to the Baroque.

Designed by Pierre Puget in 1679, *La Chapelle de la Vieille Charité* is regarded as one of the masterpieces of French Baroque architecture, while Puget is considered generally as the only "true" baroque French artist.²⁰ Interestingly enough, he thought of himself above all as a sculptor, next to being a painter and an architect. *La Chapelle de la Vieille Charité* appears, at first sight, as a version of the *Tempietto* of Bramante, in terms of being a pure architectural object set within the purely artificial space of a monastery courtyard.



III. 8 Oval Billiard Table, 1996

In this sense, they are both more sculptures than architecture, removed as they are from the social fabric.

Yet Puget's *Chapelle* is a *tempietto* elongated and then compressed, the Renaissance platonic microcosm inflected by the actual lines of the world as it transforms itself. The eccentricity of *La Chapelle de la Vieille* is made even more evident when compared with, for example, Soufflot's *Panthéon*. Against the spiritual dynamics of *La Chapelle de la Vieille* and its reduced scale, the *Panthéon* takes on the theme of the unchanging Laws of Heaven, displaying a grandiose show of the laws of static and gravity, the best frame for measuring the relentless turning of the earth on its own axis.

Is Orozco out to demonstrate and measure something at *La Chapelle de la Vieille*? It is as if Orozco wanted to re-interpret Foucault's experiment about gravity and terrestrial rotation setting it within the frame of Baroque conceptualizations which were the actual origin of the Copernican revolution. It can be helpful to analyse *Oval with Pendulum* with the terms developed earlier in regard to the mechanisms of Orozco's work.

As with all of Orozco's games—as with all games—we have again the basic components, the essential traits:^(Fig. 15) a play area (the temporal mapping of the game: history, an oval

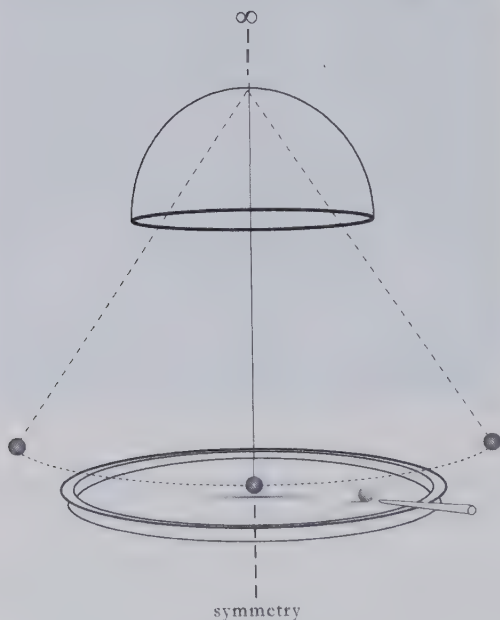


Fig. 15 Oval with Pendulum

table); the object of the game (the billiard balls, “things”); the line of symmetry (the pendulum billiard ball, infinity); and the players—(spectators, the artist, reality itself).

As in *Ping-Pond Table*, and as in *La DS*, the symmetry line that divides the play area is the key element to entering a discourse about the mechanisms set in motion by *Oval with*

Pendulum. The symmetry line is, of course, the hanging thread from which the billiard pendulum is suspended. It is a line that divides the game surface symmetrically around the 360° arc of swing. Yet here, even more than in any of the works previously discussed, the character of this symmetry line is made evident; as in Foucault's Pendulum, Orozco's line of pendulum is connected to the apparently absolute frame of space, set apart from the spatial/temporal frame of the earth/billiard table. Like Foucault, who hung his iron ball from the dome of the *Panthéon*, i.e., the symbolic representation of the celestial sphere, Orozco hung his ivory sphere from the centre of the cupola at *La Chapelle de la Vieille*, the cosmic egg from which all things hatch out.

But we are allowed to play with this ball. The oval billiard table is, like the floor of the *Panthéon*, the ground on which we move, or rather, with which we move along as the earth rotates: it is the temporal, relative frame on which we play. Here we can stop to talk about the shape of the table.

It is well known that elliptical rimmed cupolas are a Baroque invention. The first architect known to use them in a church was Vignola, at *Sant'Andrea* (1550) and later in *Sant'Anna dei Palafrenieri* (1572), in Rome. The type was further developed by Vignola's disciples and finally brought to a mature form by Borromini in the middle of the XVII century. "The longitudinal ellipse is one of the fundamental Baroque forms, merging movement and concentration, linearity and radiation. Its clear, yet irrational, character was the appropriate channel for the expressive goals of the Roman Church."²⁷

Movement and concentration, linearity and radiation: these were the formal characteristics of the Baroque, which by the beginning of the XVII century already knew that the planets moved not on circular paths along fixed spheres, but on elliptical orbs with the sun as one of its focuses. So much had been developed by Johannes Kepler in his *New Astronomy*

published in 1609, based on the astronomical data of the Baroque *flaneur*, Tycho Brahe. It is also well known that Kepler had broken away from the Aristotelian cosmos of fixed, rotating heavens centred on the earth, in favour of a sun-centred system of elliptical planetary orbits: all part of



III. 9 Oval Billiard Table, 1996

his effort to demonstrate the existence of a platonic system of geometric harmony in the cosmos. But this geometry had become dynamic, of multiple foci:

It is remarkable that his [Kepler's] three laws of planetary motion... lie buried in deep mystical speculation. But his world view was essentially Platonic; he was convinced that the arrangement of the universe must correspond to some abstract concept of beauty and harmony, and further, that this order must be mathematically expressible... The natural order he discovered was not based on regular solids but on conic sections.²⁸

The elliptical dome represents the cosmos as it moves; the path of the planets and stars which even accelerate and slow down as they move along their elliptical path, approaching or moving away from each focus.

Orozco's table is a representation of the movement of things—the events—within the natural orbital displacement of the world, the ellipse. It corresponds to a Baroque view of displacement and movement, one of focalization but also of dislocation; of changing speeds and alternating focus; of variable harmony.

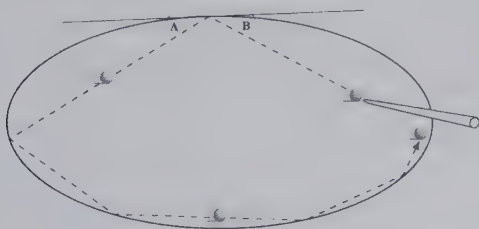


Fig. 16 The closing angle of tangential rebounds

As the players get involved with the game, they strike the balls against the edge of the table. What are the rules? In order to find out, the player studies the bouncing path of the balls as they hit the edge of the oval. The player notices that the bouncing angle is not the same as in a regular, rectangular billiard table. Nor are the rebounds as predictable as they could be in a circular table. In fact, as one of the balls goes through a series of bounces in a continuous trajectory, it starts to roll in ever shorter paths that increasingly approach the curvature of the table. This event suggests a correspondence between the after-bounce trajectory and the tangent line to the curve of the oval at the point where the ball hits the edge.^(Fig. 16) The player notices that the bouncing trajectories have to do with the angular arc of the incoming trajectory in relation to the tangent to the point of contact.²⁹ *Through this relation, Orozco*

makes the player aware of the problem of determining the tangent to a line of variable curvature. The mathematical formulation of the problem of the tangent to a variable curve was one of the fundamental problems faced by Gottfried Wilhelm Leibniz towards 1675 in developing his Calculus.

3 *G. W. Leibniz: the world as a closed curve of harmony*

The mathematical determination of the tangent to a variable curve was predominantly a metaphysical problem for Leibniz. For him, the possibility of determining at each point of a curve its corresponding line of tangency was a proof of the contingency of world events, of the absence of necessity in their happening, and of the fact that this world is in actuality the best world out of the infinity of possible worlds that God could have created. It is a proof of the pre-established harmony of the Creator in making this actuality the best of all possibilities.

Considering the metaphysical implications of the tangent lines to an ellipse—which can be viewed as both a world limit and a billiard table edge—through the analysis of G. W. Leibniz can help us understand the philosophical consequences of Orozco's work. In turn Orozco's *Oval with Pendulum* can help us understand better the ideas of Leibniz. Both help us to better comprehend the Baroque world and its relation to the contemporary *zeitgeist*.

The world as a variable curve

In the succession of world events, there is always a multiplicity of possibilities that could follow a situation. The possibilities open up as incremental bifurcations that in turn lead into an infinity of possibilities succeeding any one happening. A Berliner jumps onto his yellow Schwalbe. He rides

into the city. He runs into another yellow Schwalbe. He can ignore it and move on. Or he can stop, park next to it and take a photo and leave. Or he can leave it there while he goes shopping: Orozco takes the picture. Which of these possibilities are supposed to happen? Have all these series of successions the same possibility of happening, all depending upon pure chance? Is Orozco working on pure chance? Or must one of them happen *necessarily* for destiny to fulfil itself? Or is it that all have the same possibility of happening, yet *the actual one* is the best thing that could have happened?

If we follow Leibniz's arguments, the latter is the best answer, for events happen neither by mere chance, nor by pure necessity. That is, the world is neither the result of the fortuitous arrangement of things at the right time in the right place, nor is this the one and *only* world that necessarily had to come to exist. It is the *best* world out of the infinity of worlds that could have been created. Every small thing that happens in this world happens because out of the *infinite series* of possible events the series that *actually occurs* is the most perfect that could happen. Out of this perfection God chooses it. Even if we, as humans, cannot see why right away. Orozco took the picture; the other Schwalbe owner gets upset about his intrusion. He cannot understand Orozco's action. Yet eventually spectators at the gallery were wondering about the nature of Berlin history: Orozco's reasons for his actions are explained.

Every existence, except God's, is a contingent existence. The cause that some contingent thing may exist instead of another cannot be deduced straight out of its definition, but out of its comparison with other things; for, there being possible infinities that, however, do not exist, one should not look for the reason that these exist and not the others in their definition... but out of an extrinsic principle, which is that of being more perfect than the others.³⁰
(G. W. LEIBNIZ, "On Freedom and Necessity")

This perfection actually has to do more with a possible existence being the most harmonious with the actual world, than

with the perfection of the thing itself. The pentagon, says Leibniz, is one of the perfect geometric figures; yet a perfect



Ill. 10 Oval Billiard Table, 1996

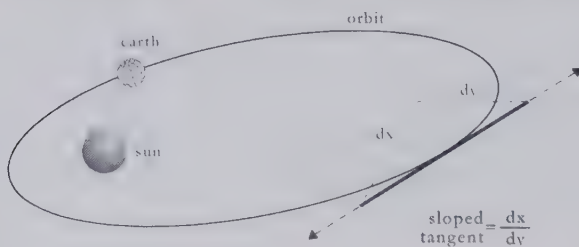


Fig. 17 The tangent to world event

pentagon does not exist in nature. It does not exist actually because it does not fall into God's pre-established harmony evident in the world: "Should the pentagon exist, that would mean that it would be more perfect than other figures. But it is not. Therefore it does not exist. However, that does not mean that its existence is impossible. The possibility then fol-

lows that something imperfect exists instead of the most perfect, from the following proposition: 'It is impossible that something exists whose existence is not willed by God.'³¹

In a given trajectory of variable speed—let us say, that of a cannon ball, or of an orbiting planet—at all moments the speed is in constant change by virtue of gravity (or air resistance). If the curve of the trajectory can be determined mathematically, can the speed and direction at any moment be known? Leibniz solved this problem by developing a method to show that the speed at any moment is the tangent to the curve at that point.^(Fig. 17) In other words, it is the line of constant speed that the object would take should the cause of variable speed (gravity in this case) cease to act. The tangent to the curve at a fixed point of the elliptical rim determines the direction and the speed of movement of any trajectory—of any event—at every moment in the world.

Leibniz considered the path of events following an accident as an infinite string of successions tied one to the other as in a chain of cause and effect ("Because destiny consists in that everything is mutually intertwined as if in a chain").³² There is certainly an infinity of strings of potentially occurring events, yet only one of those infinite series of events—our world—is the actual one happening because this one is constantly chosen by God.³³

Each string of events, divinely linked one to the other, can be represented by an infinite arithmetical series where each number follows from a mathematical operation on the preceding ones, as when, for example, given a succession of numbers

$$a_1, a_2, \dots, a_n$$

there is a series

$$b_1, b_2, \dots, b_n$$

resulting from the difference between two succeeding numbers:

$$b_1 = a_2 - a_1, b_2 = a_3 - a_2, \dots, b_{n-1} = a_n - a_{n-1}$$

A property of this series is that the accumulative sum of the differences is

$$b_1 + b_2 + \dots + b_{n-1} = a_n - a_1.$$

This is to say that the cumulative sum of the differential series is the difference between the last and the first element of the numerical succession.³⁴

Leibniz observed that, making ever smaller the difference between each of two successive members of a series, through operations analogous to that noted above, it is possible to derive the sum (result) of the series at almost any scale of point. *This is to say that for a very simple series of events it is possible to know its outcome at any point in the future.* He applied this principle of infinitesimal reduction of a series to the analysis of the tangent to a curve, considering the line as an infinite series described by a function. Reducing the infinite curvature of the line to a polygon of infinitely small sides, or, as a series of infinitesimal straight lines describing the curvature, he was able to determine the tangent to the curve at any point. The tangent to the curve is actually the slope of one of the infinitesimal sides of the polygon. "In this situation," he wrote, "in order to find the *tangent* it is possible to draw the straight line joining two points (on a curve) at a distance infinitely small from each other, or the prolonged side of a polygon of infinite angles, which for us is equivalent to the curve."³⁵

Through this exercise, Leibniz wanted to prove that for a chain of infinitely minute events resulting one from the other, it is possible to determine the outcome at any moment of the infinity of events—the "connection between the terms or the inclusion of the predicate in the subject". Considering a chain of events as a series of infinite points of a variable curve, the tangent to the curve determines the independent, instant trajectory of each infinitely small point before it causes the next point. Leibniz emphasized, however, that the

total series of actual, existing events that constitute the world was analyzable only by an omniscient Being, not only because the number of happenings that precede the smallest world event is infinite, but also because every curve is constituted by irrational numbers that escape serial analysis—that have no straight tangent.

Infinitesimal calculus was developed by Leibniz as a way to prove that it is possible to pre-determine the chain of events of any simple succession. As a consequence, calculus also demonstrated that the world itself, constituted by an infinity of series that include irrational points, *is* foreseeable—analyzable—, but only by God, who therefore could foresee the reasons to preclude from existence any event not according to His established harmony.

A closed world

Regarding the tangent to curves, Leibniz is aware that certain infinitesimal differentials, from which the tangent to a curve is derived, result on irrational numbers. That is, that at some points the tangent is not a straight line but an indefinite series, a curve tangent to the curve.³⁶ This other “tangent” reveals that in the flow of events—the infinite series—there are points non-analyzable through straight tangent lines. The trajectories of event-things at this point have an irrational direction.

As the ball rolls on *Oval with Pendulum*, it traces the line of its trajectory, i.e., its history as event. When it strikes the edge, its resulting trajectory will be determined by the tangent at the point of contact. It is an existing event. Yet the irrational point signals the possibility of there being trajectories not rationally determinable, definitely possible and also existing because they do not contradict the definition of the line, but not analyzable because they are indefinite series. Leibniz simply dispensed with them in developing his Calculus for the analysis of the curve.³⁷

Curves tangent to the limit of the world show possible trajectories whose outcome, however, is only known by the Infinite Mind. Leibniz would say that they are trajectories *compossible* with this world.

Parallel to the flow of actual events there are, on the other hand, possible trajectories—other than the tangential ones—not actually happening because they are not touching the curve of the world; their existence is possible, yet non-existent because they are simply not harmonious with the actual world, or, to use Leibniz's terminology, not *compossible* to the existing one. Like, for example, the line described by $\sqrt{-1}$: it is a conceivable line, yet it is a line that can never be tangent to any curve: “ $\sqrt{-1}$ involves a notion even when it cannot be proved—for, should someone try to prove it on a circumference, he will discover that the required straight line is not tangent to it—.”³⁸ It is clear that there is an infinity of other curved lines (worlds) constituting the series of possible events, yet God chooses only one curve because that is the best one. The reasons, however, that that curve is chosen remain hidden by Him, the only One who can analyze all its irrational points and therefore see the sufficient reason for every event.³⁹

Impossible worlds are those whose existence is totally possible yet do not exist, even if they are *apparently* better than our actual one. The ideal pentagon, for example, belongs to an impossible world. Impossible worlds, on the other hand, are those whose existence contains a contradiction that renders them totally absurd and therefore beyond God's choice of possible worlds. A number whose square is 9 and that added to five is also 9 is a contradiction; it is an impossible entity.⁴⁰ Impossible worlds include possible but non-existing entities; impossible worlds do not even have the potential to exist due to their inclusion of contradictory terms.

As a pre-determinate curve-series of events, the world is a closed system that admits no exterior accidents affecting it, being as it is a pre-established harmony. All the possible but

non-existing worlds do not affect the actual one, yet their possible existence serves to show that our world is contingent upon a superior will, which has chosen the series according to His infinite vision.

4 *The world as a curve open to symmetrical intrusions*

Tangents to an Oval Billiard Table

Considering Orozco's oval billiard table a representation of the world as a time-space plane whose borders induce inflections of variable speed and direction on the trajectory of event-things, the question faced by the players is:

What is the position (perspective) from which my cue can cause an accident in the event (a change of trajectory in the ball) so that within the changing flow of things the ball will move in such a line that it will bounce off the edge in the direction that I want? Clearly, the cue must be aligned in a geometric, angular relation to the tangent of the curve at the point where the ball will hit the edge.^(Fig. 18) My action, or my will, must be directed towards a tangent line that is not only *possible* but compossible in the world in order to have an effect in it. How is it, in other words, that what I do inflicts an actual, predictable change in the world?

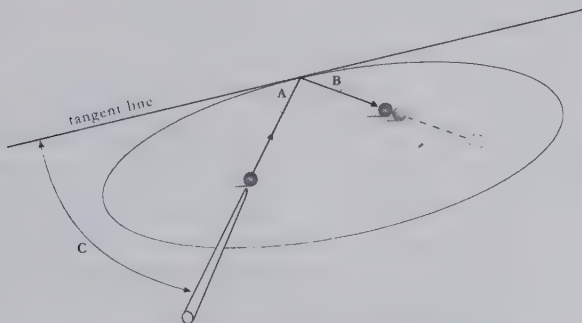


Fig. 18 Taking a calculated shot at the tangent



Ill. 11 *Oval Billiard Table, 1996*

Two billiard balls of known weight strike each other with known speed. Their resulting trajectory can be determined mathematically. All trajectories on the oval billiard table can be determined mathematically, or even intuitively (as a billiards master might do). Every event in this world could be pre-determined mathematically. So much is the conclusion of Leibniz:

When, for example, one sphere hits another one in the air and their dimensions, trajectories, and paths are known before their collision, it is possible to predict and calculate how they will bounce off each other and what will be their path after the contact. These are all beautiful laws, valid also when one considers any number of spheres, or any figures other than spheres.

From this follows, then, that everything happens mathematically, that is, unfailingly, in the whole wide world, such that, should someone have the large enough perception of the inferior parts of things, and the sufficient memory and understanding as to apprehend all circumstances and as to be able to consider them, that person would be a prophet and would see the future in the present, as if in a mirror...

...so we can say that the future world is contained and perfectly pre-formed in the present world, since no accident can affect it from the outside, because there is nothing outside it."

(G. W. LEIBNIZ, "Of Destiny").

And yet... a pendulum appears. It is not touching the plane of the world, but is inside it. It does not roll on the surface of actual time and space, yet it strikes the balls on it. Against Leibniz, Orozco says that there is something outside the world that affects it, inflecting the trajectory of world events—accidents that “can affect it from the outside”—and that can even be caused by the players. The world is not a closed, pre-established harmony of monads-spheres, but rather an enclosed plane of event-things open to an outside line causing inflections, repetitions, and suspensions: symmetry.

The contact with the pendulum ball means the intruding, unexpected application of a symmetrical operation on a mathematical series. Symmetry, in a definition that will be examined more closely later in the text, implies that “a system remains unchanged after some operation is performed on it ... we say that the system is invariant under that particular operation.”⁴² Affected by a symmetry operation, the series will remain invariant—not altered in its sequence—as it unfolded itself up to the moment of contact with symmetry; but it will undergo any one of the basic symmetrical operations recognized by physicists: translation in space, displacement in time, or rotation in itself.⁴³ After its contact with the pendulum ball, the series, or the sequence of succeeding events, will be sent into another place, another time, or another position, while producing the same outcome of the moment right before symmetry operated. While essentially invariant as a series, these outcomes, however, will have a different effect in each one of their new places, times, or spectators.

This means that a same event can happen in different locations or times, and can be viewed from different angles, while remaining intrinsically the same. As when Gabriel Orozco runs repeatedly into identical Schwalbes in different spots at different moments, and with the motorcycles in different positions. The event is always the same, but the clash with symmetry has made it happen many times over in different

moments and places. But one same event has different effects at different places; it means that any succession of happenings can be made to appear, unaltered, somewhere else, consequently affecting its perception *from the spectator's point of view*.

It is a revelation to compare the *Don Quixote* of Pierre Menard to that of Cervantes. For example, Cervantes wrote (*Don Quixote*, first part, chapter nine):
(...) *truth, whose mother is history, the challenger of time, reservoir of actions, witness of what is past, model and bulletin of what is present, warning of what is coming.* Composed in the seventeenth century, composed by the "secular genius," Cervantes, that catalogue is just a rhetorical praise of history. Whereas Menard writes:

(...) *truth, whose mother is history, the challenger of time, reservoir of actions, witness of what is past, model and bulletin of what is present, warning of what is coming.* History, mother of truth; the idea is astonishing. Menard, contemporary of William James, defines history not as an inquiry into reality but as its very origin. Historical truth, for him, is not what happened; is what we judge to have happened. The final phrases—*model and bulletin of what is present, warning of what is coming*—are blatantly pragmatic.

[JORGE LUIS BORGES, "Pierre Menard, the author of *Don Quixote*"].⁴⁴

There is a further symmetrical operation that can affect directly a mathematical series, even though its physical effects have been studied, up until now, only on the quantum particle level. It is the symmetry of particle *spin*, an operational property related to the spinning of fundamental subatomic particles; it has been baptized by physicists as *supersymmetry*. Mathematically, the operation results in equations with different kinds of symmetrical, commutative laws that describe alternative space-time analytical relations. These equations imply additional coordinates other than those known in our perceivable space-time coordinate system. In his recent book *The Elegant Universe*, Brian Greene, professor at Cornell University, describes the newly discovered type of symmetry: "This extension involves augmenting the familiar Cartesian coordinates of spacetime with new quantum coordinates, say u and v , that are anticommuting: $u \times v = -v \times u$. Supersymmetry can then be thought of as translations in this quantum-mechanically augmented form of spacetime."⁴⁵ A further consequence of supersymmetrical transla-

tions into the new space is the necessary appearance on *the other side* of a whole new set of particles that are supersymmetrical (negative) mirror images of the quantum particles of our "spacetime": so-called *selectrons*, *sneutrinos*, *squarks*, *photinos*, *gluinos*, and even *winos* and *zinos*, make up the fundamental particles of that *other* mirror space.⁴⁶

The fact that contact with symmetry could affect a series of events occurring in our world (x - y - z coordinates) implies the possibility of its being affected also by a supersymmetrical operation. A mirror image of one series of events *taking place here* can then be translated into another space outside our world, or, inversely, some event outside our world can intrude into it. (Fig. 19) Applied to a converging series, the anticommuting properties of supersymmetrical operations could imply the possibility that the series is reproduced as a

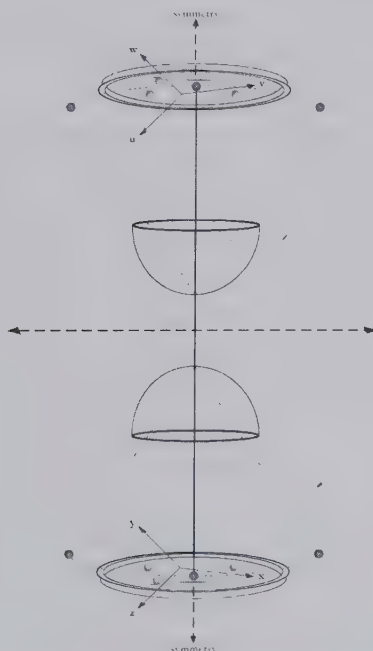


Fig. 19 Supersymmetrical spaces of u , v , w coordinates

negative mirror image in the u, v coordinate plane: then the successions of events up to the moment before the supersymmetrical operation will happen in a reverse order somewhere else. "A speaker in Plato's *Politics* had already described a similar regression: that of the Children of Earth or Autochthonous, who, under the influx of an inverse rotation of the cosmos went from old age to middle age, from middle age to childhood, from childhood to their disappearance, then to nothingness,"⁴⁷ reports J. L. Borges of such an "inverse world." Even before supersymmetry had appeared on the scene, Nobel Laureate Richard P. Feynman had pointed to the fact that "the one-way business of the interactions of things should be the thing that makes the whole phenomena of the world seem to go one way. But we have not found this yet. That is, in all the laws of physics that we have found so far [1960] there does not seem to be any distinction between the past and the future. The moving picture should work the same going both ways and the physicist who looks at it should not laugh."⁴⁸

Even the basic symmetry operations occurring in our plane of time are enough to show that events in our elliptically closed world are not an absolutely pre-determinable, closed series of successions; they are, in fact, constituted by series that can be repeated, duplicated, mirrored, or rotated, into different moments and places, or even into different dimensions. From these operations, events produce totally new meanings and differentiations while remaining formally identical. While the symmetrical multiplicity of event-objects annuls the possibility of there being unbreakable chains of cause-and-effect successions (since one same series can, through symmetrical repetition in other planes or times, have multiple different bifurcations), the fact that it is possible to operate one's will in performing symmetrical operations on reality also takes away from a divine being the monopoly of event determination.

With the pendulum there is the possibility of “striking a chord” of non-space (not Foucault’s absolute space, as he conceived of the pendulum’s plane of swing) outside of this world, outside of our time-space oval table. The game becomes: what is the perspective line of my cue so that I can cause a trajectory on this reality such that it can touch on a line not tangent to the curve of the world?

The billiard pendulum swings out of the plane of the table; momentarily, it moves out of sensible reality into a kind of sensory suspension. It is a moment similar to that of the *ping-pong* ball when it falls into the central pond: a momentary enchantment of the time of both games as the balls move out of space and into a type of non-space. It is quite a different scenario from when one of the balls falls onto the floor. In such case the balls have simply rolled out of their symbolic space—the game cannot happen. When the *ping-pong* ball falls into the pond, or the pendulum billiard swings out of the oval table, the game is still active, but non-space has been engaged. It is an active suspension.

The experienced player will wait for the pendulum ball to return to the area within his reach, observe its oval, spiralling oscillations closing into the centre, aim his cue in relation to the tangent at the point his billiard ball must hit the table edge, then strike, sending the ball rolling and then bouncing towards the swinging pendulum.^(Fig. 20) When the aim is correct, an actual accident with an exterior agent has been produced. The new pendulum trajectory is not determinable because it swings out of the player’s time and space. It is also possible to play at how to allow infinity—the line connected to a kind of mental non-dimensionality, not tangent to the world curvature—strike upon the trajectory of everyday, mathematically-predictable events. It is a matter of positioning the billiard balls correctly. Symmetry seems to be always swinging around; contact with it is not simply a

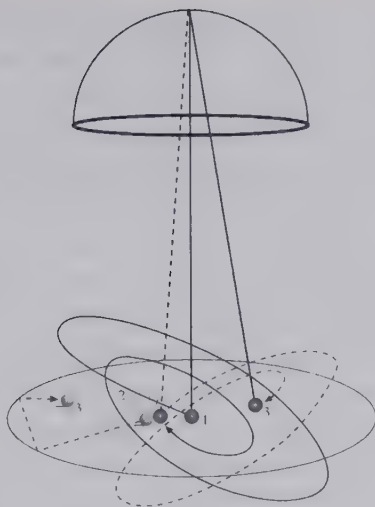


Fig. 21 The intrusion of symmetry

One photon goes through a slit on a plate. Simultaneously it is passing through an adjacent slit. It travelled instantly between two places.⁵⁰ What happened in between? Clearly there are events in reality which are affected by something other than that which can be perceived. The photon “disappears” at one point and appears simultaneously at another. It went into the non-space of symmetry and appeared on the other side of the symmetry line. Einstein denounced this possibility because for him only that which could be physically described and mathematically determined was real, as he wrote in the EPR paper: “Each element of physical reality must have a correspondence in physical theory.”⁵¹

In his closed, observation-derived mathematics, Einstein is closer to Leibniz than to Orozco. His *General Relativity* was an effort to include new, non-Euclidean geometries into the mathematical description of the expanding universe. Einstein’s is still a predictable, mathematically pre-determinable universe, much like Leibniz conceived it. Orozco seems to move forward from quantum theory, not even accepting it as the intermediate step towards a unified theory that will eventually explain

away mathematically all phenomena of the universe (as most contemporary physicists consider it and hope for), but as a proof that the universe is but a continuum of games of arbitrary rules constantly disrupted by non-spaces.

Symmetry has turned out to be a fundamental concept to contemporary physics and even cosmology. That a set of particles or geometrical arrangements maintain their properties through different kinds of operations, in space or time, is a proof of their consistency in all dimensions, which means that they will appear the same in any other potential part or time of the universe. Plus, the most recent symmetrical operation found to work in the physical world, supersymmetry, brings with it the inevitable conclusion that there must exist many more dimensions than the four space-and-time dimensions of our world; it implies the possibility of a universe of multiple levels. In this picture of the cosmos symmetry reveals itself, as in Orozco's work, as a kind of infinite line tying up all levels of the universe. "A variant of the superstring theory, called M-theory (M for membrane), is a supersymmetric theory described by 11 dimensions—10 spatial dimensions and 1 time dimension. At low energies (the everyday energies) seven spatial dimensions are curled up [folded in] to infinitesimally small size, and time and three spatial dimensions are stretched out to infinity."⁵² But Orozco would talk of n-dimensions unfolded symmetrically beyond the four dimensions of the everyday oval billiard table—a possibility also considered by cosmologists.

5 *Models of the universe*

Not the Best of all Worlds

The implication of all this is that this place is not the best of all possible worlds. It is only a game surface—one more game

board in the universe—delimited by the curve whose tangents condition how we move. Yet within this game surface we have the possibility of engaging absolute symmetry, allowing it to enter, unexpected. It is a world-as-a-game whose inside rules are known but offer the possibility of breaking them, through the very symmetry that allows the world game in the first place.

Gilles Deleuze points out: “That a calculus and even a divine play may exist at the origin of the world is a topic pondered among the greatest philosophers. But everything depends on the nature of the game, on its eventual rules and of the too human model that we are able to reconstitute from it.”⁵³ What are the special characteristics of Orozco’s version of the world-as-a-game topic?

Two outstanding features of Orozco’s universal game are: the implication of a formal harmony between games through infinity; as a consequence, the explication that this game is part of another, larger game, one whose rules we do not know but can glimpse, and one whose other players we ignore. Yet



III. 12 *Moon Trees*, 1998. Detail

through symmetry we the players can move from floor to floor as if in a playing casino. Orozco recreated such a scenario at the exhibition *Empty Club*, in London, 1996, where in an erstwhile London casino he placed *Oval Billiard Table* in the big hall of the main floor. (Fig. 22) On the floor above, there was placed an area for English bowl playing; on the uppermost floor, a kind of fairy-tale cricket ground with players and spectators enchanted into *Moon Trees*. The basement housed

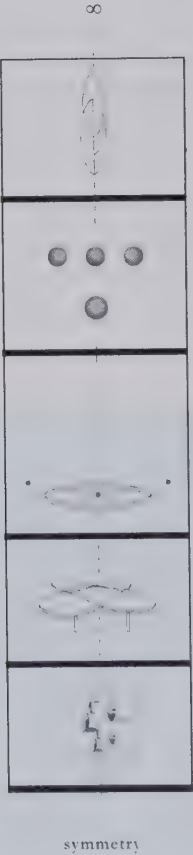


Fig. 22 Empty Club, the world as a casino.

a computer monotonously displaying geometric patterns as screen-savers. Quite appropriately, in the mid 19th century the building had been known to the “public as Crockford’s ‘Temple of Chance.’ It was one of the first gambling dens in London.”⁵⁴ It can be viewed as a microcosmic model of Orozco’s Universe-as-gambling-floors.

Going back to Foucault, it is clear that to his century the universe was definitely not a game, but a system, measurable and predictable according to immutable Natural Laws. So much did Foucault set himself to prove with his pendulum at Jean Jacques Souflot’s *St. Geneviève*, the building which set the tone for all the systematic academic architecture of the 19th century. Foucault assumed that beyond the movement of the earth and the planets there was a static, absolute space, as Jean Fisher points out about Umberto Eco’s description: “The point about Foucault’s pendulum, as Eco’s narrator goes on to say, is that it oscillates around a geometric point, somewhere in the universe, which has no dimension and therefore cannot move...”⁵⁵ Orozco’s pendulum, on the other hand, is not fixed in relation to such absolute space, but to the line of symmetry which is actually a non-spatial line that multiplies as in a mirror the floors of the universe and the antagonistic halves of its games.⁵⁶ It is a non-dimensional line without reference to any absolute frame, intruding into the spatial construction of each world.

The vision of the universe as an immutable system has been shattered in our time. In Orozco’s conception, it appears as an infinite series of games connected by the non-dimensional line of symmetry, floor upon floor of playing tables, cricket grounds, chess-boards, bowling alleys... It finds its correspondence in some of the most recent topological descriptions of the universe, which view it not as an infinitum of space and matter, but more as a succession of smaller “universes” reflected one upon the other, through symmetry

lines, into infinity.^{(Fig. 23) 57} A recent article by Dennis Overbye of the *New York Times* underlines that “This mirror game is not limited to cubes and doughnuts. Over the years mathematicians... have speculated about universes composed of various polyhedrons glued together in various ways [while astronomers] developed a method called ‘cosmic crystallography’ using galaxy statistics to detect and diagnose the repeating patterns that would be created in the sky by light going around and around in differently shaped universes.”⁵⁸

Migrating through the floors

How does one move from floor to floor, from the initial game through to the upper games, even if we assume that there is a migration to “superior” fields, like Third World street players that migrate into First World leagues?

In the Baroque world the movement upwards was only possible through spirituality—in fact, more through the mystical experience of the inner self, because, as Deleuze points out, the upper floor was a closed world. “It is the upper floor that has no windows. It is a dark room or chamber...”⁵⁹ so that it was not through a conscious opening or an actual window that one could enter it, but rather through a mystical, which is to

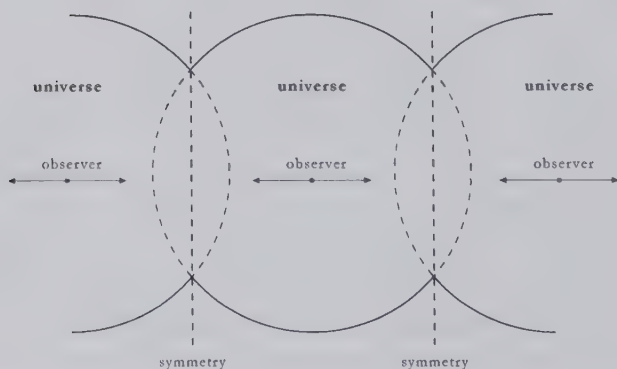


Fig. 23 Infinitely mirrored universes

say “miraculous,” connection to the hermetic *monad*. And not so much due to some “vibration” of matter, as Deleuze would have it regarding Leibniz,⁶⁰ even if Deleuze himself is ready to clarify that “it could be argued that this text [*The Fold*] does not express Leibniz’s thought, but instead the maximum degree of its possible conciliation with Locke.”⁶¹

But while for Leibniz “The Monads have no windows through which anything can go in or out of them”⁶² except through the miraculous, the house itself was wide open on the lower, public floor. The distinction between social space and private space was rather blurred, to the extent that they were interchangeable, while the private world was accessed only through religious and mystical ascensions.

In Orozco’s world, one moves up the floors neither through spirituality nor through enclosing into oneself, but by becoming a Master Player. Through the skilful mastering of the arbitrary rules of each game—the tangents to the curve, the movement of horses, the bouncing trajectories of ping-pong balls, the unexpectedness of improvised street games—the player is collecting as it were cash tokens, which is to say the knowledge that allows him to understand the fundamental laws of all games while accepting the inevitable intrusion of non-space-symmetry into every one of them.

Further, according to Orozco there really is not an “upward” movement through the floors, since actually there is no best world of all, no higher improvement of things, so that one can either play at the level of minute personal perceptions—as in *Until You Find Another Yellow Schwalbe*, in Berlin, or *Crazy Tourist*, in Brazil, or *La DS*—or one can play at the level of cosmic orbital tangents. There is therefore no migrating into some First World, no upward travelling into the higher realms of superior leagues, and the First World is not the Best of all Worlds.

This is the reason for Orozco’s reluctance to be called a “globalized” or “internationalized” artist, or even a nomad-

terms that have usually come to mean the acceptance of the North-South, Upper-Lower dichotomy. "I never understood internationalism or globalization, and at the same time, I don't understand locality itself... I am not a nomad. Maybe an immigrant, but a much more privileged immigrant. Nomad is a too glamorous term for me."⁶³ We can agree with Francesco Bonami's perception that at Orozco's "We are looking at a world—First, Third, Fifth—from within the triple gaze of industrialization, conceptualization and exploitation, but none of these stigmas succeeds in maintaining their relevance to the final presentation or construction of his work,"⁶⁴ since every place is a good place to master games and to move through all the scales of playing.

Artist as player

As noted above, the Baroque intentionally diffused the distinction between the social and the private, rather distinguishing between the social and the spiritual. However, it accentuated the distinction between the social and the public, social being all the interior spaces of the palace, while it kept the public arena as the façade and the gardens in front.

Analogous to the Baroque palace, in Orozco's world-casino there is no private floor. The social and the private cannot be distinguished since the game is going on in all areas of the interior realm. The house does not contain private areas; it is a continuous social arena of varied games. Rather than asking what the private is, we are led by Orozco to question whether indeed there is a private realm in contemporary culture. Certainly not in a world that is a non-stop social game, now made totally public in its most recondite play areas by reality shows. It is all a social world, but not social in a moral, political, or class sense, but in the sense that everyone is always playing. Everyone is participating in the game of perception and symbol re-construction, so that all human activities are social activities, even when one is playing

against oneself. In this way one can understand Orozco's reply to Benjamin Buchloh, when he asked him "what is your social model, your social space?

GO – I would like the social model to be my apartment, just my apartment."⁶⁵

What was considered the only private space of the artist is actually his social space—not in the sense, of course, of the apartment being a continuous *fiesta*, as in the Baroque, but in being the foremost place for the social game of symbol deconstruction and re-construction, of being the most unencumbered space for understanding the key rules of the games:

GO – ... Just to finish something; the idea of the apartment is important; the idea of avoiding to have a studio or a factory, and just doing anything from here, from a common place; then going outside, having situations that produce this or that.⁶⁶

The artist no longer as the moralist worker, nor as the civil servant, the bureaucrat or the media star, not even the artist as an artist—"The artist as artist just doesn't exist anymore"⁶⁷—but the artist as a kind of player, a masterful, philosophical player who simply enjoys the detective uncovering of the winning moves. And even if the shadow of Marcel Duchamp playing chess looms tall behind Orozco, there is a fundamental difference in that Orozco extends the chess game to all levels of everyday life, to all casino floors, not just those of art.

The Gold Chain or the Golden Thread of Symmetry

Floor upon floor of playing surfaces, game-worlds, one above the other, not morally but by virtue of simple scale. There are also horizontal chambers, offering different strategies for connecting to the floors above, below, or to the side.

Leibniz's model of the image of potential worlds, as described in the *Théodicée*, is an infinitely tall pyramid, each building stone of the pyramid a cell or department containing an ever slightly different version of the world.⁶⁸ The

pyramid's base extends to infinity, shrouded in fog, because the different possible worlds are infinite in number. Yet there is only one room at the apex of the pyramid. This room is our actual, existing world, which is at the top because it is the best of all the possible world versions that make up the pyramid. Each one of the rooms below stages every bifurcation that could possibly follow from any event other than the actual one: the possibilities that cannot come to exist. These rooms are the worlds that are impossible with the existing one. Possible, but non-existing, because they do not agree with the pre-established harmony that God carries out every moment in the uppermost room. The pyramid is made up, then, of all the choices available to God, who decides always for the best through the actions willed by the monad-soul of every individual.

Borges, "one of Leibniz's disciples",⁶⁹ flattens out the pyramid and chooses an infinite arrangement of repetitive, hexagonal cells, infinitely connected by a vertical stair and side doors. In this universe, described as "The Library of Babel," there is no "choice" of a best world, but rather an infinite complexity of varying possibilities, a game of mirrors whose arbitrary rules are not immediately clear to the manuscript reader, except for the intuition that "*The library is endless and cyclic.*"⁷⁰

The universe à la Orozco resembles more a Russian *matryoshka* doll: a world inside a world, inside a world... an infinitely expanding casino of salons enclosing salons, all connected not through stairs but through the non-dimensional line of symmetry, which falls down through all the playing tables as a kind of golden thread let down by the gods to connect each game to the others.^(Fig. 24) This golden thread of symmetry is Orozco's version of that Golden Chain that Zeus let down into the world to represent, according to Leibniz and the Stoics, the unbreakable connections of destiny: "The ancient poets, like Homer and some

others, have called it the golden chain, that Jupiter lets down from the sky and cannot be broken, no matter what is hung from it. This is the chain of succeeding cause and effect.”⁷¹ Yet for Orozco there is no unbreakable connection between one event and the other in a pre-established destiny. Zeus lets down the thread of symmetry to structure and to allow with it the games to take their place, and so as to connect through it, symmetrically, one floor to the other. It is a golden thread of symmetry that allows cause and effect to be altered by the clever, unexpected moves of skilful players.

This thread therefore allows the co-existence of “impossible” worlds in the universe, impossible because they do not intersect each other, yet existing in actuality because nothing precludes any world for the reason that it is worse than any other. Furthermore, the thread falls down not so much as a fishing line but rather as a spiralling cord touching

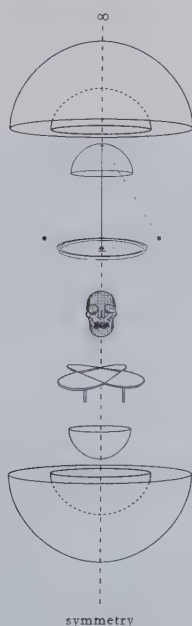


Fig. 24 Worlds within worlds

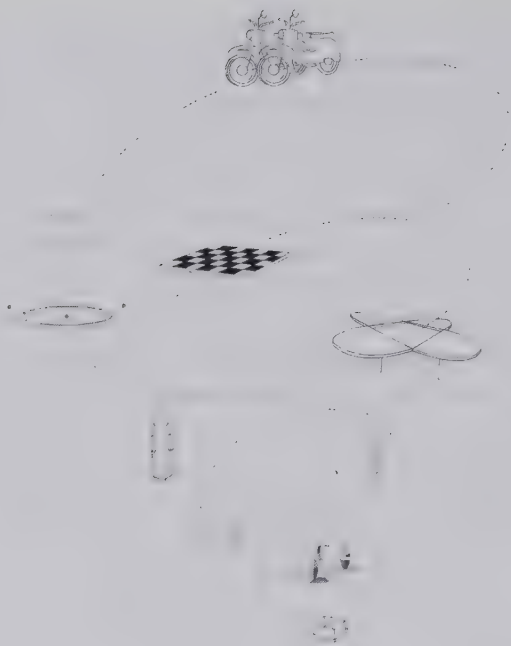


Fig. 25 Spiralling symmetry



Ill. 13 Marble Game in Rotating Field, 1996

on all scales of games, from macrocosmic orbits with pendulum to microcosmic sub-particle chess.^(Fig. 25)

An image that suggests this spiralling line can be seen in the 1996 photograph *Marble Game in Rotating Field*. The viewer's sight moves through the photograph in a curved line that connects different scales of playing fields. From the dirt playground of the children's marbles at the top right corner, it goes through a square of activities signalled by stones; then onto the flat roof of an adobe house, where doves seem to move like tokens on a checkers table. Or the line may even do strange arabesques as it moves down on a playing surface, much like the *Long Yellow Hose* that Orozco let loop around in the grounds of the Museum of Contemporary Art of San Diego in 1996.

The question remains whether the symmetry line spirals down to a final, non-dimensional metaphysical point, the monad, or to an indivisible, perceptible point with dimension, the atom.



Ill. 14 *Long yellow Hose*, 1996

6 *Carta Blanca*

Gabriel Orozco made a representation of this universe of impossible but existing worlds in the installation *Carta Blanca* for Portikus at Frankfurt am Main, 1999.⁷²

There are a series of cans found and collected, rusted, on the beach of Chacahua, in Oaxaca, on the Pacific coast of Mexico. Strewn on a layer of sand, the cans are of all kinds: soup cans, tuna fish cans, formula-milk cans, juice cans. To all of them Orozco has affixed a label of the popular Carta Blanca beer. The labels had been peeled off bottles drunk on the beach. The gallery space re-enacts the beach space, emphasizing the metaphorical character of the installation.

That each can, rusted as it is, bears the Carta Blanca label immediately suggests that each can represents a Carta Blanca beer—obvious as it may seem. Rusted, these are not new versions of the low-budget beer, but rather *possible other* versions of the Carta Blanca beer, which incidentally is actually sold only in three different sizes of glass bottles. These *other* ones are rusted cans strewn about by the waves, so that these different beer containers represent versions that have already existed, and are now found as relics. The cans represent possible other beers that have existed in actuality but that are not compossible with this of our world, where one can find only glass Carta Blancas.

The installation is about possible objects, impossible with our world, that nonetheless do exist in some other world. The sand here represents the atoms that, moved about by the waves, have tossed out, unexpectedly, all the different possibilities of Carta Blanca. It is the chance combination of the sand-atoms that has produced, at some time or the other, some place or the other, the slightly different containers, of which none is better than the other, for none is topping a pyramid of possible beers. They are all there, all the possible combinations of shapes that could potentially exist in this world but which are

precluded here by the bottles actually produced in Monterrey. While there is a series of cans that could also exist in our present world, there are only three types produced (*Caguamas*, *No-retornables*, and *cuartos*), which are the most sociably identifiable—sellable. Yet this marketing exclusion does not mean that they have not existed in another world, or that they do not exist somewhere else right now. Anaxagoras, beer in hand, would have agreed with Orozco, since the ancient Atomist “seems to have said that at some time all things existed simultaneously, for example this flesh and this bone, and likewise any



Ill. 15 *Carta Blanca*, 1999

other being; hence, all things; and simultaneously, therefore.”⁷³ In an infinite universe of endless rooms and games, there will always be a salon where the atoms are played to become anything, and even if this game moves on to become something else, that same game will re-appear at some other salon.

Each can may also be viewed as the representation of a world, temporarily produced by the arrangement of atoms



Ill. 16 *Sand on Table*, 1992

that have been hurled and tossed around. It is the chance combination of atoms that produces all the infinite possible cans and their worlds, which actually exist at some point in infinity and through infinity reappear again, things turning into dust and from dust acquiring form again. Agreeing with Giordano Bruno, Orozco could also say that “Every production, of whatever type, is but an alteration remaining always identical to the substance [dust, the Origin]... Solomon understood this when he said that *there exists nothing new under the sun; whatever it is, was before.*”⁷⁴

This speaks of Orozco’s optimism as much as his choice of a popular beer label. Not so much due to the resonance of the leisurely enjoyment of beach vacations, but, rather, because of the certainty that market production of seductive types is nothing “but an alteration” of a substance that has always been the same, and that the actual Carta Blanca beer bottles, as much as the impossible Carta Blanca beer cans, have existed before.

Connected to the Carta Blanca installation is the earlier *Sand on Table* of 1992, in which a landscape of golden sand sits atop a typical beach table in an idyllic afternoon somewhere in Mexico. (Fig. 26) Partly a sand clock,

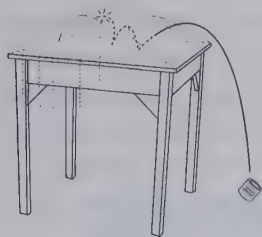


Fig. 26 *Sand on Table*, the production of impossible Carta Blancas

it is the landscape of another possible world, another possible game surface, both for late night dominos and for atom alterations—producing, seven years later, Carta Blanca cans that had already been before.

7 *The constituents of matter*

Monads or nomads

But even as these two works start to unveil the mechanics of an atomic universe, other works of Orozco suggest a kind of Monadic elicitation of form, which is to say a Monadic unfolding of events. Monad was the Neoplatonic word⁷⁵ Leibniz assigned to a kind of non-dimensional metaphysical point in which the pure, indivisible “substance” of the soul resides. He thought that matter, always having dimension—no matter how small—was forever divisible into ever smaller parts. Therefore there had to exist a final point without dimension but with the perception and world memory that every soul must have: “Where there are no parts there are neither, consequently, extension, nor figure, nor possible divisibility. These Monads are the true Atoms of Nature and, in a word, the Elements of things,” (*Monadology*, §3)⁷⁶ and are issued forth as a kind of Neoplatonic emanation (“fulguration”) from the First Substance (§47).

Sharing the fundamental, simple nature of the First Substance, Monads carry within them, as a kind of hermetic Borgesian *aleph*, the information about the entire universe.

Every Monad could be everything in the universe, but it is allowed to express outside of itself only the part that corresponds to it according the pre-established harmony that it carries within. This self to the limitation is an inherent part of the knowledge it has about everything: "... every simple substance has relations that express all the others, and she is, therefore, a perpetually living mirror of the universe [§56]... Therefore, although every created Monad represents the entire universe, it represents more distinctly the body that concerns her in particular" (§62).⁷⁷



Ill. 17 *Island within an Island*, 1993

An intimation of a Monadic mirroring of the universe is given by Orozco in some of his works. In particular, *Island within an Island* (1993) shows how the phenomenon that gave form to the capitalist city is already contained within the discarded pieces of city residue and rain puddles. The reflection of the smaller city on the shallow water is extremely important, as it underlines the fact that it is not only that the industrial

city produces the same forms at different scales, but the chance appearance of water, as a small bay in front *mirroring again* the mirror city, robs us from that mechanistic connection, instead pointing to the fact that all matter (not only but including industrially transformed matter) carry within it the information that enables it to reproduce, at any scale, every form—including capitalist form.



Ill. 18 *Melting Popsicle*, 1993

Orozco seems to be constantly on the look out for similar monadic unfolding at different scales and materials of one same form. It is evident in, for example, *Snake*, of 1991, where metal spikes are piled up so as to form a snake's skeleton. The metal spikes are in fact old tractor ploughs. Or take the *Octopus* (1991) with auto-part eyes and swirling tentacles

that are stiffened exhaust hoses; it is as if the spectator were in front of the remains of an automobile whose parts propelled before a sub-aquatic being. At other times Orozco seems just expectant of what previous form matter could “remember” when it is spilled out, as happens in the *Melted Popsicle* photograph of 1993.

The memory of matter: what it once was

What matter seems “to remember”... This type of formation is *not* a monadic explication, since Monads unfold their material body by accepting the part of the universe that they must represent according to pre-established harmony. They do not exercise choice regarding what they will become, even if they carry the potential to become any being in the universe. It is in this sense that Leibniz calls them simple automatons that proceed in the universe according to what they have been instructed—a sort of sad lot for souls:

The name *Entelequias* could be applied to all the simple substances, or the name created Monads, since they carry in themselves a certain perfection ... as well as a sufficiency ... which turns them into the source of their internal actions and into what we could call non-corporeal Automaton. (*Monadology*, 18)⁷⁸

On the other hand we have Orozco’s belief that matter can assume any form in the universe at any moment; but it is more inclined to adopt a form that it seems to have had in the past and which at the present it vaguely remembers, like a type of karma that matter carries with itself through time. On the contrary, Monads that reside within bodies (of snakes, octopuses...) in Leibniz’s Best of all Worlds cannot be going back and forth between forms, since they are automatons with only one choice, the Best one.

Orozco’s view of the “memory” of matter is actually closer to Heraclitus’ than to Leibniz’s. Heraclitus’ conception was that all things are the expression of One thing; conversely, since they are all part of the One substance, they carry the potential to become—or to have been—anything. Every

thing carries the memory of all, i.e., the One: "Just as (the principle) alternately makes the world from itself and again itself from the world, and all things, Heraclitus says, are an exchange for fire and fire for all things..." (Plutarch, *on the E at Delphi*).⁷⁹ The concept was taken up by Giordano Bruno in 1584, particularly in his *De la causa, principio e uno*. "Anything that we take in the Universe, having in itself all that which is everything in everything, holds, in its own way, the entire soul of the world (although not totally, as we have said); soul which is entirely in any part of that [the Universe]." (§ 731).⁸⁰ And if matter takes on a subsequent body form, it is not because that is its precluding destiny, but because matter takes on forms that are simply compatible with its immediate (or preceding) condition: "... many forms are incompatible in a same subject, either because they are opposite to each other, or because they belong to different species: like there could not exist a same, individual subject with the accidents of horse and man, or under the dimensions of a plant or of an animal" (§ 728).⁸¹ Although according to Orozco matter seems to carry within itself a memory of all the things that it has been, so that it has the inclination to assume the shape of something familiar to what it was; it is also predisposed to go back to any one of the preceding and compatible forms, no matter that they belong to apparently distant species, like car hoses in relation to octopus tentacles.

At any rate, it is matter made up of a basic stuff that actively carries the potential for assuming any form of the universe; it is not a matter dominated by a dictatorial Monad that precludes all but the best forms, as it is conceived by Leibniz, who had criticized Descartes for declaring "explicitly that matter takes successively on all forms of which it is capable (*Princ. philos.*, pars III, art 47), something that is barely defensible, since it would destroy all the beauty of the universe and the choice of things, not to mention other arguments that could refute the argument."⁸²

Orozco's is an atomistic world structure, implicit in both *Carta Blanca* and in *Sand on Table*, so that the artist starts to move away from the orbit of Leibniz, instead approaching that of that other great baroque thinker, Giordano Bruno. A little less than ninety years before Leibniz's major works, Bruno had published in Venice *Del'Infinito Universo et Mondi* (1584), the work where he sets out both to destroy the Aristotelian view of the universe, and to describe a complete, new cosmological vision based above all on the idea that the universe is an infinite space populated by an infinity of



Ill. 19 *Carta Blanca*, 1999

worlds, suns, and even an infinity of different other beings. Unlike Leibniz, who tried to reconcile the new Copernican planetary system with the Christian God's choice of the Best World, Bruno takes the new discoveries to their ultimate consequences, resurrecting the ancient doctrines of infinite atomic formation and combination, developing the doctrines of Democritus and Epicurus to what he considered an even

more perfect systematization. Considering the universe as a continuous flow of atoms, in *Del'Infinito* Bruno affirms that

...by virtue of this successive alternation it is not inappropriate, but rather most reasonable, to say that parts and atoms have an infinite course and movement through their infinite alternations and transmutations, both of form and place.⁸⁴

Following their course in the universe atoms can go through an infinity of forms through the infinity of time: "I do not think it absurd and inconvenient, but, rather, most convenient and natural that the possible transmutations of a subject are [in]finite, and that for that reason earth particles travel through the ethereal region now entering into a body, now into another."⁸⁴

The question remains now whether Orozco's atoms, like Democritus', participate in a chance game where the universe is one of their accidental formations, or whether there exist superior, ideal forms (Plato's) that are impressed on the atomic matter according to the image of one universal soul.

III

ATOMISM

... *Babylon is nothing more than an infinite game of chance.*

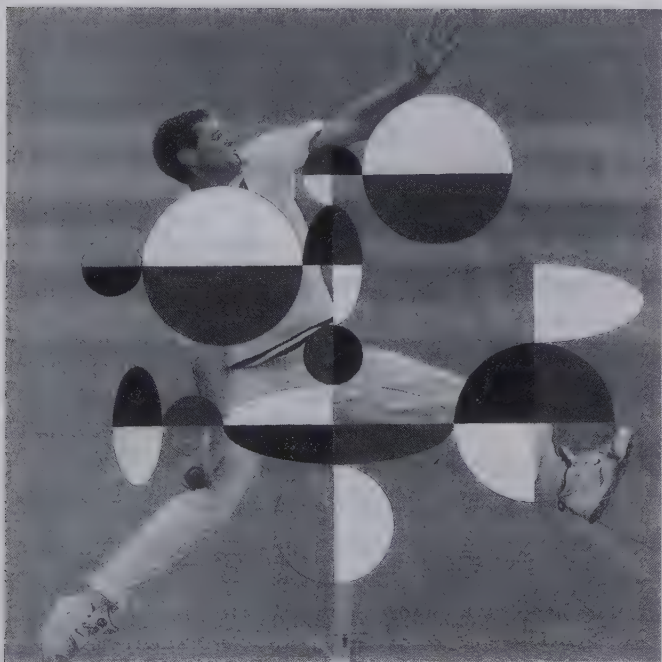
JORGE LUIS BORGES, "The lottery of Babylon."⁴¹

1 *Atoms à la Orozco*

Considered as pure games, *Ping-Pond Table*, or *Oval with Pendulum*, can be seen as works that represent macrocosmic versions of the infinitesimal games that take place simultaneously in the universe and that are, in fact, the origin of its structure and continuous transformation. These endless, universal games are the games of atomism—Orozco's version.

This version is not strictly the original materialistic atomism of Democritus. The artist shares with the laughing philosopher the notion, common to all atomic cosmologies, that the universe is made up of indivisible elements whose compositional, spontaneous combinations are the source of universal diversity. But Orozco does not see these atoms as indivisible matter, nor does he require space as an incessant contradistinction to material things.⁴² For him, atoms are circular or semi-circular *ideal* units, invisible but present throughout the universe. They are elementary and indivisible, yet *elastic*, units of movement and exchange whose combinatory mechanisms orchestrate—randomly, accidentally—the events of the universe. These events include, but are not limited to, the continuous creation and transformation of space and matter.

This elastic atom is a purely geometric field that signals displacement. It maps an abstract translation that follows the same checkerboard mechanism of knights in a game of chess. By virtue of its always being a three-steps-at-a-time progression, the displacement (which can be conceived as a knight move without the knight) occurs necessarily from one atom to any adjacent one. There cannot be displacement within the atom because this is symmetrically cut into four equal places. This fact results in a continuous exchange of movement “sub-



Ill. 20 *Atomists: Making Strides*, 1996

particles” between every atom and the others, as if in an endless game of chess knights. Gabriel Orozco realized the most extensive representation of this atomic mechanism in his series *The Atomist*. But they also appear recurrently in connection with other themes in the artist’s work.

Democritus conceived an eternal and restless dialectic between his Atoms—as Being—and Space or Void—as Non-Being. For him, neither one is more important than the other because atoms need space to move and to occupy extensions: without space there could not be the room for material manifestations. Orozco's atoms, on the other hand, do not require *a priori* the Democritean space because they are mere abstract, mechanical units, a sort of Platonic archetype of movement. Yet through the perception of their movement space itself is produced. The atoms are in fact the units of the mechanics of perception; each one constitutes an elementary map of the ping-pong game that constructs ideas—but at the same time they are the product of a primordial, originating idea of exchange. As such, they unfold the maps of both mental space and physical space.

This is the sense in which space is not required *a priori* for them to exist: atoms are produced because of the need to create the elemental structure that is space. Atoms are produced mentally so that space can be produced physically. This is a dialectical opposition that contrasts with Democritus' elemental appearance: whereas for the philosopher space and matter seem to have appeared simultaneously, separated from an initial whole,⁸⁷ for the artist atoms are created and from them *follows* space, which is therefore a mental creation of physical results. In this cosmology space is not strictly the void or "the non-existent" but, rather, a mental structure that is *projected* onto the void. The void, therefore, pre-exists atoms but as the non-perceivable emptiness, as "the non-perception." But perhaps this is what Democritus meant all along by calling space "the non-existent."

Orozco has discovered that traces of this void intrude into the space of the world: it is the infinite as a line of symmetry between one movement and the other in the endless atomic game, that incommensurable line of cancelled space

that “has to do more with consciousness and the mental than the physical.” It is another type of Void, another Non-Being that is not the empty space where material atoms bustle, but rather the *suspension* of space, the paralysis and disappearance *in there* of atoms; it is “the non-existent” space and therefore the “non-existent” time. This is a symmetrical line that is present between one atom and another, structuring each play area and establishing equivalence among them. For Democritus, the Void is space; for Orozco, the void is the Non-space. At the same time, however, for the two the void is *what is not there*: the Non-Being or the Non-existent.

Mechanical movement, time, space, and accidents are the elements of Being, the materials of the game in which we are obliged to participate and through which we create matter. Immobility, suspension at the game’s line of symmetry, non-perception and the infinite: these are the non-determinates that paradoxically structure all games, the stuff that *in absentia* constitute Orozco’s Non-Being. As it will be seen later in the text, a derivation of this artist’s dialectic between Being and the void is that space is a kind of matter—or matter a kind of space, so that the actual contradistinction is between matter-space and the void.

2 *The Atomists*

Precedents

Orozco seeks out places or situations where the game is temporarily suspended, where symmetry lines are made evident and especially accessible to manipulation. He also looks hard for those phenomena where atomic movements become obvious, where the game is revealed with unusual clarity. Games that require highly developed skills and unusual loads of chance fit this description. In these kind of games, players consciously intervene in the mechanism of the universal

game, betting on their skills to alter it and on their luck to affect it at the right times.

These are the reasons that Orozco took sport photographs printed in popular British tabloids for *The Atomists*. Contemporary mass-media sports are paradigmatic games in their manifest combination of skill and chance; they require the highest skills for manipulating the arbitrary rules and symmetrical structuring of games—and the distilled drops of good luck that all players pray for before each match. Yet sports acquire their highest meaning through mass media. The newspaper itself (or T.V., radio, etc.) is actually an extension of the play field. This is the place where the players and the balls actually achieve their finest moves: those of sign pitching and social space engagement. The newspaper, like the TV, actualises the true meaning of the sport, which is not so much a spectacle of athletic feats as a grand production for social space construction and signification.

The photographs correspond to spectacular moments in the contemporary sports most adored by the British people: football, cricket, rowing, rugby. After all, as Mark Haworth-Booth has pointed out, the British take pride in being the culture that has “given the world most of the sports and pastimes that enthral it.”⁸⁸ It was only fitting that Orozco should go to the place of origin of contemporary sports for unravelling the structure of the basic game of atomic exchange.

The artist has been keen to point out other sources of influence in the graphic depiction of his atoms. André Cadéché's coloured bars used as walking sticks, Constructivist propaganda posters like those of Rodchenko, or Duchamp's *Roto Reliefs*.⁸⁹ These are all paradigmatic works of modern art that convey the sense of metropolitan transportation and optical movement corresponding to the mechanised subject. Yet the artist draws our attention to another important source that is outside the field of western art, the mandalas of Tantrism. Whereas the precedents of modern art show

him the geometric mechanisation of body movements and visual perception, the diagrammatic mandalas (“circular diagram[s] of the process by means of which the universe unfolds itself from a centre,” writes Philip Rawson),⁹⁰ of Tantric art point to the possibility of producing a perceptual, psychical suspension in the spectator through the contemplation of a diagram of the unfolding universe. For the “Artists Curate” feature (where “an artist organises an ‘exhibition’ for these



Ill. 21 *Atomists: Jump Over*, 1996

pages each month”) of *Artforum* of November 2001, Orozco included some Tantric and Jain pictures, declaring to Daniel Birnbaum that

Tantric diagrams are activated by the viewer in a very specific way. You move through the image and into a new awareness... you are opened to the void, prepared to be enlightened by the real.⁹¹

Through resources developed from the visual and psychic mechanisms of modern sports and art, as well as from the perceptual suspension achieved through the geometric patterns of mandalas, Gabriel Orozco developed his own representational model of the elementary geometrical fields that constitute his version of atoms. The artist is able to make us understand that through the visual and corporeal mechanics of contemporary life it is possible to arrive at an understanding of the unfolding mechanics of the cosmos at both micro and macroscopic levels.

Atomic prints

Eternity is a child at play, playing draughts: the kingdom is a child's.

HERACLITUS, reported by Hyppolitus, *Refutation of all Heresies*.⁹¹

In the infinite replication of sports images through mass media, professional games propagate their own actualization of the infinite, incessant game of atomic interplay. Players are made up of atoms. Their movements follow, on a macroscopic scale, the atomic mechanics from which their own movements spring up. It is no surprise, therefore, to find the correspondence between Orozco's exploded atoms painted over the magnified photographs, and the players' movement.

Newspaper photographs are actually printed with almost microscopic dots, tiny circles printed each in one of the three primary colours (cyan, yellow, and magenta) as well as black. Nearly invisible to the naked eye that looks up close, they combine optically at the normal viewing distance, causing the figures to appear as full coloured volumes. These dots are the printer's atomic elements that constitute the form of each figure. It is a printed, optical analogy of how bodies are physically constituted by atoms as coloured, circular units. For *The Atomists*, Orozco simply started with exploding the tiny printed dots into mural scale, bisecting them vertically

and horizontally, and then reprinting them with computer plotters onto the original, magnified sports photographs.

The atomic overprints are based on the elementary dots of the news photo. The images of the atoms are based on a physical element, the printing. That is why, when enlarged, the circles and the ovals do not appear as something strange or foreign to the picture. And that is why, also, the players' movement correspond to the axis and lines of the atoms: there is a correspondence between one and the other, between the physical print and the enlarged atom, and between the atom and the physical feat.⁹³



Ill. 22 Atomists: Heavy Whipping, 1996

In the magnification, Orozco emphasised the orthogonal, bisecting axes which structure the atomic arrangement on the field. These axes are lines of symmetry that orchestrate the analogous, equivalent geometric play-field as a potentially infinite extension. Space is as infinite an extension of the time map of atomic exchange as perception can apprehend. The non-space that is symmetry, on the other hand,

corresponds to *eternity* in the etymological sense that Aristotle recovered for the word, that of being “a name derived [in Greek] from always being; eternity, immortal and divine.”⁹⁴—but not with the sense that he endowed the image as literally “the end of the entire heavens.” For Orozco, eternity is mingled right through the continuous structure of the perceivable universe.

Time and again Gabriel Orozco underlines the fact that there is a correspondence between the conceptual atomic movement and its effects on the physical world; that the atom, though an ideal unit, has a physical result. The atomic movement is as much a mentally conceived process, as a physically present event. It is made evident, for example, in the billiard balls and pendulum of *Oval Table*, which act as atomic units interacting with reality; or in the balls of *Ping-Pond Table*, or the circles inserted into the leaves of *Moon Trees*. Orozco also makes atoms visually evident in the instantaneous physical prowess of sport idols.

Sports Automations

This is the real relevance of modern sports. Contemporary mass sports reveal with unusual clarity the mechanics of the universal, all-pervading interplay of atoms and sign construction. These active, highly public interventions in the incessant exchange of events represent a kind of collective staging of the everyday exchange of signs.

The Atomists also explain the popularity of modern sports: through their active intervention in the arbitrary, universal atomic game, sports convince us that we live in a world of risky and fortuitous events that, however, constitute a game in which we can win or lose. Sports, in short, serve to reassure us that the universe is a huge global game structured by abstract mechanical units that obey no will (higher or lower) but only comply with the basic rules of all games: symmetry, the laws of probability and tedium.

The atomistic sports described by Orozco seem to follow the demand that Nietzsche formulated for atomism in the late nineteenth century. The mechanism of contemporary sports is not intrinsically determined by physicality and there are no material atoms, no souls locked forever in indivisible packets, no Monads:

Regarding materialistic atomism: it is one of the best-refuted ideas that exist...
...In the first place, we must eradicate that other and more deadly atomism, the one that Christianity has been most successful in teaching, *psychic atomism*. Allow me to use this expression to designate the belief that conceives of the soul as indestructible, eternal, and indivisible, as a monad, as an *atom*. That belief should be expunged from science!⁹⁵

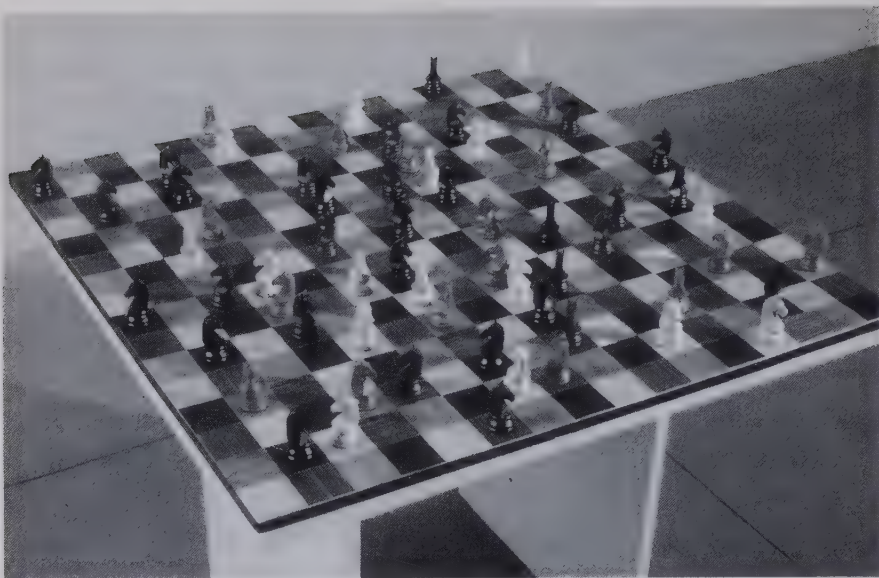
Modern sports have to do with the playful, accidental and mechanistic exchange of atomic automaton players—a fitting vision for the dogmas of the free market: no ideologies, no ideals, no history, only the natural mechanisms of competition, apparently. The only escape route left is holding oneself to the line of symmetry, placing oneself in the middle of the non-space that connects to infinity, to the origin.

Orozco's atomic interplay, especially evident in contemporary sports, is what he considers as the underlying mechanism for all events in the world. This is Orozco's message when he draws interacting atoms on bank exchange notes or on airplane tickets. Travelling, like sports, is another activity exceedingly sensitive to atomic vibrations: encounters, near misses, detours, accidents... Atoms are also active in the growth of trees, in the flight of kites: *Light Through Leaves* (1996), *Vitral* (1998).

3 *Horses Running Endlessly*

The rigor of chess

Molly Nesbitt points out that in Orozco's vision, the intermingling of atoms is based on principles similar to those of



Ill. 23 *Horses Running Endlessly*, 1995

chess movements: "Later, he would explain that the general logic guiding the shifts of colour in the disks was derived from chess. For him, it was instinctual to think in terms of chess because as a child he had been a chess champion."⁹⁶ These circular or oval atoms are structured with two central axes, perpendicular to each other, as a starting point. The axes are symmetry lines of displacement. They divide the atom in two or four equal parts, of which no more than three are usually coloured. Those are the four regions alternatively occupied, or activated, by elementary colours. The mechanistic movement of colours through the atomic regions mimic those of the knight in chess; it is a mechanic, non-linear, three-dimensional movement that conditions the combinatory art of the atoms:

Deep in the heart of the *Atomists* an inner circle provides the point from which three colours move out like the knight, straight up two squares and over one. The colours mark the absence, of course, of any knight. Knights have touched and left.⁹⁷

Orozco's atoms are conceptual, elastic circles that adjoin each other; they are composed of four symmetrical, sub-atomic regions which move through the atoms in chess knight man-

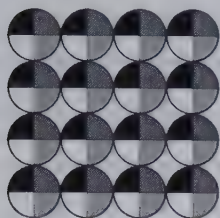


Fig. 27 The atomic chessboard

ner. These coloured, sub-atomic regions can jump from atom to atom, "straight up two squares and one over," in their displacement. The fabric of adjacent atoms constitutes an infinite chessboard in itself,^(Fig. 27) the mapping of region displacement that makes of the atomic tissue a map of both space and time.

Sub-atomic knights

Chess knights are simply called *caballos* (horses) in Spanish. The name emphasizes the particular, arbitrary mobility of the piece that, like a competition horse, is rather adept about jumping over obstacles. It is a piece particularly suited to Orozco's purpose of representing the incessant, combinatory movement of atoms in their spatial chess board. He made a macro-atomic representation of them in *Horses Running Endlessly*, in 1995.

The artist started by modifying the dimension of the traditional chess board. The usual eight-by-eight-square grid has been enlarged into a sixteen-by-sixteen-square board, so that the number of squares grew from 64 to 256, that is, four times more squares as in the original game. In both cases, the number of squares on the side and as a total is a multiple of four, which is the number of squares covered by the displacement of the knight when including the starting position. Moreover, in addition to the two regular, alternating black and white squares, Orozco added two other squares of shades intermediate between the black and white ones. Thus the number of types of squares is, also, four.

This configuration implies that the atomic fabric is an infinitely extended game board that, however, unfolds itself in scales that are multiples of four, reflecting the eight-fold, potential symmetrical movement of horses on the Euclidian plane.

The extended board is populated only by *caballos* (or knights), the other chess characters pushed out of the game as dispensable for the necessary, infinite continuity of the game. The artist has stressed the importance of his choice of the knight for his model of chess. For him, the knight is a model of mobility, through three-dimensional symmetry.^(Fig. 28) The fact that, as noted above, the knight can “jump over” other pieces

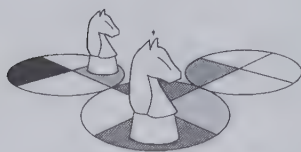
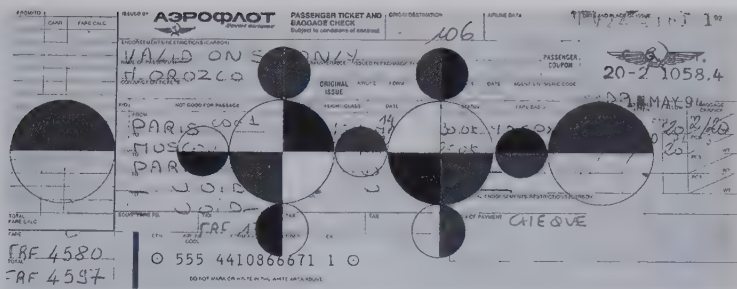


Fig. 28 Endless Running Horses

reflects its capacity to move out of the plane of the field and above other active game elements.

Of course in playing chess you can also lift all the other pieces to move them into another position. Yet before doing that you visualise their line of movement on the board. Their movement is that of sliding through the board. But the knight is not bound to the ground. Conceptually and physically, it jumps over the other pieces. As far as I know, it is the only piece, in any game, that names three-dimensionality.⁹⁸

It is a game without a King to aim the check mate, an endless match of mobile horses. As elements with the capacity to perform only *one type* of movement, which follows a mechanistic non-linearity, the sub-atomic knights are automatons condemned to the ceaseless performance of their one displacement. That displacement, however, when simultaneously performed by an infinity of non-stop knights, acquires the infinite complexity that perhaps only an infinitely comprehending mind, like that of Leibniz's God, could see at once. Instantly, perhaps, yet without the capacity to pre-determine their future combinations, since the knight displacement in the four regions of the atoms occurs by a mere process of



Ill. 24 Ticket-Aeroflot, 2001

chance. Like a randomly moving automaton, it moves to occupy whatever empty space appears in any region within its eight-fold reach. There is no inside information, within the sub-atomic knights, as to the sequence of movements it must perform, only the capacity to do it.

The first type of symmetry: translation in space

However, the symmetrical movement of the sub-atomic knights is a particularly complex displacement through an axis. The knight is translated through the axis of symmetry in two movements (“straight up two squares and over one”) without suffering any kind of variations in its form or performance. This operation lies at the core of the definition of symmetry, as explained by Richard Feynmann in his 1960 lecture for the BBC, “Symmetry in physical law:”

Professor [Hermann] Weyl, the mathematician, gave an excellent definition of symmetry, which is that a thing is symmetrical if there is something that you can do to it so that after you finished doing it looks the same as it did before.⁹⁹

In particular, the symmetrical operation performed by the knight amounts to what Feynman calls “The simplest example of this kind of symmetry—you will see that it is not the same as you might have thought, left and right symmetric, or anything like that—is a symmetry called translation in space.”¹⁰⁰ This type of symmetry is that in which a thing or a system is translated through space to any other place, and still be the same thing and perform identically. In physics,



Ill. 25 *Horses Running Endlessly, 1995. Detail*

this type of symmetry is rather handy as it means that one does not need necessarily to displace a thing—an electron, for example—to another place to cause some specific effect: the original electron can be replaced by an identical (symmetrical) electron, and the result will be exactly the same.

Going back to our horses, they perform a two-step operation of translation. The knight, by virtue of its spatial translation symmetry, can move into any place in three dimensions and remain invariant. Further, the function of any of them can be performed by any other, identical knight.

As a four-region geometric field, Orozco's atoms constitute the temporal mapping that structures the spatial displacement of the sub-atomic knights. As one continuous tissue of adjacent, elastic circles and ovals unfolded into three or more dimensions, atoms make up the basic time map of the universe.^(Fig. 29) Mobile knights, on the other hand, constitute the elementary sub-atomic particle of movement and, in their spatial symmetrical translation in space, the fundamental model of all games.

That atoms are elastic forms that can be elongated into ovals of any length will prove a feature of great importance when discussing, later on, the deformation of space induced by the *Empty Shoe Box*, or the by the skull of *Black Kites*.

Perpetuum mobile

Knightly sub-atomic automatons jump over each other from one semi-circular unit into another. After their three-dimensional movement, knights cannot overlap each other's position; as in the game of chess, only one knight can occupy a

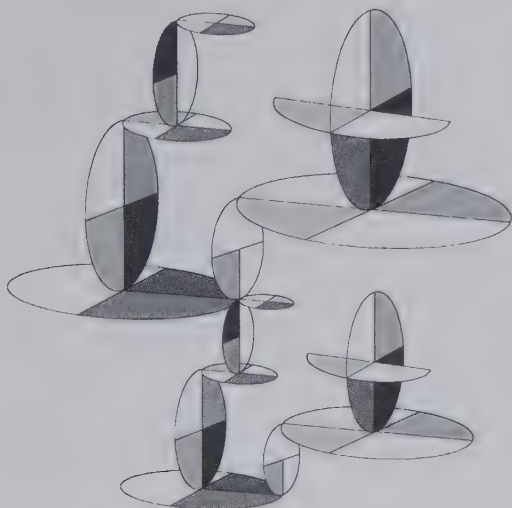
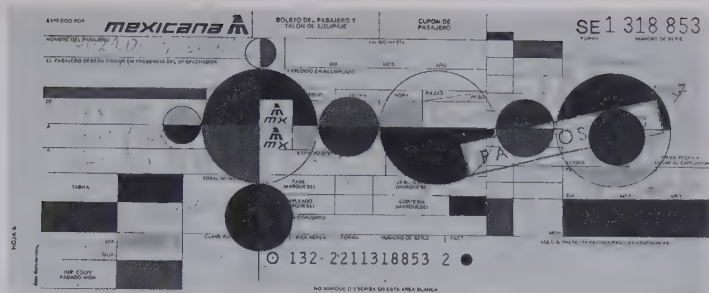


Fig 29 The three-dimensional atomic fabric

square at a time. The knight's position, as seen in the diagram above, is designated by Orozco through a region of primary colour, one of four areas into which the atom can be divided. Where there is no knight present, the circular quarter is left colourless, transparent. Each move of a knight to an empty, transparent region seems to cause an instant displacement of the knights that were adjacent to that (newly occupied) position.

The change of position by a knight implies a shift in the symmetrical balance around the atomic regions, much as any knight move on a regular chess game implies a reaction on its surroundings. The symmetrical imbalance causes then a re-accommodation of adjacent knights, thus setting off a never stopping mechanism. The chessboard appears then as the platform of an endless game of endlessly running horses, ever striving to win the game of symmetrical imbalance. It is the true *perpetuum mobile*, not the pendulum swinging in the void, whose material character implies its eventual retardation. These are non-dimensional automatons perpetually pushing each other aside by the non-force of symmetry.

For this reason, everything in the universe is in constant change, in constant motion. Atoms are incessantly exchanging sub-atomic particles in the search for a never attainable balance, for a moment of rest. Yet the loss or gain of a particle by an atom creates an imbalance on the surrounding atoms. They move their pieces. The game of atomic chess constitutes the perpetual machine that creates and recreates worlds. Their motion, however, can be momentarily stopped by the very element that sets off their motion: the line of symmetry. In their automaton-like nature, Orozco's atoms are somehow related to Leibniz's Monads, which the philosopher conceives also as "incorporeal Automatons" (*Monadology*, § 18). However, there is a radical difference in that the Monads carry within themselves the information about the entire universe and the one role they are programmed to perform in it. They are part of a pre-established series of infinite operations whose result at any moment in time is known to the infinitely comprehending mind. Orozco's atomic automatons, on the other hand, carry no information about the total universe. They behave simply in accordance with the laws of symmetry that set all games in motion. Our world, in this regard, results thus from the chance accommodation of the atomic automatons in their endless combination. Through the infinity of time implied by



Ill. 26 Ticket-Mexico, 2001

their movement, atoms have combined themselves into infinite other types of matter and even other types of space, and there are as many existing worlds in the infinity of time as there are possible combinations of three-steps-at-a-time knights.

It is a chessboard atomism in which, however, it is possible to participate directly. The atomic mechanism, ruled by symmetry, arbitrariness, and infinite tedium, is an endless sport that we can engage actively.

This is where Borges and Orozco meet and diverge. Orozco's atomistic chess implies a random structuring of the universe that is open, however, to participation. It is a game ruled by chance and symmetry accessible to both angels and humans, under the condition that no result is final and there are no winners. Borges, on the other hand, still imagines an order that is potentially apprehensible, if *only* by angelical minds; it is a vision not too distant from Leibniz's actual world contingent only on God's infinite vision.

Ten years ago, any symmetry under the appearance of order—dialectic materialism, anti-Semitism, Nazism—was enough to spellbind men. Why not surrender to Tlön, to the precise and vast evidence of an ordered planet? The reply that reality itself is ordered is pointless. Perhaps it is ordered, but according to divine laws—let me translate: to non-human laws—that we can never perceive entirely. Tlön may be a labyrinth, but it is a labyrinth planned by men; it is a labyrinth destined to be deciphered by men.

The everyday routine and contact with Tlön have disintegrated this world. Transfixed by its precision, humanity forgets time and again that Tlön's is the precision of chess players, not of angels.

[JORGE LUIS BORGES, "Tlön, Uqbar, Orbis Tertius."]¹⁰¹

Orozco's universal game, on the other hand, as long as it is structured by an *active* symmetry, results in an instantly fluctuating order that is totally un-predeterminable, even by an infinite mind or angels.

In a world apparently ordered with chess player's rigor—by “a scattered dynasty of loners [that] have changed the face of the world,”¹⁰²—we are fascinated with sports and games. We accept our fate as competitors in the global contest, but we also discover the possible escape that art can provide for us: the momentary pause over the line that connects to the infinite, the suspension of all the mechanisms of the game at all levels to recreate, in that instant, the world.

EMPTY SHOE BOX

*1 Classical dialectics involving space,
the void, and matter*

The sculpture of emptiness

Gabriel Orozco is constantly referring to his work as a sculpture of the void. It refers to an idea that the solid object is in reality a container—of other things, of matter, of space. As developed in this essay, his sculpture of the void seems to be the sculpture of non-spatial lines that affect physically the platforms of game, of playing tables, of surfaces that can receive the accidents and trajectories of the universe.

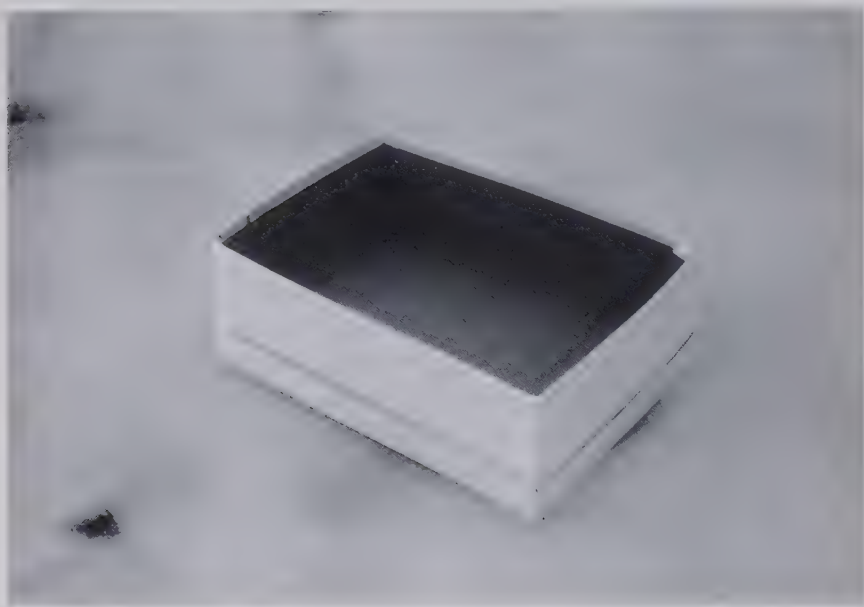
GO – Yes. First of all I'm a recipient and second I'm a producer. Sculpture is that, a recipient.

BB – Of what?

GO – Of action, of somebody, of me. It's more like a platform including language, so it's charged with information, with history, with many things.¹⁰³

Sculpture as a recipient, and volume as an illusion of sculpture. In some of his works Orozco seems to move beyond the idea of the sculpture as platform for games structured by the non-dimensional line of symmetry. It moves into an exploration of the basic nature of space, volume, and what he calls the non-space. Further clarifying the concept of sculpture as a container, Orozco points out how every sculpture, in fact every object plays an illusory game of volumetric solidness. It was a humorous manifestation of this idea

that took him to hang an empty hammock at the Museum of Modern Art (*Hammock between two skyscrapers*, 1993). Set in the sculpture garden, Orozco produced a sculpture which is a container waiting for the lazy Mexican to doze off among the high art of the XXth century. Setting aside the ironic commentary on the economics of contemplativeness



Ill. 27 Empty Shoe Box, 1993

required for “appreciating” high art (and its subversion through a Third World contemplativeness), Orozco would point, rather, to the more honest character of his piece as against the other, more serious ones in the sculpture garden. The hammock, like any ordinary object, acknowledges its character as an empty receptacle.

GO – After eating the orange, all that is left over is the empty skin. I was thinking of the void, and the interior of the body, the interior of these objects: the open shoe box...

...And then we were talking about the erection of Rodin’s *Balzac* at the MOMA while I was working there. The empty hammock waiting for the body. And all

these bronzes in the garden that are just empty—they are just metal but hollow inside. The sculpture is an illusion of volume but it's just an illusion. Then the DS is also a void for transportation; like fruits that are objects for transporting seeds. They have colours that attract the animals which eat them and then shit them and that's how the tree survives. So fruits are containers, the same as the shoe box, the same as the car, the same as *Yielding Stone*.¹⁰⁴

Of all these sculptures as container, the most paradigmatic of all is probably *Empty Shoe Box*, presented at the 1993 Venice Biennale. The most paradigmatic in the sense of being the most direct representation of the true material of Orozco's sculpture, space — “why are you against the notion of space in sculpture?”, Orozco questions in turn Benjamin Buchloh, even after the critic cornered him into revealing his motivations for work.

BB — Opposition? Self defence?

GO — Yes. And the void. The idea of non-space.

BB — The void is a total negation?

GO — A total negation and a non-space.¹⁰⁵

Democritus' Void vs. the Aristotelian Place

The void and the non-space: Orozco likes to emphasize that his research in sculpture focuses on volume as container and the void that it holds. Yet it is of extreme importance to clarify further the relationship between the concepts of void and space. In fact, in the equivalence or the non-equivalence of one to the other lie two different cosmological conceptions, and therefore also two different philosophical systems complete with their ethical derivations.

The idea of space as the void that allows matter—atoms—to move about was first postulated by Democritus, building on the work of his teacher Leucippus. Democritus, as described before in this essay, considered atoms as Being, *what is*, and empty space as the Non-being, the necessary counterpart that allows Being to exist and occupy a place in the universe. From this follows that for Democritus space and the Void were equivalent notions, as reported by Simplicius:

“Democritus thinks that the nature of eternal things consists in small substances, infinite in quantity, and for them he posits a place, distinct from them and infinite in extent. He calls places by the names ‘void,’ ‘nothing’ and ‘infinite; and each of the substances he calls ‘thing’, ‘solid’, and ‘being.’”¹⁰⁶

Some years later Aristotle set out to do away with the Atoms-and-Void concept of Democritus and his followers the Epicureans. Aristotle started out by declaring that matter is made up of the four primordial elements, which in turn are made up from a fifth, divine element, *ether*. By virtue of the observable movement and decomposition of the elements in the universe, Aristotle considered that it “is impossible that the bodies we call simple [the elements] are more in number” (*De Caelo*, I, 3).¹⁰⁷ Furthermore, he considered as a fallacy the existence of the Void as a kind of infinite emptiness that allows bodies to move, since there would be nothing against which to measure absolutely this movement, as when he says that “there is no proportion whatsoever between the void and the full” (*Physics*, IV, 8).¹⁰⁸ This type of anti-relativistic position is further reinforced by Aristotle’s concept of space, which he liked to define as a place (*chora*). Space cannot be neither form, nor matter, nor even an interval or void between things. “We are left to conclude that place is the fourth of the things we have talked about [as possible definitions]: that is to say, the extreme limit of the enveloping body... [with] yet even another consequence: place seems to be a kind of surface and something like a vase; that is to say, a wrapping. Further, the limit is with the limited thing, and therefore place is with the thing or being itself” (*Physics*, IV, 5).¹⁰⁹

Place is the limit itself, or the wrapping, of the existing bodies. The universe, being a material, continuous body, must of necessity have its own limits, or wrapping, in order to have place. These limits are what Aristotle called the Spheres of Heaven, several layers of *caelo*, one wrapping the

other, with the earth as the central and only world. Beyond the limit of the heavens, the last Sphere, Aristotle considered the existence of the infinite not as a perceivable, substantial thing, but as a kind of unperceivable, divine essence, *eternity*: "... the end of the entire heavens, and the limit or end that contains all time and infinity, is eternity, a name derived [in Greek] from always being; eternity, immortal and divine" (*De Caelo*, I, 9).¹¹⁰

The Platonic Receptacle

Actually Aristotle was aiming his criticism of the other three possible definitions of space not only against Democritus or Anaxagoras, but against his own teacher, Plato. Aristotle had defined place as limits or wrapping, asserting that it could be "neither form, nor matter, nor a space or receptive interval."¹¹¹ The concept that space could be a kind of substance or matter was put forth by Plato in the *Timaeus*; it is a concept that remained dormant (even when Giordano Bruno tried to awaken it) until the first decades of the 20th century.

Plato sets forth his cosmology by declaring the necessary existence of two beings: "the indivisible, eternally unchanging Existence and the divisible, changing Existence of the Physical world" (*Timaeus*, 35).¹¹² Later, as his description of the universe becomes more complex, Plato traces back his argument, stating that he had intentionally overlooked a third, necessary constituent of the universe; he then warns that he had not talked about it because by nature it is "a form that is difficult and obscure; What must we suppose its powers and nature to be? In general terms, it is the receptacle, and, as it were, the nurse of all becoming and change" (*Timaeus*, 49).¹¹³ This receptacle is space itself, which, in a rather "wonderful way which is hard to describe" (*Timaeus*, 50)¹¹⁴ takes on the forms, allowing itself to be modelled upon by the imperceptible "things-in-themselves" which are ideas. Using another metaphor (*Timaeus*, 50), Plato describes

space as a kind of modelling gold that receives the imprint of form, so that it could even be said that the real thing is the gold and not the shapes imprinted on it, or that even if space seems an empty stuff, it is actually the real thing from which things are modelled: “—we look at it indeed in a kind of dream, and say that everything that exists must be somewhere and must occupy some space, and that what is nowhere in heaven or earth is nothing at all. And because of this dream state we are not awake to the distinctions we have drawn and others akin to them, and fail to state the truth about the true and unsleeping reality: namely that ... an image, ... needs to come into existence in something else if it is to claim some degree of reality” (*Timaeus*, 52).¹¹⁵

Thus Plato gives space a pre-eminence similar to that of the other two realities that were necessary for the world to exist: “There were, before the world came into existence, being, space, and becoming, three distinct realities” (*Timaeus*, 53).¹¹⁶ Space has acted as the receptacle, or modelling gold, of the ideas (*Being*), which, once imprinted, *become* a “moving shadow of something else” (*Timaeus*, 52),¹¹⁷ or changing matter.

Matter, therefore, is a kind of dream-like substance actually less real than space itself, even if the mechanism by which this happens is rather obscure, as Plato himself acknowledges. That this is the case is further reinforced by Plato’s own concept of the atoms, the basic constituents of the elements: the scalene and the isosceles triangles.

Space as the mysterious receptacle of form, triangles as the ideal, constituent atoms of the elements. Combined, scalene triangles—which have an infinite number of “varieties”—and isosceles triangles form the basic geometric, “molecular” volumes out of which the elements are formed. (Fig. 30) Plato does not dwell much in the details of how a

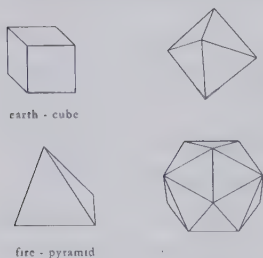


Fig. 30 The Platonic elements
built out of triangles

volume—like the earth cube—is derived from planar triangles,¹¹⁸ but it is clear that he is thinking of ideal, conceptual (and not Democritean, material) atoms as the basis of matter. Like Democritus, Plato believes his atoms to constitute Being, yet once impressed upon space, figures become “a moving shadow,” assuming the fleeting existence of images.

Aristotle, on the other hand, would not accept any kind of “difficult and obscure stuff,” nor any kind of infinite void, and so set himself out to obliterate all non-logicality from Greek cosmology. Not wandering astray from Plato, Aristotle concedes that space *is* a receptacle, but only in so much as it is the material limit to the stuff it contains, just as a vase is the container that gives a place to water through its material limits.

2 *The Sculpture of Empty Space*

My Hand is the Memory of Space

Gabriel Orozco would agree with Aristotle that volumes are nothing but containers or vases that are meant to give a place to what they hold. Aristotle pointed out that things have limits in themselves, so that they are by nature containers or receptacles—they define a place. Orozco says something similar when he declares that all volumes are containers of something else—they give a place to what they carry. But this is probably as much as the Mexican artist would agree with the Macedonian philosopher, since the former sees space as a kind of substance, actually more in agreement with Plato, even in the sense that real matter is the product—the accident, Orozco would say—of ideal atoms.

That space is a kind of substance that can be handled—sculpted—is already suggested by Orozco when he says that sculpture takes place in the space between sign trajectory and spectator—in the space between the players:

BB – What do you mean by activating the space? That seems a rather mysterious term that you use quite frequently.

GO – I mean activate the space between the sign and the spectator or a third person who is perceiving that space. I think sculpture happens in that space, between the object and the person who is looking at it. It's obvious but it's still mysterious how much you can do with that space.¹¹⁹

An intimation of that mysterious working of sculpture of space is given by Orozco in the work *My Hand is the Memory of Space* (1991). In this work space is presented as a very structured arrangement of identical wooden shapes laid on



Ill. 28 *My Hand is the Memory of Space*, 1993

the gallery floor. The wooden shapes are actually spoons for ice-cream sold in the streets, a popular treat in warm Mexico. Children customarily throw the spoons on the sidewalk once they are finished with their ice-cream on the way to school or home. The spoons then become residue lingering around the streets. Used-up ice-cream spoons have coalesced into a spatial arrangement. Space is also a residue left

behind after we use it, and it is even left with a kind of stamping of the hand where it once was, as when the children's fingers are left impressed on the spoon of, say, a raspberry flavoured ice-cream.

Yet space is actually the substance that has allowed the hand to take place; it is continually allowing matter to be impressed on it, so as to make it perceivable, so much that even after the hand has moved to some other space the original space seems to be left with the memory of the thing—even if for an imperceptible instant. Plato resurrected, one could think, and Orozco could repeat that space “continues to receive all things, and never itself takes a permanent impress from any of the things that enter it; it is a kind of neutral plastic material on which changing impressions are stamped by the things that enter it, making it appear different at different times” (*Timaeus*, 50).¹²⁰

We can examine further whether, regarding Orozco *vis á vis* Plato, we are faced with a Neoplatonic phenomenon of perfectly circular time, or, whether it is closer to what Borges reports Lucilio Vanini saying in 1616: “... human history repeats itself; there is nothing today that has not been before; whatever has happened, will happen again; yet all this shall be in general, and not (as Plato argues) in particular.” (*De admirandis naturae arcanis*, dialogue 52).¹²¹

The artist provides us with a similar intimation of the working of space in another sculpture about the hand: *My Hands are my Heart* (1990). In this case the “plastic material on which changing impressions are stamped” is red clay, of the type used in Mexico to produce red bricks for construction. This is not so much a residual material, but a material usually shaped squarely for the atomic construction of walls. It was also the most common sculpture material in pre-columbian times.

As in *My Hand is the Memory of Space*, the clay has been left with the memory of Orozco's hand, so that the clay could



Ill. 29 *My Hands are my Heart*, 1991

appear as a metaphorical image of plastic space. Plato, obsessed with purity, considered space as a kind of “neutral plastic material” of which the closest metaphor he thought of was gold, or an odourless liquid that receives fragrances. Orozco, more concerned with history, conceives of space as a substance that carries with it the historical memory of the things that have been imprinted on it. Space is both ice-bar handles with finger imprints, and pre-Hispanic clay nowadays turned into Mediterranean-culture bricks. (Recently in Colima, Mexico, a red-clay brick factory was shut down after it was discovered that the mound of clay from which the material was carved out turned out to be a pre-Columbian pyramid). In this way space is both a neutral material as much as a history-loaded stuff, charged with the imprint of infinite memories of things:¹²² “But the concept involving in making the *Yielding Stone*, and the reasons why I did it, were because of the idea of vulnerability and the idea of a medium that is changing all the time.”¹²³

The Yielding Stone: space as container

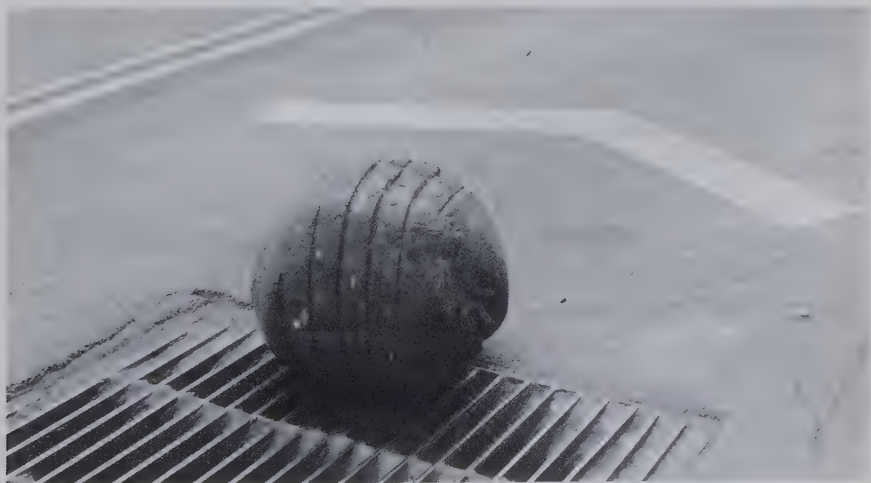
A lump of time-imprinted space was presented by Orozco as *The Yielding Stone* (1992). A plasticine ball was rolled on the streets, allowed to receive the imprint of any markings on the pavement, even to accept whatever pebble or dust stuck to it, so that at the end of its tour the ball had turned into a lump

of material marked with the accidents it encountered as it rolled over the urban surface. A work like *The Yielding Stone* necessitates a non-Aristotelian frame of mind thinking about space, and even matter. Space has been imprinted onto its limiting surface; the surface itself is changing, accepting historical space within its own memory. It is a material whose limits are open, ready to accept the markings and deformations that the outside throws on it. It is a container, but a container of exterior events, as Orozco pointed out to Benjamin Buchloh,

BB – What is *The Yielding Stone* a container of?

GO – Of itself and of matter. It is a recipient for all the people that touch it and all the dust imprinted with greasiness. So it's a substance that is a recipient that is a container.¹²⁴

Even after it was apparently “finished” and left in the exhibition space, the lump of plasticine was still active as a map open to events. People were drawn to feel the material, to mark their fingerprints and push on the surface. And even after the exhibition place was closed, the ball was still deforming by the very force of gravity, so that the lump was collapsing on itself.



Ill. 30 *Yielding Stone*, 1992

Through *Yielding Stone*, Orozco made of a banal lump of children's sculptural material a simile of space. The ball, like the space structure of *My Hand is the Memory of Space*, is also imprinted with the traces of the hands that touch it, and, like in the fabric of ice-cream spoons, the trace left by the hands is being slowly erased by the very resilience of the material, which keeps on restructuring itself.

The plasticine ball constitutes an image of space; but there is a symmetrical relation between matter and space, as much as space is also an image of matter, space being an imprint-receiving, mouldable material. Matter, as an accident of atoms, is itself a socially structured substance produced by the exchange of social signs. Space, conversely, is the projection of the map imprinted with the accidents of social events.

The kind of stupor that *Yielding Stone* has caused spectators only points out how Aristotelian-minded most of us still are with regard to space and matter. Most importantly, the work clarifies the extent to which Orozco agrees with Aristotle in calling all solid volumes *containers*. For Aristotle the limits are *closed* boundaries that define the place inside, and the material limits are the place itself; space is simply the area (and not even the in-between something) defined by those boundaries. Objects, having boundaries, are in this Aristotelian sense closed containers. For the artist, on the other hand, the container is only an open edge between a kind of atomic accident and another; limits and exterior are a fluctuating border line between two versions of a basically continuous substance that is produced via a social exchange of perceptions. Matter—the object—is the container of all the memory of social activity and exchange, of all the accidental stuff that keeps accruing onto an initial, primordial perception. Matter, it could also be said, is concentrated space.

This is also the reason why matter keeps “remembering” what it has been before any present configuration. It has been accumulating all the significations invested in it by every

temporal map of social construction—by history, “mother of truth.” As matter decays into dust, it is possible to trace its gradual retrogression into the different essences assumed through time, uncovering the different layers of the container. It is a process which in turn reveals the particularities by which a certain primordial material is invested with specific meanings. Rusted iron, found on the earth, recently assumed the role of ploughs that cut into soil, but before, that of skeletons of snakes, and yet before... The regression points to a kind of archetypal, original understanding of the material iron from which all later readings for it developed.

Home Run: Activated space

Space is the substance loaded with the memory of an infinite number of things that stands in between the players of Orozco's games. It is a substance structured by the time map recorded on the surface of the game. It is a substance that can be stirred up. The players start the game. The time-map changes. Space the substance is stirred. Memories of infinite things echo through it. The sub-atomic, nomadic automata are accelerated in their motion; space has been activated. It has been made to inflect and unfold by the accidents registered in the surface map of the exchange game. ‘Space’ happens when the sign is moving in life, or when the language is in action and when the spectator, the activator of the sign, enacts these relations in which knowledge, passion, sign, language, perception, sexuality, intervene.”¹²⁵

One of the best illustrations of Orozco's perception that space can be activated by signs and spectators is the work *Home Run*, made in 1993 during his exhibition at the Museum of Modern Art in New York. The artist, with the Museum's support and by means of a letter, asked the tenants of those buildings on 54th Street that face onto MOMA's sculpture garden to place some oranges on the inside sill of their front windows every morning. Even if a first impression might tell



Ill. 31 *Home Run*, 1993. Detail



Ill. 32 *Home Run*, 1993. Detail

us of an artist's whim in appropriating for himself a private area that can be viewed from a foremost art space, the piece can also be considered as a way to force the museum to engage in a discourse about the inevitable social character of its space. By virtue of placing the oranges in the interior, private space of the apartments, the space between them and the museum was activated: the object-sign was sent across the platform of game—the socially defined space that is the street—into the Museum player area.^(Fig. 31)

The Museum-as-player had to study the trajectory of the sign as it went through the social space, considering what accidents happened to the oranges-as-signs in their trajectory

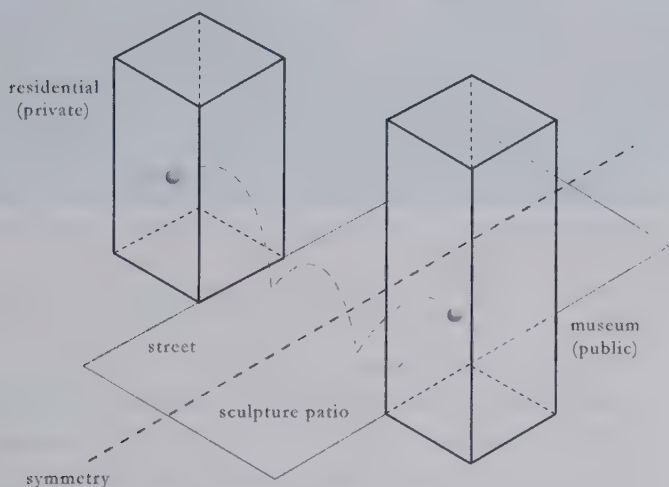
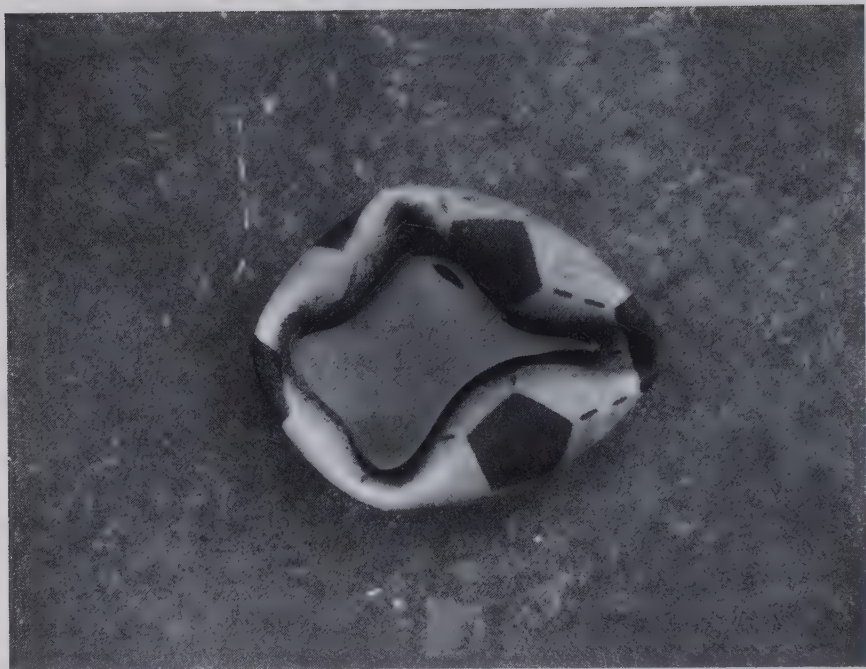


Fig. 31 The activation of social space: Home Run

to the curator's table and the official spectator's place. Likewise, the tenants were studious of the moves across their street, and of the accidents of the ball on the way back. Unofficial street spectators realized that they were the uninvited players. Even as the oranges bounce through the space into the museum, space is "stirred" by their trajectories, so that a memory of the events is left imprinted on it. It is this



Ill. 33 *Pinched Ball*, 1993

perceived imprint that spectators will recognize even after the piece is gone. The space of art—perceived usually as a private contemplativeness—is activated in its inescapable platform of social interplay, and it is the power of the sign to stir the space of the game that causes spectators to engage it. “The fact that I was not decorating their windows is very important; it was not a heroic thing, it was a very banal one. This is another very important aspect of the social-public sculpture that I am engaged in; it is not just a display of political opinions. It had to do with everyday efforts and how these small gestures transform reality. I was interested in how they can be as strong as a big iron or steel work in the middle of a square.”¹²⁶

Activated social space is political space, especially with regard to the street of the *polis*. *Home Run* is like the big, winning

strike of a contemporary artist: not expressing a particular, doctrinaire political opinion—irrelevant in our times—but making all players aware of the spatial integration between everyone in the city; aware of the political, social nature of every game and every space through which we engage reality. It is a home run against the contemporary institutions' promoted idea that individuals are solitary players in private, secluded spaces—like the museums—playing individual matches against some private Big Casino.

However, there is a further derivation in the work that touches directly on what has been discussed about the nature of space and the void in Orozco's *oeuvre*: the perception that if matter can be emptied out, left with a mark of void, so too can space be emptied out, voids produced where no material can be impressed—the void that matter cannot occupy. This is the sense of Orozco's non-space as sculpture. It is the total negation of space and matter—of socially defined, historical space and matter—and the affirmation of the possibility of a totally new universe springing out of it. It is an optimistic negation of the history of perception as the mother of truth; it is one of Orozco's motivations.

Pinched Ball: a new world

Pinched Ball, of 1993, shows this possibility of the non-space of sculpture: a used up soccer ball—a typical Orozco event-object—is no longer fit for use in a match because of a puncture. The game has stopped. The ball has lost its air, it sits, abandoned, a new type of container that receives rain water and the images of things that are reflected on it. The discarded air container, like the yielding stone, or the red clay, is another metaphor of space: the container—ball, lump of space—has been hollowed out. There is a void in space. In it, new substances, new space, altogether new images without history, are hatched out. Orozco's automatons have produced a new world. It is visible on the surface of the rain water.

3 *The Void*

A shoebox empty of space

This is the sense in which *Empty Shoe Box* is so paradigmatic of Orozco's work. It sums up a great deal of his vision about the sculpture of space and the void. Space, as an imprintable surface, carries a kind of monadic, historical memory. It is structured by the map drawn in the surface of the playing table by the trajectories of things—ice-bar handles on the street, chess-boards, pavement after the rain. It is in this sense of carrying memory that "Time is a social thing, space is a social thing".¹²⁷ However, this socially imprintable substance—space—can also be hollowed out, voids produced where nothingness is left, not even the atomic automatons.

BB – The void is total negation?

GO – A total negation and a non-space.¹²⁸

It is an empty shoe box. It is left on the floor, where it usually goes unnoticed, even kicked at times. The box is left open, its cover actually left as a smug pediment on the bottom part. For Orozco it is very important the fact that he left the cover of the box there, touching the floor:

"I could have thrown it out. But I didn't. What does it mean that the cover is still there, under the box?"¹²⁹

This is a *koan*. Like the box itself. A koan is a paradoxical question or situation that is presented to the Zen disciple in order to break down the logical continuum of his thinking and to push him into a logical impasse; when thinking is faced with its own incapacity, it gives up and a new manner of perception takes on: *satori*. Daisetz Suzuki, responsible for one of the earliest introductions of Zen Buddhism into western culture, wrote that *satori* "can be defined as an intuitive, interior vision; it is the counterpart to the logical intellectual apprehension. *Satori* represents the discovery of a new world."¹³⁰ Constantly, when talking about *Empty Shoe Box*,

Gabriel Orozco refers to *satori*.¹³¹ In fact, it seems as if he can only talk about the box in terms of koans, with questions that lead thinking about it to a closed alley and to the realization that *thought* is only getting in the way to the realization of what the box means. Thoughts set aside, the spectator sees that this is what the box meant all along: seeing with a suspended intellectual perception—with *satori*.

Orozco makes his koans primarily to create a void in intellectual perception. The empty shoe box on the floor is essentially a koan: it forces the observing spectator to ask him or herself: "What is an empty shoe box doing here? What does it mean? What could I be missing?" And this is exactly what it contains: what is missing.

The "missing" is not only the perception of things, but even the substance which allows perception to occur in the first place. "I could have left the empty box with the lid closing it. But then it would mean that it is containing something. But it is not. Not even space."¹³² The box is a container that suspends perception, and with it the time of the games. Space, as a substance that depends on the time structure in order to be perceived, disappears when perception stops. History and social meanings are drawn into a pond of void, into *mui*, the not-doing that brings about *satori*: "Mui. Non-action or maybe it is better not to act. Mui is identified with *satori*, in the sense that when the latter arrives, there is no action that comes with it, not even the action of thinking."¹³³ All games stop.

But this absence of perception and space produces, on the other hand, an acceleration of comprehension, much as black holes accelerate everything that approaches them before disappearing into the unperceivable centre.^(Fig. 35) Once again, this is the purpose of *satori*: accelerating the process of understanding through the acceptance of non-understanding. Gaining clarity of mind and agility of thinking, or what Orozco calls "awareness."

GO — ... At the same time I'm intrigued by the power of graphics to generate awareness.

BB — Awareness of what?

GO — Awareness of what you are looking at: a plane ticket, and what it means and what it does. The same is true for a photograph or a sculpture.¹³⁴

The choice of a container that held originally an object for human translation, shoes, underscores Orozco's dialectic between suspension and acceleration. The shoes are not there because they went somewhere else. Perception, similarly, is drawn into a void so that it can put on the shoes with which to move swiftly on to somewhere else.

Emptying the floor

Orozco still has many koans in store.

The relation of the box to the floor is very important. Why is the box in the floor? Why is it not lying on a table, or nailed to the wall?¹³⁵

In this one, however, we may have a clue as to the solution. A diagram developed from a sketch by Orozco shows the shoe

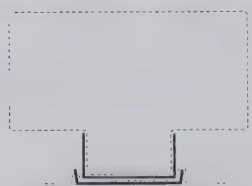


Fig. 32 Empty Shoe Box, section.

box in an architectonic section (Fig. 32).¹³⁶ The dashed lines seem to mark the substances that are moving into the box. Particularly intriguing is the line creeping into the space between the lid and the box itself.

The image that comes to mind now is that of the elephant-devouring snake drawn by the Little Prince: the box lies on the floor because it devours the space that is historically structured by the surrounding floor. The empty box actually deforms the structure of the floor—before digesting it—as a map of the time of the social game. (Fig. 33)



Fig. 33 Empty Shoe Box, on the floor.

Like the streets of Berlin, the floor surrounding the box is the wide historical space of our society: the deformation and cancellation of this space causes

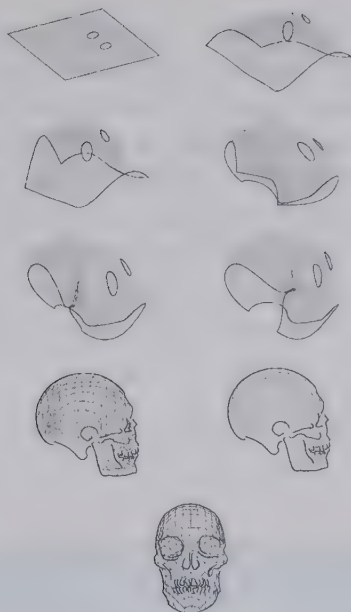


Fig. 34 Black Kites: *homeomorphic symmetry*

an integral suspension of all the social pitching of perceptions to the spectator. Like the zen apprentice, he is ready to perceive everything anew.

4 *Black Kites*

The void of the skull

A similar involution of space is performed by the human skull, as shown by *Black Kites*. Orozco has drawn on the surface of a skull a geometric pattern, using lead graphite to map out a grid of squares. The grid, however, appears to have been deformed somehow by the very process of cranial unfolding, so that the skull appears as a kind of topological surface that, starting as a flat Euclidian plane with holes, has been bent, stretched and in-folded, becoming a three-dimensional surface equivalent to the initial one.^(Fig. 34) The two surfaces con-

stitute the kind of map that topologists call a “homeomorphism, or topological maps of the plane,” in which the “properties of a geometric figure ... remain invariant when the figure is bent, stretched, shrunk, or deformed in any way that does not create new points or alter existing points.”¹³⁷

It is another type of symmetry; it involves an operation of surface-manipulation that leaves the geometric properties of figures congruent to the Euclidian originals. Gabriel Orozco was particularly attracted to this type of topological perception of volume as a folded drawing:

GO—... the eyes of the skull, the shape of this topographical drawing: as usual I was thinking of a sculpture, so it's a technical topographic drawing of a very complex shape, a natural form and a head which is very complex, related to Op Art and volume—a perception of volume through drawing.¹³⁸



Ill. 34 Black Kites, 1997

The interest in the sockets of the eyes in the skull derives from their function, analogous to that of the *Empty Shoe Box*. Whereas the skull surface surrounding the sockets has the role of the floor around the shoe box, the eye holes act as the voids that are absorbing the exterior visual objects that are propelled towards the head. (Fig. 35) The skull, as shown by the pencil lines of Orozco, structures the mental space throughout the map of the surface.

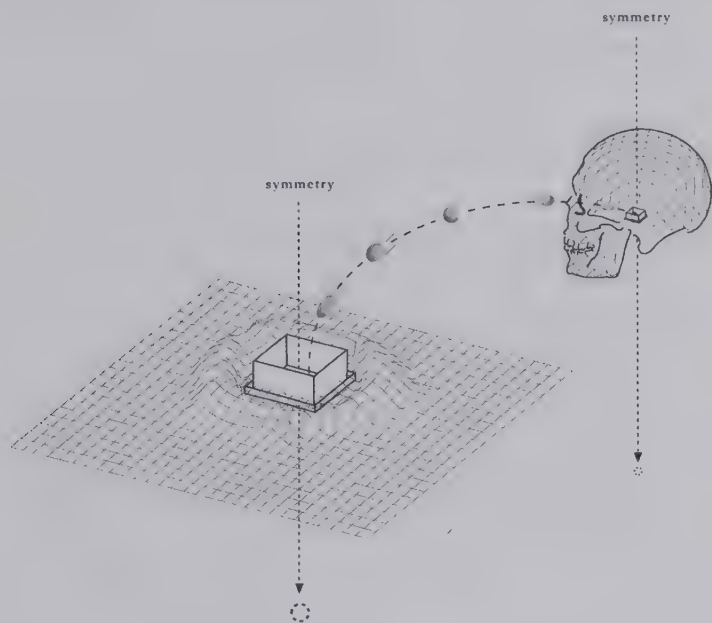


Fig.35 Accelerated perception

This map surface is, as noted above, a topological map with two holes in it. These holes operate as microcosmic *wormholes*, the name given in astronomical jargon to space-and-time tunnels that connect different universes. The holes are spatially continuous with the whole surface, much like in Klein's bottles, whose mouths are also their bottoms. The inflections of the surface cause the entering perception of objects to accelerate and move instantly into the mental dimensions. They

become bubbles that speed about from mental game table to mental table before exiting again through the same openings. The eyes create, then, a void in mental space such that visual perceptions are first accelerated towards the interior “hollow,” then sent speeding into the diverse operations that understanding must do to process perception. There follows a visual *apperception* that goes back into the exterior, already configured by understanding. This is the sense that the skull is a kind of receptacle of void, similar to that of the *Empty Shoe Box*, as Orozco wrote in his notes:

...

A DRAWING OF NOTHINGNESS. THE VOLUME OF NO. EMPTY RECEPTACLE.
LIKE A SHOE BOX.

THE GAZE AS SPACE. RECEIVING.
THE GAZE AS SPACE THAT RECEIVES.
AS RECEPTACLE.

TO SPEND TIME WITH NOTHINGNESS. TO WASTE TIME.
LINES ON WATER.
PEN AS SCALPEL.

SKULPTURE.

WITH THE DRAWING WE FLATTEN THE IMAGE THE OBJECT. VOLUME
MADE GRAPHIC.
OBJECT MADE IMAGE.¹³⁹

5 *Space and matter*

Infinitesimal surfaces: space

The nature of Orozco's space is that of a plastic substance that results from the mapping of time on a surface. This mapping corresponds to the marking of the points of accidents of object-trajectories on the plane. Time, therefore, is the mapping of the events that happen on the world. Space is the projection of that temporal mapping into infinitesimal layers, creating thereby a new dimension from time.

Hence space results from the *mental perception* of the traces left by the accidents of events. Like sub-atomic space, for example, perceived only through the traces left by the accidents between particles. This space is not an absolute substance that exists by itself—unlike Plato's, who conceived space as existing along with God before the world was created—but that depends on the mental perception of the structure of time in order to exist. This is how space results from historical and social conditions.

It is in this sense that symmetry, the line that divides and orchestrates the game between events and their perception, is a non-spatial dimension. It is a dimension because *it is there* affecting physical things, but it is non-spatial because it is a non-place in any map of time.

When perception engages symmetry directly—when it suspends objects or things right on the line—the game stops. Time ceases to be mapped out. There is no space. A spatial hole is thus produced that cuts into things, like *La DS*, or that can even start to deform the surrounding space—*Empty Shoe Box*. Focused on symmetry, with the game suspended, perception is, consequently, also frozen. It is suspended but fully aware of the surroundings. In fact, in the strangeness of that suspension perception is forced to be more aware than ever.

It is important to note, however, that for the artist space is not a *totally ideal* creation of the mind—he is not a pure Idealist. For him, rather, space is a projection of time, which is activated in turn by the sensory perception of accidents physically taking place on a surface.

On the other hand, the atomic knight automatons, in mapping the infinitesimal, fundamental game structure, constitute the elementary substance of space itself. In fact the structure of *every* map of time is fundamentally structured by the basic, four-region mechanical atoms; each map derives its macrocosmic structure from the microcosmic mapping of the sub-atomic games. Symmetry, therefore, appears con-

necting all scales. Space is an infinitum of active chessboards—with endlessly running horses—piled up.

The Atomists play incessantly according to Borges's three basic game laws: the arbitrariness of their combinations, the symmetry that rules them, the tedium of their incessant, equilibrium-longing activity. Yet with the unique three-dimensionality of knight movement Orozco has added one more trait that projects his atoms as the elementary, spatial game particles.

In this physics, space is a kind of substance whose essence hovers somewhere between the conceptual and the physical. It is produced by non-physical atoms, but it affects and is affected by sensory perception. It is a potentially infinite extension locally determined, however, by history and social significance.

Infinitesimal surfaces: matter

By convention sweet and by convention bitter, by convention hot, by convention cold, by convention colour: in reality atoms and the empty.

DEMOCRITUS, as reported by Sextus Empiricus, *Against the Mathematicians*¹⁴⁰

The Yielding Stone established a symmetrical relation between space and matter. Matter, resulting from the fabric of atomic exchange, is itself a product of the mapping of time. Regarding this map, its construction—as stated before—depends on mental perception of the spectators involved.

From this it follows that the nature of matter is also conditioned by the social and historical rules that configure the game of perception. The atomic structure of matter is, in this sense, itself a by-product of a historical map of events and social accidents. It is not surprising, therefore, that in recent years theories about the nature of matter assume the fact that what the physicists perceive is conditioned by what

they want to perceive, given that the nature of sub-atomic particles is prefigured by the very process of their observation, as ascertained by the *uncertainty principle* discussed below. It could be possible to say, then, that the picture of matter drawn by our modern-day sophists is basically the result of the type of matter that our age wants to see, or that it needs to see for its historical purposes.

It is from this realization that Orozco declares that it is not possible to work with “pure matter,” in the sense of there being an absolutely untouched ‘stuff’ with which it is possible to work without any pre-conceptions attached to it.

GO – Pure matter never existed really. Pure matter, even a rock, is not pure, nor is a tree, or grass, pavement, the metal of a bench in the park, or the plastic you are touching when you are sitting in a car... They are all social and political and historical perceptions of things.¹⁴¹

Pure matter can exist only in so far as there is a “purity” of perception, that is to say, a perception without any social or historical loads on it—an impossibility since mental perception needs memory in order to function.

However, Orozco suggests the possibility of working with a *purier* matter by using the memory of perceptions from the time when it was barely determined by history and sociality: memories of childhood encounters with materials.

In this primordial time, every human being starts to perceive things without any structure of temporal events. The newborn child’s game of perception is played on a clean slate, so that everything it receives is pure physical sensation: there is no time and therefore neither space nor matter. Slowly, we could say, the child starts to register certain marks on the surface of its perception. Physical sensations start to be mapped as accidents, events. Space is formed, and something else called matter. At this stage it is matter resulting, probably, from the mapping of sensations induced by the parental relation—a relation in itself historically determined, so that the mappings starts from a relation with

the social. Yet the first exchanges with what the newborn can later recall as things happen in the most basic game board. Matter is therefore free to jump into any part of the game, to be defined as anything not yet conceivable.

This is the reason that the artist makes constant recourse to children's objects, or to 'stuff' that as a kid one encountered in learning about the world and that made a strong impression on memory: ice-cream spoons, marbles, kites, bicycles, popsicles, plasticine:

GO – But plasticine is a very common material, don't you think?

BB – With kids, perhaps yes. Go to a Wall Street banker and ask him when he had last plasticine in his hands – it's very exotic.

GO – This is not important, because it exists in his memory.¹⁴²

Through the symmetrical confrontation between the complex, socially-induced perception of the adult with the childhood memory of materials, Orozco pushes the spectator to develop a purer understanding of matter, making him or her conscious that the 'stuff' has been collecting an enormous amount of social and historical accidents—like *The Yielding Stone*. But this work also shows that our perception, like a ball of plasticine, is still mouldable and playable, no matter how much is stuck to it.

Endless Quantum Horses

Paul Cartledge, writing about Democritus, points out that the word *kosmos*, in its original Greek etymology, “meant originally order, orderly arrangement, as applied to such mundane realities as—to take a standard Homeric example—the order of battle.”¹⁴³ Chess, as a battle of unfolding orders, is certainly a cosmic representation. Orozco's own version of chess reflects his own vision of cosmic arrangement. It is a starting order of ceaselessly moving, “endlessly running” horses in a sort of endless battle among them. It is a battle without winners, a game without check mate that goes on infinitely. As discussed before, the chess knights are

one of the closest representations of the atomic automatons that, running endlessly, move into infinite combinations, unending battle formations through which, at any one point, new substances are created. Homer knew that, after the battle for Helen, a new world was emerging: the world of Odysseus' cunning rationality.

That space and matter is produced from ideal automatons seems rather obscure, as much as imagining new worlds springing out of the void. However, certain analogies concerning the working of Orozco's atoms may be found in the most recent theories about the nature of matter and space, specifically quantum and cosmological theories. The temptation may be strong to draw a corresponding parallel between these physical theories and Orozco's work; it is important, however, to underline the strong, emphatic epistemological differences between the two perspectives. Orozco's viewing platform involves a continuous game between metaphysical, political, ethical and phenomenological event-things. Scientific theories, on the other hand, in their experimental purity leave aside all other non-scientific implications of the game platform from which they spring out.

Orozco's atomic automatons, like Plato's atomic triangles, are non-dimensional, ideal units. 'Out of their material "nothingness" matter is created. Pursuing the ultimate, indivisible particle in matter, physicists have arrived at the perception that the smallest sub-atomic "things" are a kind of probabilistic phenomenon whose material qualities are the perceived result of chance interactions and accidents among them. In 1927, the German physicist, Werner Heisenberg realized that in order to grasp the nature of the smallest particles, he had to do away with the Aristotelian, materialistic cause-and-effect principle by which something had to come out of, or be moved by, something else. Heisenberg realized that sub-atomic particles had to be, by definition, *nearly ungraspable* things whose nature was only the result of what

the observer demanded to know from it. He called this realization the uncertainty principle—the principle that we cannot be certain of what a thing really *is* at any time. This all means that, for example, it is possible to give a physical position to a particle, but then its energetic (i.e., material) load is totally ungraspable. Should the observer focus on a quantifiable energetic determination of the particle, its location will never be known. Which means that the particle is a kind of non-spatial amount of energy, or, conversely, a point without dimension, in both cases a materially indeterminate ‘stuff’ with only one certain quality. “The uncertainty principle asserts that the momentum and position of a particle cannot be simultaneously determined unambiguously. This is a fundamental (quantum) property of a particle and not just an expression of limitations of experimental techniques.”¹⁴⁴

A subsequent consequence of the uncertainty principle was the realization that the classical concepts of mass and charge had to be completely redefined. This rewriting of millennia-old concepts about matter was referred as *renormalization*,¹⁴⁵ in quantum jargon. Renormalization led to the postulation that mass—the character of materiality—of a particle is actually the accidental interplay between an uncertain, non-material particle and a “universal background field, called the Higgs field... When a particle moves through this field the field becomes locally distorted, and this distortion generates the particle’s mass.”¹⁴⁶ This is a way of saying that mass is the accidental interplay between a point-trajectory and space. The point-trajectory, as it moves through space, generates some sort of “ripple” on the spatial substance; it is our perception of such echoes of non-matter what we call mass.

Thus endlessly running horses moving through space like battle automatons can create the substantial ripples that we call matter. Thus something comes out of nothing, in the sense that matter comes out of non-matter, or that space and

things can come out of the nomadic, symmetric fields that Orozco calls atoms.

Research in the last decade has even shown that out of the total “void”—i.e., pure space devoid of atoms—there spring particles, if only for infinitesimal instants, and only to disappear into the void again: “Physicists Paul A.M. Dirac and later Richard Feynman, Julian S. Schwinger and Shinichiro Tomonaga showed that empty space was more complicated than anyone had previously imagined. Elementary particles, it turned out, can spontaneously pop out of nothingness and disappear again... Such virtual particles, as they are called, may appear as far-fetched as angels sitting on the head of a pin... Like it or not, empty space is not empty after all.”¹⁴⁷ Out of that nothingness, it is clear, different worlds can spring out, each with their own version of *Carta Blancas*.

Still, one clear difference between Orozco’s and Plato’s atoms, and the uncertain quantum particles, is that the first two conceive of the basic unit as a totally conceptual, ideal being which somehow activates space so as to produce material form. The nature of these atoms is conceivable only through the perception of thinking and imagination. Quantum particles and their mechanics, on the other hand, are still an experimentally verifiable phenomenon, dependent on what type of material properties are expected from them. These expectations, however, are usually pre-determined by the historical conditions surrounding them.

Against Plato, Orozco conceives space as a social ‘stuff’, in terms of being the “mysterious” substance that receives the trajectories and accidents of signs and events and whose residual ripples (through that kind of ether) we all agree to perceive and call *things*.

Orozco would like to freeze the social perception of space, removing its substance and with it the memory of things that it has, so as to enter the non-spatial realm of creation.

A HARMONY OF WORLDS

1 *Co-existing impossibles*

The recurrence of ideas dear to both Leibniz and Bruno, as well as Orozco's references to the Baroque, signal a type of Baroque world description in the artist's work. Gilles Deleuze, especially in *The Fold*, had already suggested a kind of baroque zeitgeist of the late twentieth century, for which he found an enlightening philosopher in Leibniz. Deleuze's interpretation of the Baroque is founded on the idea of the operational unfolding of pre-created things, as well as in the conception of an ever-changing, fluctuating world of endless unfoldings. A further examination of *The Fold* would have to probe into Deleuze's accommodation of Leibniz into the post-modern architecture of the world. Deleuze would like to see Leibniz as the master that set the pace towards deciphering infinite, diverging series, even when Leibniz himself had declared that although mathematics had developed methods for the analysis of infinite series, "the contingent or infinite truths are known with greater reason to divine knowledge, known by Him not through demonstration (which would imply a contradiction), but through an infallible vision."¹⁴⁸ Moving forward in the ground opened by Leibniz, but ignoring the caution about the inherent contradiction in trying to explain why certain infinite

series are actualised and others are not, the French philosopher would like to explain better than Leibniz why there are impossible worlds: "But why then does Leibniz declare the origin [of impossibility] unknowable? On the one hand, it is because divergence is still not understood very well in serial theory in the seventeenth century..."¹⁴⁹

Deleuze wanted to explain why there are series that are impossible among each other but that—unlike in Leibniz's world—in our world they exist simultaneously. The present world would allow the co-existence of impossible sub-worlds that cannot touch, even tangentially, each other. The game then becomes an open competition for the survival of impossibles, a game in which God has ceased to act as the chooser of the best ones. "Even God desists from being a Being who compares worlds and chooses the richest compossible. He becomes process, a process that at once affirms impossibilities and passes through them. The play of the world has changed in a unique way because now it has become the play that diverges. Beings are pushed apart, kept open through divergent series and impossible totalities that pull them outside... It is a world of captures instead of closures."¹⁵⁰

This is the same as explaining why certain existing trajectories are not tangent to the Best World, which is to explain away why there are possible Third, or Fourth and even Fifth worlds that do not touch the First World. It is also a way of demonstrating that the impossible worlds that are under the top of the pyramid are there for an understandable, natural reason, so that the process which produces the pyramidal world can be rationally perceived. Rationality thus explains away the unavoidable chain of events that has created a First and a Third World nowadays.

Nomadic science

Terrified by totalitarian symmetries "under the appearance of order," G. Deleuze and Félix Guattari sought to replace

state systems of space codification and subjugation with what they considered the opposite, natural values of spatial flow and subjective variation. Against the state machinery of uniformity, they opposed tribal nomadic substructures—flexible individuals or group of individuals that base their relations on adaptations to changes and fluctuations.¹⁵¹ These groups constitute divergent, impossible series that must continually adapt themselves to exterior intrusions.

Viewed retrospectively, it appears now that the French philosophers were merely replacing a modern, *Gesamtkunstwerk* subjugation with a postmodern, eclectic “unity in variety” type of exploitation by nomadic structures of colonization. This New World configuration is inspired by a neo-Nietzschean revaluation of the natural life impulses as the “higher” values. These are the values apparently closest to reality, but in their free natural state, according to Deleuze and Guattari, they are repressed by the systematic State mind.

As in a kind of Discovery Channel revelation of the laws of organic survival, this theory of the natural flows of non-codified subjects has only turned into an apology of the “natural” exploitation of sedentary States by non-State nomadic groups. The theory of Nomadic Science sees in the differential analysis of the accidents of series the best proof that the study of the accidents of nature is truer, closer to reality, than the axiomatic laws of official science.

Symmetrical globalization

Yet, through his work, Gabriel Orozco also shows that all perceptions of the world, natural and non-natural, are simply conditioned by the social milieu in which they appear. From this perspective, the perception of natural or organic processes appears as much a product of history as the laws of “Royal Science.”

Paradoxically, the artist uses symmetry, one of the structural elements *par excellence*, to establish the possibility of

equivalent, balanced flows between different cultural spaces, describing with it a world of complementary exchanges between all political areas. In this world, exploitation of one group by the other appears as the subversion of the rules of the games that activate cultural exchange. Without that inter-cultural symmetry, globalization becomes a mere cancellation of the other side as a player. It becomes the simple take over or capture of the other's playing area, not allowing the cultural exchange that affects either group. The Best World is the winner and keeps all the balls.

Baroque zeitgeist

Beyond that, both Deleuze and Orozco imply a type of Baroque *zeitgeist* of contemporary culture in revealing the age's belief in the *pre-existence* of a harmonious accord among all the things of the universe. For both it is an accord of fluctuating, pre-existing elements which can only be altered in order to be accommodated in the changing state of things. Left behind is the modern confidence in the possibility of inventing totally new worlds with totally new solutions based, however, in immutable, fixed laws. It is the world demonstrated by Foucault's pendulum in the *Panthéon*.

But the idea of a pre-existing accord shared by both artist and philosopher diverges radically in explaining the character of that harmony of things. For post-modern, post-industrial nomadic capitalism, it is the pre-existing harmony that inevitably led to the emergence of a Best World of commodity blissfulness, where Second and Third Worlds are there only to prove that other possible worlds can only be under the top chamber. Yet the implication is also that they have to exist in order that the First World stay at the top, in a kind of inevitable hierarchy which Deleuze would like to explain away rationally through twentieth century serial theory and natural processes of flow. On the other hand, Gabriel Orozco unveils the harmony between all the different contemporary

worlds through the infinite line of symmetry that structures the social and historical games of signification at all levels. The symmetry that allows the exchange of signs and symbols between all perceivers of reality makes of the First and Third Worlds the players, in turn, of a wider game of significance. Symmetry lays flat any pre-assumed hierarchy between players. In this sense the opposition between the different contemporary worlds is simply one more instance of the continuous, infinite game that exists through the infinity of time, and neither First nor Third Worlds are any better than the other—they are just two players activating the historical space between them.

No Game is the Best of All

Late capitalism has emphasized the construction of a Leibnizian pyramid of worlds, where Third, Fourth or Fifth Worlds constitute impossible yet existing places that demonstrate the realities of taking the wrong bifurcating paths. These other worlds are not only possibilities, as in Leibniz, but, rather, actualities of what the First World could have been had it not made the Best decisions. They are impossible worlds because they cannot exist (even in part) within the Best World. There is only one world that can be atop the pyramid, close to God.

Against this universal construction, Gabriel Orozco unveils a non-hierarchical universe of infinite, possible worlds that result from the chance combination of atomic automatons. In the infinity of time, these possible universes exist in reality, so that the infinity of worlds is an actual infinity, even at the present. First, Third, Fifth, Nth-worlds are only equivalent, *co-existing impossibles* that allow different types of games, themselves the result of a wider game.

Orozco plays along with the capitalist construction of the market as a continuous sport, yet goes against the concept that only one Best team or player wins and moves up the

pyramid into the First World. Orozco sees that the best players are those who understand the continuous intrusion of the infinite into every playing table. It is this intrusion of the non-dimensional that makes all worlds equivalent floors in an infinite casino.

In *La Cena de le ceneri* of 1584, Giordano Bruno had denounced colonization as the willful destruction of so many of the infinite worlds that were created as a direct mirror of God's infinity, subverting the original separation of the equivalent impossibles: "the Tifis have found a manner of perturbing other people's peace, of violating each region's own genius, of confounding what provident nature had separated, of duplicating defects through commerce and of adding the vices of a nation to those of another..."¹⁵² Gabriel Orozco is in this sense closer to Bruno than to Leibniz, closer in fact to Bruno's harmony of infinite worlds with infinite other beings participating all in the one cosmic, atomist game.

It would seem that the Leibnizian plea for a world of universal culture had, at the turn of the millennium, come to reality through globalization. Yet that at a time like this a work such as that of Orozco questions the inevitability of one best world (to which all other worlds aspire), signals that the 16th century European debate about the possibility of there existing other worlds equally close to God is far from being solved. Although the discussion opened up with the discovery of the Caribbean peoples, the debate flared out through the discovery of those American civilizations that seemed at least as complex as the European ones. Through some of his works, Orozco seems to touch on the underlying lines that survive from that debate, opening references on the pre-hispanic cultures not in a nationalistic, nostalgic way, but in their political character as worlds excluded from history.

2 *Symmetry: ontological invariance*

The symmetry of Orozco's works

The realization that the universal structure has its fundament in symmetry, an absolutely conceptual line without dimension, is the starting point for Orozco's perception of the universe as a continuous string of games *ad infinitum*. Richard Feynman, the physicist, pointed out that symmetry as such is a rather complex concept difficultly explained as, simply, a mirror line. The father of "western" architectural theory, the Roman Vitruvius, for example, had himself a hard time explaining the concept with all the implications that Greek philosophers had given it, and of which we have little traces left.¹⁵³

The modern, already "classical" physics definition of symmetry was already discussed in previous pages. In formulating a more current, up-dated definition, Carles I Calles starts with G. W. Leibniz's "principle of the identity of the indiscernibles, which states that if it is not possible to establish a difference between two objects, they are identical. Since it is not possible to distinguish between two identical objects, an interchange in their positions has no effect in the physical state of the two objects, or of the system they belong to. This interchange is an example of what a mathematician calls *symmetry*.

When a system remains unchanged after some operation is performed on it (such as the exchange of two identical particles) we say the system is *invariant* under that particular operation."¹⁵⁴

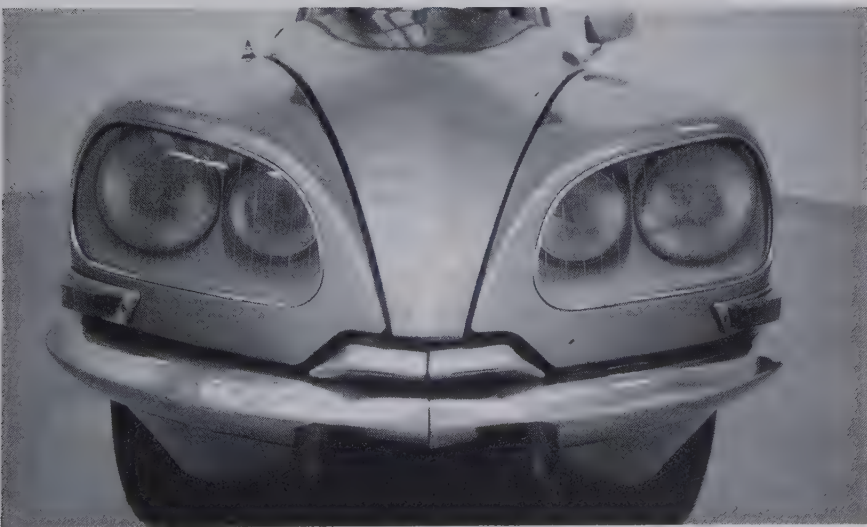
In this definition the symmetrical axis remains implied as the line that divides the before and the after of the operation. From this perspective, Orozco's symmetry operations, like that which produced *La DS*, are displacements of things *onto* the axis of symmetry, so that there is not an *after* in the operation. However, the object, like in all symmetry opera-

tions, remains unchanged, or, as physicist would say, it remains *invariant*.

Regarding *La DS* this invariance may seem questionable, after all the work put by Gabriel Orozco into cutting the Citroën. But the fact is that *La DS* is still a standard Citroën, only with a reflecting plane going through it. The artist has not created a new car, but has altered the way we look at the classic French automobile. The Citroën remains unchanged, invariant.

With this fact in mind, it is possible to write out a definition of symmetry as operated by Gabriel Orozco: symmetry is an operation by which a thing is made to go across or into a non-dimensional axis and remain ontologically invariant, even if there is an effect in the physical state of the object.

The operation is fairly clear in *La DS*, which is made to go into the line of symmetry and remain there. The Citroën, although physically altered, remains nonetheless the same object. This is the type of symmetry called by physicists *local symmetry*, as it is applied to an isolated, single point-object.



Ill. 36 *La DS*, 1993. Detail

Global symmetries, on the other hand, are operations applied to all the members of a system so that in the result the system remains invariant, working the same way as before; it is like changing the sign of the electrical charge of an entire set (of even numbers) of particles in a field: after doing that operation the field behaves in exactly the same way as before.

Local symmetries include those in which an object is rotated around an axis that goes through it and afterwards remain invariant. It is possible, for example, to rotate a snowflake through 60°, and it will appear exactly the same.

The fundamental question for Orozco, however, is not that through local symmetry an object (a) “looks” the same afterwards, but that (a) continues to be perceived as the very same object from before; that its perception as being an (a) remains, even if physically altered.

An object that is suspended over the line of symmetry, physically altered by it but ontologically identical, becomes an object that can travel through the line of symmetry into other play areas, remaining always invariant. This invariability, even when located on different game (historical) surfaces, is one of the most intriguing properties in the work of Gabriel Orozco.

Every object in my work is altered, displaced and suspended. But there is also a rotation of the object in itself, an operation that leaves a high degree of invariability in the physical and meaningful qualities of the original object. This degree of symmetric invariability makes the external, “orbital” operation of displacement complementary to the internal operation of rotation of the object in itself – in its axis of symmetry and gravitation. In this sense, the final result of this operation in my work is an invariant of the original, found object.¹⁵⁵

Postmodern Futurism

The process by which social space-construction and symbol-weaving enters into a momentary suspension has been likened by the artist to a symmetry operation with physical/psychological results. Through this operation, any object—a Citröen, for example—cut by the symmetry line, frozen in perceptual understanding, cannot be further affected by the

historical exchange of meanings; it is put as it were inside a perceptual bubble. This bubble can then float around and away from its original, historically-determined game surface, and bounce onto other game tables. It behaves then as an object of suspended history that intrudes into other histories. It becomes a new kind of play ball, one that can be played at different games, having acquired an accelerated perceptual speed and identity-resilience unlike any other normal object.

“Regarding *La DS*, I am not erasing its history or its original social significance entirely. It is a moment where I suspend its meaning. The Citröen had a linear history – in fact it was *already* history when I took to work on it – but then I generate a kind of bubble for it. The bubble suspends the Citröen’s history and transports it into other possible histories – the history of motion in modern sculpture or the history of sculptural synthesis in pre-Hispanic Aztec art, for example. But this bubble is also a physical state, where the Citröen is initially suspended but then accelerated, so fast that it is even deformed. It is a kind of mental, perceptual speed that nonetheless has physical results.”¹⁵⁶

All this operation has a very determined Futurist overtone, but it is a kind of Post-modern Futurism (allow me the oxymoron) which exalts both perceptual and physical speed along with an accelerated trans-historical and trans-cultural translation of objects. Similarly accelerated into trans-cultural migration is the skull of *Black Kites*. The skull (about which Benjamin Buchloh remarked to Orozco that “as a Mexican artist you cannot get away from [it] as being as integral to your iconography as the apple is to French iconography”),¹⁵⁷ placed on a bubble by the artist, has been dislocated from the body of Mexican culture and sent, bouncing around, into the play area of the history of contemporary art, or to that of the history of post-modern iconography. Thus Orozco’s sculptures integrate a kind of ontologically kinetic work, related to Constructivist sculptures yet moving beyond mere mechanical metaphors:

“My sculptures are not so much about physical speed as about perceptual speed. But perception always in relation to physical things. My work starts with perception but has physical results. Kinetic sculpture tried to express only physical movement through optic and mechanical phenomena. It never moved into the fourth or the fifth dimensions of perception.”¹⁵⁸

Orozco's sculpture is closer in fact to Duchamp's mechanisms for stripping bare the bride of the *Large Glass*. Duchamp similarly sought mechanisms that could affect perception to move into non-dimensional, ideal dimensions, yet he started *from* things and through them sought to affect perception. Orozco, on the other hand, first accelerates perception and then shows its physical results on things. It is an inverse process to that of Duchamp, a process that shows paradoxical objects that return from operations in mentally perceived dimensions.

This kind of perceptual dynamism has its paradigmatic climax with *Empty Shoe Box*. Left to lie around the floor and go almost unnoticed at art places, the box is a hollow in space; it has a function similar to that of the water tank in *Ping-Pond Table*, or the cut line at *La DS*. All sign perceptions fall into it and into a frozen suspension; it is a kind of perceptual black hole that accelerates thinking as one tries to approach it. The entire perception is then momentarily paralyzed, but out of that suspension it emerges with a new mental speed, with satori.

3 *The humour of games*

Empty hammocks

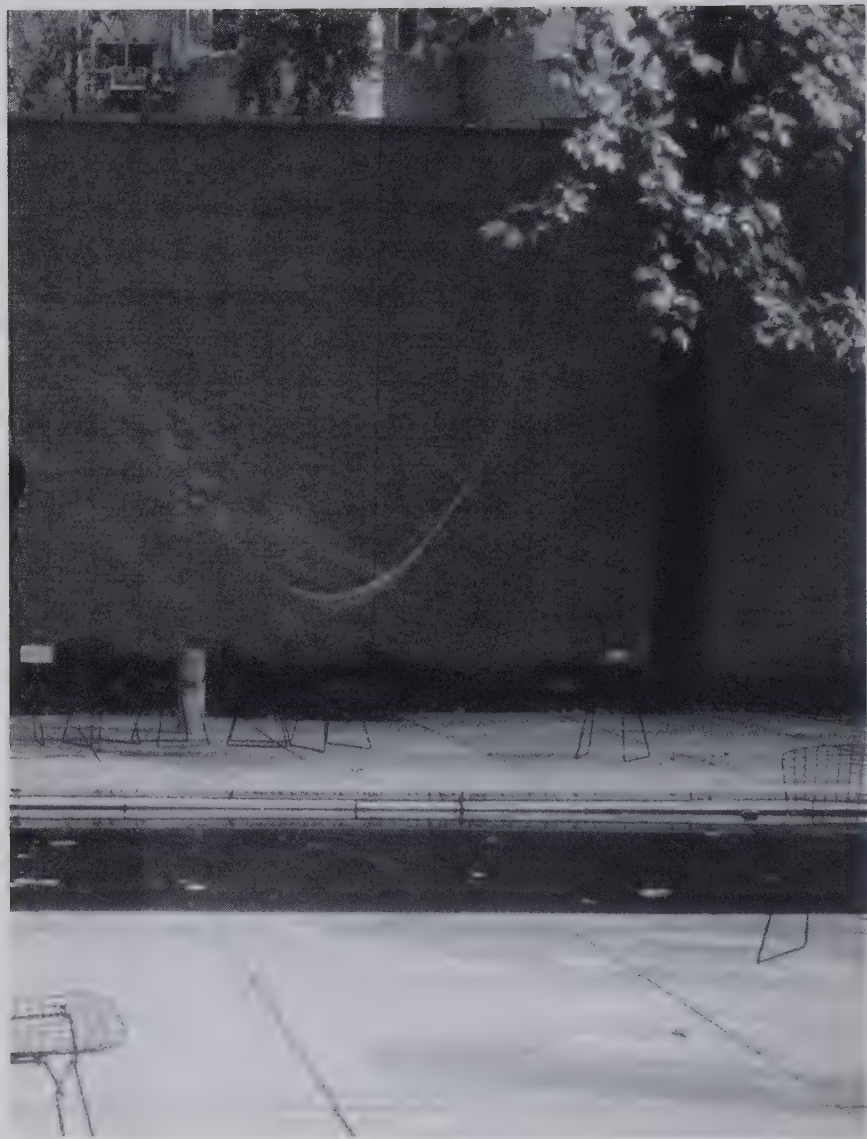
It is through the non-dimensional line of symmetry, and the non-spatial emptiness of the void, that Gabriel Orozco finds the possibility of suspending the historical and social continuity of the present world. The social weaving of signs can suffer a rupture by the "activation" or engagement of the symmetry line, as is done at *Oval Billiard Table*, or at *La DS*. The historical structuring of space can be altered through the absorption of areas in the map of the time frame, as done by the *Empty Shoe Box*, or by *Pinched Ball*. These operations, on the other hand, produce the acceleration of perception in two different moments: before its entrance into momentary suspension, and after its emergence from it into renewal.

As it accelerates towards the void, perception physically affects the objects it encounters, in turn accelerating them and pushing them into perceptual suspension. It is what the artist calls a perceptual bubble, which encapsulates the suspended object and allows it to speed from historical space to historical space, as the skull of *Black Kites* does; or even from world to world, as in the case of the cans of Carta Blanca.

Through his concept of the void—non-dimensional, non-spatial—Orozco finds the hope of re-defining a world that has apparently cancelled out all other possible worlds. The map of social exchange, and the fabric of historical space, can be re-constituted through the very elements that allow them to exist in the first place, the void and symmetry. Perception, by means of its acceleration and experience through the void, and in its confrontation with accelerated, trans-historical objects that have undergone symmetry operations, operates with a new awareness of the universe in which it plays. It can then re-define the structure of its own, interior map of apperceptions, thereby investing or uncovering new meanings into what it perceives—even moving things and itself from world to world into whatever game it finds more compelling.

Even if certain contemporary scientific theories, such as quantum theory, engage the discussion about the nature of emptiness and symmetry, Orozco's conceptual non-space moves beyond an experimental emptiness into an ontological void in which history and sociality are emptied out and the void is left like the fabric of an empty hammock: the empty cradle that awaits for totally new, fresh spectators of new worlds. In many countries the hammock is the favourite rocking cradle for new-born babies.

Gabriel Orozco, in his own anti-high-brow humorousness, reveals that there is an infinity of worlds in which the game of life can be played with the same intensity.



Ill. 37 *Hammock between Two Skyscrapers*, 1993

NOTES

1. "... Nadie, al juzgar esa novela, se niega a descubrir que es un juego; es lícito recordar que el autor no la consideró nunca otra cosa. *Yo reivindico para esa obra*, le oí decir, *los rasgos esenciales de todo juego: la simetría, las leyes arbitrarias, el tedio*." In "Examen de la obra de Herbert Quain," from the collection "*El Jardín de Senderos que se Bifurcan*." Jorge Luis Borges, *Ficciones*. El Libro de Bolsillo, Alianza Editorial, Madrid, 1991, p. 83. Translation from the Spanish by the author.
2. For example, regarding *Photogravity*: "It is almost like a game. It seems like a stage production for children" ("Gabriel Orozco: On Effective Works and Other Issues." Interview with Gabriel Orozco by Alfredo Consalvo, published in *Movimiento Actual*, No. 122, April 2001, Monterrey, Nuevo León, p. 7). Or when he says of *Extension of Reflection* (1992) that he developed the idea when "... there were all these cycling guys going really fast and I was there with my old bicycle, and they were fast and avoiding all the puddles and I was thinking that they didn't need to avoid the puddles. They are accidents. It is the residue of something." Quoted by Molly Nesbit in her essay "The Tempest", in the Catalogue *Gabriel Orozco*, published by The Museum of Contemporary Art, Los Angeles, 2000, p. 137.
3. "Al destino le agradan las repeticiones, las variantes, las simetrías." Jorge Luis Borges, "La Trama." *El Hacedor*. Alianza Editorial, 1986, Madrid, page 39. Translation from the Spanish by the author.
4. The sketch was drawn-up by Gabriel Orozco to explain his "moves" while driving his own Schwalbe in the streets of Berlin during *Until You find another Yellow Schwalbe*. In an interview held with the author in Paris, August of 2003. The diagram was developed from the sketch with the artist's consent.
5. Gabriel Orozco, in an interview held with the author in Paris, August of 2003.
6. Benjamin Buchloh points out the strong discharges of memory that accompany the operation of *Until You Find Another Yellow Schwalbe*: "...Orozco deals with the peculiarly charged remnant of a recently vanished socialist state... Resonant with the complex political implications of territory, and given the city of Berlin during the immediate aftermath of German reunification, the work's subtle but insistent mnemonic dimension seems to ask for more than the mere retroactive contemplation of possibilities in a socialist object of consumption." Benjamin Buchloh in his essay "Gabriel Orozco: The Sculpture of Everyday Life," in the Catalogue *Gabriel Orozco*, pages 97-98.
7. "Gabriel Orozco: On Effective Works and Other Issues." *Movimiento Actual*, No. 122, p. 12.
8. "Hablando del obispo Berkeley ... me acuerdo de que escribí que el sabor de la manzana no está en la manzana misma—la manzana no posee sabor en sí misma—ni en la boca del que se la come. Exige un contacto entre ambas." From the lecture "El Enigma de la Poesía," one of six lectures given at Harvard during the 1967-1968 Norton Lectures cycle. Jorge Luis Borges, *Arte Poética, Seis Conferencias*. Trans. by Justo Navarro. Editorial Crítica, Barcelona, 2001, p. 17. Translation from the Spanish edition by the author.
9. "Gabriel Orozco: On Effective Works and Other Issues." *Movimiento Actual*, No. 122, p. 6.
10. Statement attributed to G. Orozco in *postmedia*:
<http://www.chefingredients.com/postUK/98/orozco.html>. Visited September 8th, 2001. This page includes a photograph of Orozco's *Ping-Pond*.
11. Quoted by Molly Nesbitt in her essay "The Tempest," p. 141 (and note 15, p. 168: "The English translation of this page is given in Gabriel Orozco *Photogravity* (Philadelphia, Philadelphia Museum of Art, 1999), 148." *Gabriel Orozco*, The Museum of Contemporary Art, Los Angeles, 2000.
12. Here it is interesting to note how Borges also defines poetry as the connection of words

to a timeless instant: "This is why, in speaking of poetry, we could say that poetry does not do what Stevenson thought it did: poetry does not pretend to exchange a handful of logical coins for magic. Rather, it returns language to its original source." (Borges, *Arte Poética*, page 100). The original source is that time when there was no difference between sign and object, or concept and reality. They were one. It was a time when the Ping-Pong game did not exist, at least not as it is now structured: "I have proposed some ideas to address this problem of thought and meaning.... We spoke before how, in music, it was impossible to separate sound, form and content, because they are, in reality, one and the same. And we have reason to suspect that, to a certain degree, this applies to poetry" (*Ibid.*, page 102).

13. "Here the obsolescence and historically retarded technology suddenly appear as exemplary cases of an approach that socialist culture had once claimed among its central concerns: to construct an object whose priority would become its universal accessibility as much as its primary focus on use value." Benjamin Buchloh, "Gabriel Orozco: The Sculpture of Everyday Life," in the Catalogue *Gabriel Orozco*, p. 97.

14. "Gabriel Orozco: On Effective Works and Other Issues." *Movimiento Actual*, No. 122, p. 13.

15. Here a definition for metaphor: the return of the ball on the part of reality, demonstrating the symmetrical relationship between, say, death and sleep. Poetry can be conceived as the continuous play of meanings in transit between the poet and reality. At the same time, we are now able to discern the mechanism of creativity in this idea: the ability to stop the game when the object crosses one of the lines of symmetry, allowing the object to be altered by the infinite, before returning it to the world. Nothing new is created; it is simply transformed by contact with the eternal, with the poetic.

Transformation (suspension over the line of symmetry) can occur in any one of the surfaces of the mental games—between perception and memory (*La DS*), between qualification and idea, and so on.

16. "Gabriel Orozco: On Effective Works and Other Issues." *Movimiento Actual*, No. 122, p. 10.

17. Benjamin Buchloh, in his essay "Gabriel Orozco: The Sculpture of Everyday Life," pages 88 and 91. However, for Buchloh, Orozco uses the mobility and historical charge of mechanical objects to address the futurist theme of a glamorous mobility, exposing it for what it is: a reckless and trivial project in view of the ecological crisis and disintegration of values during the late twentieth century. "The proclamation of a purely technological utopia of accelerated mobility—pronounced as a future resource of unlimited glamour and power, and made by the Futurist avant-gardes and Dadaists like Francis Picabia at the beginning of the century—returns in Orozco's work at the end of the century as a melancholic contemplation of the condition of waste and ecological destruction, futility and loss, and the exhaustion of resources by violently enforced, planned obsolescence" (*Ibid.*, pages 88-91).

18. "La poesía no es algo extraño: está acechando, como veremos, a la vuelta de la esquina. Puede surgir ante nosotros en cualquier momento." Borges, *Arte Poética*, p. 17. Translation from the Spanish by the author.

19. In a conversation between Gabriel Orozco and the author, held in Mexico City on March 11, 2003.

20. "Gabriel Orozco: On Effective Works and Other Issues." *Movimiento Actual*, No. 122, p. 11.

21. *Ibid.*, page 11.

22. Prabhakar Gondhalekar, *The Grip of Gravity*. Cambridge, Cambridge University Press, UK, 2001, p. 234.

23. "Foucault Pendulum." *Encyclopaedia Britannica*. 2003. Encyclopaedia Britannica Online. 8 May 2003 <http://www.search.eb.com/eb/article?eu=35652>.

24. Joseph Rykwert quotes Perrault in his book *The First Moderns*. The author has had to

use the Spanish translation published as *Los Primeros Modernos. Los Arquitectos del Siglo XVIII*. Editorial Gustavo Gili, S.A., Barcelona, 1980. The explanation given by Perrault is quoted by Rykwert at the beginning of the second chapter: "... no se pueden tomar las proporciones en la arquitectura para agradar la vista por razones desconocidas (para el observador) ni ellas ejercen un efecto por sí mismas como las armonías musicales afectan al oído, con independencia de la ignorancia del oyente sobre las causas de la concordancia" (p.29 of the Spanish translation).

25. Information provided by Gabriel Orozco on a telephone interview with the author, June 29th, 2003.

26. "Puget was the only 17th-Century French sculptor whose work was almost entirely baroque; all others were classical to a greater or lesser degree." Michael Kitson, *The Age of the Baroque*. London, Paul Hamlyn, 1966, P. 45.

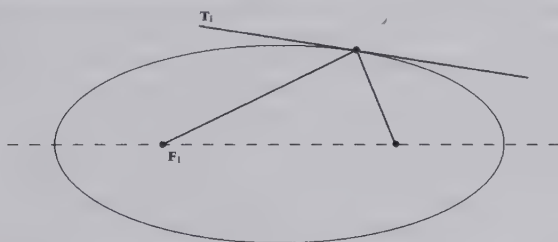
27. Christian Norberg-Schultz, *Arquitectura Barroca*. Aguilar, S.A., Madrid, 1989, p. 67 : "La elipse longitudinal es una de las formas barrocas fundamentales, porque funde movimiento y concentración, linealidad e irradiación. Su carácter claro, pero irracional era apropiado para realizar los propósitos expresivos de la Iglesia Romana." (English translation by the author).

28. Prabhakar Gondhalekar, *The Grip of Gravity*, p. 49.

29. In the 1932 book *Geometry and the Imagination*, D. Hilbert and S. Cohn Vossen give the proof for the case of two lines that connect the two foci of an ellipse while meeting at the point of a tangent to it:

"In analogy to the fact that any tangent to a circle is perpendicular to the radius at the point of contact, every tangent to an ellipse forms equal angles with the focal radii at the point of contact. In the notation of Figure 2 [below] this statement reads as follows: $\angle F_1BT_1 = \angle F_2BT_2$. To prove this..." and the proof follows.

In connection with the bouncing off of a particle in angles related to the tangent line, the same authors point out that "This property of the tangent to an ellipse admits of an application to optics to which the terms focus and focal radius owe their origin: if a source of light is located at one of the foci of a mirror having the form of an ellipse, the reflected light will converge at the other focus."



D. Hilbert and S. Cohn Vossen, *Geometry and the Imagination*. Chelsea Publishing Company, New York, 1952. pp. 2-3.

Of course this proof applies only to the case of a billiard ball hit from one of the foci and bouncing into the other focus. Yet it shows that any line hitting the table edge will bounce off at an angle related to the tangent at that point, even if that relation must yet be mathematically determined for every other point.

30. Gottfried Wilhelm Leibniz, "En Torno a la Libertad y la Necesidad", en *Escritos en Torno a la Libertad, el Azar y el Destino*. Selección de Concha Roldán. Clasicos del

Pensamiento, Editorial Tecnos, S.A. Madrid, 1990, p. 6-7. "Toda existencia, exceptuándose únicamente la de Dios, es contingente. Y la causa de que cierta cosa contingente exista en lugar de otra no se deduce sin más de su mera definición, sino de la comparación con otras cosas; pues, habiendo como hay infinitos posibles que, sin embargo, no existen, no se debe buscar la razón de que existan éstos en vez de aquellos a partir de su definición... sino a partir de un principio extrínseco, cual el de ser más perfectos que los demás."

31. *Ibid*, p. 12: "Si el pentágono existiera, ello significaría que sería más perfecto que otras figuras; pero no lo es. Luego no existe. Sin embargo, de aquí no se deduce que sea imposible su existencia. Cabe aducir entonces la posibilidad de que exista algo imperfecto en lugar de lo más perfecto, y se forja esta respuesta para ello: 'Es imposible que exista aquello cuya existencia no es querida por Dios.'" (English translation by author).

32. Gottfried Wilhelm Leibniz, "Del destino (1695)", en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 13: "Pues el destino consiste en que todo está mutuamente entrelazado como en una cadena, y es tan infalible lo que ocurrirá, antes de que ocurra, como es infalible lo que ha ocurrido, una vez que ha ocurrido". (Translation by author).

33. This is what Leibniz calls a series of *contingent truth*, whose "analysis goes on infinitely, with God as the only One capable of seeing not so much the end of the analysis—which does not exist—but rather the connection between the terms or the inclusion of the predicate in the subject, for he can see everything that is contained in the series... [which] proceeds, in part, from his understanding, and in part, from his will, expressing in its way His infinite perfection and the harmony among all the series of things." Gottfried Wilhelm Leibniz, "Sobre la libertad, la contingencia, y la providencia (1689)", en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 102. "... el análisis se prolonga hasta el infinito, pudiendo únicamente Dios ver no tanto el fin del análisis—que no existe—sino más bien la conexión que se da entre los términos o la inclusión del predicado en el sujeto, porque él mismo ve lo que está contenido en la serie; por mejor decir, este verdad misma procede, en parte, de su entendimiento y, en parte, de su voluntad, y expresa a su manera la perfección infinita de éste y la armonía de toda la serie de las cosas." (English translation by author).

34 This series was developed by Leibniz in 1672. It is discussed by the Javier de Lorenzo in his Preliminary Study to Leibniz's *Nova methodus...*, in Gottfried Wilhelm Leibniz, *Análisis Infinitesimal*, traducción Teresa Martín de Santos, Madrid, Editorial Tecnos S.A., 1987, p. XXIX.

35. En "Un nuevo método para los máximos y los mínimos, así como para las tangentes, que no se detiene ante las cantidades fraccionarias o irracionales, y es un singular género de cálculo para estos problemas." Gottfried Wilhelm Leibniz, *Análisis Infinitesimal*, traducción Teresa Martín de Santos, Estudio preliminar Javier de Lorenzo. Madrid, Editorial Tecnos S.A., 1987, p. 9: "En esta situación se consigue, para encontrar la tangente, trazar la recta que una dos puntos de una curva que estén a una distancia infinitamente pequeña o el lado prolongado de un polígono de infinitos ángulos, que para nosotros equivale a la curva." (Translation by author).

36. "The irrational number implies the descent of a circular arc on the straight line of rational points, and exposes the latter as a false infinity, a simple undefined that includes an infinity of lacunae... (This arc) resembles a branch of inflection, an element of the labyrinth, that from an irrational number, at the meeting of the curved and straight lines, produces a point-fold". Deleuze, *The Fold*, p. 17-18.

37. As he claimed in the very title of his mathematical essay *New Method for the Maximums and Minimums, as well as Tangents, which is not restrained by Fractional or Irrational Quantities, and it is a Singular Type of Calculus for these Problems*. The complete, original title of the Latin

manuscript is: *Nova methodus pro maximis et minimis, itemque tangentibus, quae nec fractas nec irrationales quantitates moratur, et singulare pro illis calculi genus*, per G.G.L. It appeared in 1684.

38. Gottfried Wilhelm Leibniz, "En Torno a la Libertad y la Necesidad", en *Escritos en Torno a la Libertad, el Azar y el Destino*, p.11. See note 41 below.

39. "Because it is not convincing—not even possible—that all the fiction in novels end up becoming true stories having place in some world, the reasoning must prevail—from this and many other reasons—that the world or the universe could be configured in infinite ways and that God has chosen the best one of them." Gottfried Wilhelm Leibniz, "Conversación acerca de la libertad y el destino", en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 24: "Pero, como no resulta convincente—ni siquiera posible—que todas las ficciones contenidas en las novelas acaben por convertirse en historias verídicas y tengan lugar en algún mundo, debe prevalecer el parecer—tanto por ésa como por muchas otras razones—de que el mundo o el universo podría estar configurado de infinitas maneras y que Dios ha escogido la mejor de entre ellas". (Translation by author).

40. "This is perfectly shown by the example of the imaginary roots that appear in algebra, since (-1) involves a notion even when it cannot be proved—for, should someone try to prove it on a circumference, he will discover that the required straight line is not tangent to it. There is, however, an enormous difference between those questions which are unsolvable by virtue of the imaginary roots, and those which are also unsolvable because they are absurd, like it would be to look for a number whose square power is nine and the addition of five to the number gives the same result; such number is a contradiction because it would have to be both three and four simultaneously." Gottfried Wilhelm Leibniz, "En Torno a la Libertad y la Necesidad", en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 10-11. "Esto queda perfectamente ilustrado con el ejemplo de las raíces imaginarias del álgebra, ya que (-1) envuelve una noción aún cuando no pueda ser mostrada—pues, si alguien pretende mostrarla en una circunferencia, descubrirá que la recta requerida no es tangente a la misma". (Translation by author).

41. Gottfried Wilhelm Leibniz, "Del Destino", en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 14-15.

"Cuando, por ejemplo, una esfera choca con otra en el aire y se conocen sus dimensiones y su trayectoria y curso antes de la colisión, se puede predecir y calcular cómo rebotarán una contra la otra y qué curso tomarán después del choque. Lo cual tiene reglas muy hermosas, que también se cumplen si uno considera cualquier número de esferas, u otras figuras que no sean esferas.

De esto se desprende entonces que todo acaece matemáticamente, esto es, infaliblemente, en todo el ancho mundo, de suerte que, si alguien pudiese tener una percepción suficiente de las partes inferiores de las cosas y tuviese bastante memoria y entendimiento para captar todas las circunstancias y tenerlas en cuenta, sería un profeta y vería lo futuro en lo presente, como en un espejo... así cabe decir que el mundo futuro entero está contenido y perfectamente preformado en el mundo presente, por cuanto ningún accidente puede sobrevenirle desde fuera, ya que no hay nada fuera de él." (Translation by author).

42. Carlos I Calle, *Superstrings and other things*. IoP, Institute of Physics Publishing, Bristol and Philadelphia, 2001, p. 571.

43. "In fact, in 1967 physicists Sidney Coleman and Jeffrey Mandula were able to prove that no other symmetries associated with space, time, or motion could be combined with those just discussed and result in a theory bearing any resemblance to our world." Brian Greene, *The Elegant Universe*. London, Vintage Books, 2000, p. 170.

44. Jorge Luis Borges, "Pierre Menard, autor del Quijote," from the collection *El Jardín de*

Senderos que se Bifurcan, in *Ficciones*. Biblioteca Borges, Alianza Editorial S. A., Madrid, 2000, p. 52-53. "Es una revelación cotejar el Don Quijote de Menard con el de Cervantes. Éste, por ejemplo, escribió (Don Quijote, primera parte, noveno capítulo): (...) *la verdad, cuya madre es la historia, émula del tiempo, depósito de las acciones, testigo de lo pasado, ejemplo y aviso de lo presente, advertencia de lo por venir*. Redactada en el siglo diecisiete, redactada por el "ingenio lego" Cervantes, esa enumeración es un mero elogio retórico de la historia. Menard, en cambio, escribe: (...) *la verdad, cuya madre es la historia, émula del tiempo, depósito de las acciones, testigo de lo pasado, ejemplo y aviso de lo presente, advertencia de lo por venir*. La historia, madre de la verdad; la idea es asombrosa. Menard, contemporáneo de William James, no define la historia como una indagación de la realidad sino como su origen. La verdad histórica, para él, no es lo que sucedió; es lo que juzgamos que sucedió". Translation from the Spanish original by the author.

45. Brian Greene, *The Elegant Universe*. London, note 4, Chapter 7, p. 399.

46. "Instead, detailed theoretical analysis showed that if the universe incorporates supersymmetry, then every known particle must have an as-yet-undiscovered superpartner particle, whose spin is half a unit less than its known counterpart. For instance, there should be a spin-0 partner of an electron; this hypothetical particle has been named the *selectron* (a contraction of supersymmetry and electron). The same should be true for other matter particles, with, for example, the hypothetical spin-0 superpartners of neutrinos and quarks being called *sneutrinos* and *squarks*. Similarly, the force particles should have spin-1/2 superpartners: for photons there should be *photinos*, for the gluons there should be *gluinors*, for the W and Z bosons there should be *winos and zinos*." *Ibid.*, p. 174.

47. In "Examen de la obra de Herbert Quain," from the collection *El Jardín de Senderos que se Bifurcan*. Jorge Luis Borges, *Ficciones*. El Libro de Bolsillo, Alianza Editorial, Madrid, 1991; note 1, p. 83: "Un interlocutor del *Político*, de Platón, ya había descrito una regresión parecida: la de los Hijos de la Tierra o Autóctonos que, sometidos al influjo de una rotación inversa del cosmos, pasaron de la vejez a la madurez, de la madurez a la niñez, de la niñez a la desaparición y la nada." Translation from the Spanish by the author.

48. Richard P. Feynman, *The Character of Physical Law*. Introduction by Paul Davis. Penguin Books Ltd, London, 1992, p. 109.

49. It is called the EPR paper because it includes the initials of its three authors: A. Einstein, B. Podolsky, and N. Rosen. The paper appeared in the May 15, 1935 issue of *Physical Review*. See Barry Parker, *Quantum Legacy*. Prometheus Books, New York, 2002, pages 134 and following.

50. For a brief description of the experiment, see, for example, "The double-slit experiment," in Barry Parker, *Quantum Legacy*. Prometheus Books, Amherst, New York, 2002, pp. 131-133. "Did it somehow go over and check the second slit? But this creates a problem. According to the uncertainty principle, if we measure the position of a particle, we disturb it. It could be heading for one of the slits, and after we measure it, it could go through the other slit because of the disturbance. So we out-tricked ourselves; we're still not certain what happened" (p. 133).

51. *Ibid.*, p. 135.

52. Prabhakar Gondhalekar, *The Grip of Gravity*, p. 339.

53. Gilles Deleuze. *The Fold. Leibniz and the Baroque*, p. 61.

54. See the exhibition catalogue, *Empty Club*, Artangel. © 1998 Gabriel Orozco, Artangel, and the authors. Quote taken from the essay by James Lingwood, "Circulation System," p. 8-9.

55. *Empty Club*, Artangel, 1998. In the essay by Jean Fisher, "The Play of the World," p.16.

56. Interestingly enough, Leibniz himself was skeptical, one hundred years before

Foucault, about the possibility of determining with pendulum-precision the movement of the bodies of the universe: he thought that even if the pendulum is mathematically precise, the movement of the earth and the planets would show such slight, chance variations that it would make ultra-precise measurements futile. Time has proven his assessment quite on the mark. “Pero en la medida de los péndulos todavía existen algunas imperfecciones, pues hay que limitarse a algunos países, ya que los péndulos, para batir en el mismo tiempo, necesitan una latitud menor. Y hay que suponer además la constancia de la medida real fundamental, es decir, la duración de un día o de una revolución de la tierra alrededor de su eje, e incluso de la causa que provoca la gravedad, por no mencionar otras circunstancias”. G. W. Leibniz, “Sobre los modos simples y, en primer lugar, los del espacio”. *Nuevos Ensayos Sobre el Entendimiento Humano*, J. Echevarría Ezponda, editor. El Libro de Bolsillo, Alianza Editorial, Madrid, 1992, pp. 162-163.

57. The figure was developed from illustrations in the article cited in Note 58.

58. Dennis Overbye, “Universe as a Doughnut: New Data, New Debate.” *The New York Times*, March 11, 2003. Also available at <http://www.nytimes.com/2003/03/11/science/space/11COSM.html?8isc=&pagewanted=pr...>

59. Gilles Deleuze. *The Fold. Leibniz and the Baroque*, p. 4.

60. “Placed on the opaque canvas, these folds, cords, or springs represent an innate form of knowledge, but when solicited by matter they move into action. Matter triggers ‘vibrations or oscillations’ at the lower extremity of the cords, through the intermediary of ‘some little openings’ that exist on the lower level.” *Ibid.*, p. 4.

61. *Ibid.*, p. 4.

62. G. W. Leibniz, *Monadologia*, § 7. The author has translated from the sixth Spanish edition published by Aguilar Argentina, S. A., Buenos Aires, 1975, p. 27.

63. “Benjamin Buchloh interviews Gabriel Orozco in New York.” In *Clinton is Innocent*, Musée d’Art Moderne de la Ville de Paris (ARC), p. 87.

64. Francesco Bonami, “Sudden Death—Roughs, Fairways and the Game of Awareness.” In *Clinton is Innocent*, p. 15.

65. “Benjamin Buchloh interviews Gabriel Orozco in New York.” In *Clinton is Innocent*, p. 55.

66. *Ibid.*, p. 59.

67. *Ibid.*, p. 55-59.

68. G. Deleuze makes a detailed discussion of the world-pyramid image of Leibniz in the fifth chapter of *The Fold*, “Impossibility, Individuality, Liberty,” p. 61-62.

69. *Ibid.*, p. 62.

70. See “La Biblioteca de Babel,” from the collection *El Jardín de Senderos que se Bifurcan*. Jorge Luis Borges, *Ficciones*. Biblioteca Borges, Alianza Editorial S. A., Madrid, 2000; p. 99: “Yo me atrevo a insinuar esta solución del antiguo problema: *La Biblioteca es ilimitada y periódica*.” Translation from the Spanish original by the author.

71. Gottfried Wilhelm Leibniz, “Del Destino”, en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 13.

“Los antiguos poetas, como es el caso de Homero y algunos otros, la han llamado la cadena áurea, que Júpiter deja caer del cielo sin que pueda romperse, aunque se cuelgue de ella lo que se quiera. Y esta cadena consiste en la sucesión de las causas y los efectos.” (Translation by the author).

72. See the exhibition publication *Gabriel Orozco Chacabua*. Portikus Frankfurt am Main, 2000.

73. Reported by Aristotle in his *Physics*, Book III, Chapter 4. The author has translated from *Aristóteles: Obras*. Aguilar ediciones, Madrid, 1977, p. 604 : “Anax*goras ... parece

haber dicho que en alguna ocasión existieron todas las cosas simultáneamente, por ejemplo, esta carne y este hueso, y así cualquier otro ser; y luego, todas las cosas; y simultáneamente, por tanto”.

74. Giordano Bruno, *Sobre la Causa, Principio y Uno*. Quinto Dialogo, § 729, 730. In Clemente Fernández S.I., *Los Filósofos del Renacimiento*. Biblioteca de Autores Cristianos, Madrid, 1990, p. 369.

“Toda producción, de cualquier índole que sea, es una alteración, permaneciendo siempre idéntica a la sustancia... Lo entendió Salomón, que dice que *no hay nada nuevo bajo el sol, sino que lo que es, fue ya antes*.” (Translation by the author).

75. “Everyone knows the name that Leibniz ascribes to the soul or to the subject as a metaphysical point: the monad. He borrows this name from the Neoplatonists who used it to designate a state of One, a unity that envelops a multiplicity, the multiplicity developing the One in the manner of a ‘series.’” Gilles Deleuze. *The Fold. Leibniz and the Baroque*, p. 23.

76. G. W. Leibniz, *Monadologia*, § 3, (p. 26). “Allí donde no hay partes no hay, por consecuencia, ni extensión, ni figura, ni divisibilidad posibles. Ya estas Mónadas son los verdaderos Átomos de la Naturaleza y, en una palabra, los Elementos de las cosas”. (Translation by the author).

77. “... hace que cada sustancia simple tenga relaciones que expresen todas las demás, y que ella sea, por consiguiente, un espejo viviente y perpetuo del universo (§ 56).

Por tanto, aunque cada Mónada creada representa al universo entero, representa más distintamente el cuerpo que le afecta particularmente (§ 62). G. W. Leibniz, *Monadologia*, p. 44 y 47. (Translation by the author).

78. G. W. Leibniz, *Monadologia*, § 18, (p. 31): ‘Se podría dar el nombre de Entelequias a todas las sustancias simples, o Mónadas creadas, porque tienen en si mismas una cierta perfección (...) hay en ellas una suficiencia (...) que las convierte en fuentes de sus acciones internas y, por decirlo así, en Autómatas incorpóreos’.

79. *Early Greek Philosophy*, ed. Jonathan Barnes. Penguin Classics, London, 2001, p. 60.

80. Giordano Bruno, *Sobre la Causa, Principio y Uno*. Quinto Dialogo, § 731. In Clemente Fernández S.I., *Los Filósofos del Renacimiento*, p. 370: “Cualquier cosa que tomemos en el Universo, por tener en sí todo aquello que está todo en todo, contiene, en su modo, toda el alma del mundo (si bien no totalmente, como ya lo hemos dicho); alma que está toda en cualquier parte de aquél” (Translation by the author).

81. *Ibid.*, Quinto Diálogo, § 728: “... muchas formas son incompatibles en un mismo sujeto, o por ser contrarias, o por pertenecer a especies diversas: como no puede existir un mismo supósito [sic] individual bajo los accidentes de caballo y hombre o bajo las dimensiones de una planta o animal” (Translation by the author).

82. Gottfried Wilhelm Leibniz, “Sobre la libertad, la contingencia y la providencia (1689)”, en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 98. “De esta opinión no parece alejarse mucho un insigne filósofo de nuestro siglo, quien llega a afirmar expresamente que la materia toma sucesivamente todas las formas de que es capaz (*Princ. philos.*, pars III, art. 47), lo cual apenas puede defenderse, puesto que se destruiría toda la belleza del universo y toda la elección de las cosas, por no mencionar ahora otras cuestiones que podrían refutar dicho argumento” (Translation by the author).

83. Giordano Bruno, *Del infinito: el universo y los mundos*. Filosofía y Pensamiento Ensayo, Alianza Editorial, Madrid, 1998, p. 145.

“... en virtud de esa alternancia vicisitudinal no es inapropiado, sino razonabilísimo decir que las partes y átomos tienen un curso y movimiento infinito por las infinitas vicisitudes y transmutaciones tanto de formas como de lugares”. (Translation by the author).

84. *Ibid.*, p. 144: "No creo que sea absurdo e inconveniente, sino, por el contrario, convenientísimo y natural que sean finitas* las transmutaciones posibles a un sujeto y por eso partículas de tierra vayan vagando por la región etérea y accedan por el inmenso espacio ora a un cuerpo ora a otro..." (Translation by the author).

*Although this is the word in the original 1548 text, editors have come to agree that it is a misprint, and the text should say *infinite*. See note 31 on the Spanish edition used. In the translation the author has corrected *finite* into *infinite*.

85. "... Babilonia no es otra cosa que un infinito juego de azares." Jorge Luis Borges, "La lotería en Babilonia," *Ficciones*, p. 79. Translation from the Spanish by the author.

86. "Democritus asserted that space, or the Void, had an equal right with reality, or Being, to be considered existent. He conceived of the Void as a vacuum, an infinite space in which moved an infinite number of atoms that made up being (i.e. the physical world). ...the only things that exist in reality are atoms [Being] and the Void [non-Being]." Democritus, Encyclopaedia Britannica Online, <http://www.search.eb.com/bol/topic?eu=30391&setn=1&pm=1> (visited September 4, 2001).

87. While there is no extant text or fragment of a text where Democritus explicitly says that void and atoms appeared simultaneously, such a view is implicit in a fragment of his views reported by Diogenes Laertius; here in fact it seems as if the void even pre-existed matter: "The worlds came into being as follows: many bodies of all sorts of shapes move 'by abscission from the infinite' into a great void; they come together there and produce a single whirl (or vortex, *dinê*) in which, colliding with one another and revolving in all sorts of ways, they begin to separate apart, like to like. But when their multitude prevents them from rotating any longer in equilibrium, those that are fine go out towards the surrounding void as if sifted, while the rest 'abide together' and, becoming entangled, unite their motion and make a first spherical structure." Paul Cartledge, *Democritus*. Routledge, New York, 1999. p. 16-17.

88. Mark Haworth-Booth, "The Atomists." In Gabriel Orozco, *Empty Club*, p. 52.

89. See pp. 109 and following, in *Clinton is Innocent*.

90. Philip Rawson, *Sacred Tibet*. The author has used—translating back to English—the Spanish translation, published as *El Tibet Sagrado*. Ediciones del Prado, Madrid, 1995, p. 90.

91. Gabriel Orozco, "Artists Curate: Impact and satori-instruments of comprehension." In *Artforum* XL, No. 3, November 2001, p. 118.

92. *Early Greek Philosophy*, ed. Jonathan Barnes, p. 50.

93. Gabriel Orozco, in a series of interviews held with the author in Paris during August of 2003.

94. De Caelo, I, 9. *Aristóteles: Obras*. p. 727: "... eternidad, nombre derivado (en Griego), de ser siempre; eternidad, inmortal y divina".

95. Friedrich Nietzsche, *Más Allá del Bien y del Mal. Preludio de una Filosofía del Futuro*. Translated by Andrés Sánchez Pascual. El libro de Bolsillo, Biblioteca Nietzsche, Alianza Editorial, S.A. Madrid, 2000, pp. 35-36. However, Nietzsche would have us "declare war" on the "atomist need," that is, on the need to see the universe as a basic structure of atoms-material or immaterial, psychic or mechanistic. However, Orozco's atomism would be a "first step" for Nietzsche.

96. Molly Nesbit, "La Tempestad" *Gabriel Orozco*, p. 151.

97. *Ibid.*, page 151.

98. Gabriel Orozco, in a series of interviews held with the author in Paris during August of 2003.

99. Richard P. Feynman, *The Character of Physical Law*, p. 84.

100. *Ibid.*, p. 85.

101. Epilogue to the 1947 edition of "Tlön, Uqbar, Orbis Tertius." Jorge Luis Borges, *Ficciones*. El Libro de Bolsillo, Alianza Editorial, Madrid, 1991, p. 35: "Hace diez años bastaba cualquier simetría con apariencia de orden-el materialismo dialéctico, el anti-semitismo, el nazismo-para embelesar a los hombres. ¿Cómo no someterse a Tlön, a la minuciosa y vasta evidencia de un planeta ordenado? Inútil responder que la realidad también está ordenada. Quizá lo esté, pero de acuerdo a leyes divinas-traduzco: a leyes inhumanas-que no acabamos nunca de percibir. Tlön será un laberinto, pero es un laberinto urdido por hombres, un laberinto destinado a que lo descifren los hombres.

El contacto y el hábito de Tlön han desintegrado este mundo. Encantada por su rigor, la humanidad olvida y torna a olvidar que es un rigor de ajedrecistas, no de ángeles." Translation from the Spanish by the author.

102. *Ibid.*, page 36.

103. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 87.

104. *Ibid.*, p. 133.

105. *Ibid.*, p. 145.

106. Paul Cartledge, *Democritus*, p. 11-12.

107. *Aristóteles: Obras*, p. 714: "... es imposible que los cuerpos que llamamos simples sean más en número".

108. *Ibid.*, p. 624: "... pero no hay proporción ninguna entre el vacío y lo lleno".

109. *Ibid.*, p. 618-619: "... nos queda tan solo concluir que el lugar es la cuarta de las cosas que hemos dicho; es decir, el límite extremo del cuerpo envolvente... Aún otra consecuencia: el lugar parece ser una superficie y algo así como una vasija; es decir, una envoltura. Y además, el límite esta con la cosa limitada, y por ello el lugar está con las cosa o ser".

110. *Ibid.*, p. 727: "... el fin del cielo entero, y el límite o fin que contiene todo el tiempo y la infinitud, es la eternidad, nombre derivado (en griego), de ser siempre; eternidad, inmortal y divina".

111. *Ibid.*, p. 618: "Por consiguiente, si el lugar no es ninguna de las tres cosas dichas, ni la forma, ni la materia, ni un espacio o intervalo receptivo..."

112. Plato, *Timaeus and Critias*, trans. Desmond Lee. Penguin Classics, Penguin Books, London, 1977, p. 47.

113. *Ibid.*, p. 67.

114. *Ibid.*, p. 69.

115. *Ibid.*, p. 72.

116. *Ibid.*, p. 72.

117. *Ibid.*, p. 72.

118. "The relation between his geometrical shapes and their material is not clear; how can solids be made up of and disintegrate into triangles? He has not sufficiently distinguished between geometrical figure and material particle." From the Introduction by Desmond Lee, Plato, *Timaeus and Critias*, p. 16.

119. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 44.

120. Plato, *Timaeus and Critias*, p. 69.

121. Jorge Luis Borges, "El tiempo circular", in *Historia de la Eternidad*. Biblioteca Borges, Alianza Editorial S.A., Madrid, 2000, p. 108: "... la historia humana se repite; nada hay ahora que no fue; lo que ha sido, será; pero todo ello en general, no (como determina Platón) en particular' (*De admirandis naturae arcanis*, diálogo 52)."

122. Benjamin Buchloh has written more extensively about the historical and social implications of some of the materials used by Orozco in his work. See Benjamin H.D. Buchloh,

"Refuse and refuge", in *Gabriel Orozco*, ed. M. Catherine de Zegher. The Kanaal Art Foundation, Kortrijk, p. 43, 44.

123. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 31.

124. *Ibid.*, p. 137.

125. *Ibid.*, p. 49.

126. *Ibid.*, p. 52.

127. *Ibid.*, p. 49.

128. *Ibid.*, p. 145.

129. Gabriel Orozco, in an interview held with the author in Paris during August of 2003.

130. Daisetz Teitaro Suzuki. "Satori o la obtención de un punto de vista visual," *Introducción al Budismo Zen*. El Mensajero, Bilbao, 1992, p. 128. The work was originally published in German as *Die Grosse Befreiung. Einführung in den Zen-Buddismus*. Rascher-Verlag Zürich. The author has translated from the Spanish edition.

131. On the importance of satori for Gabriel Orozco, see, for example, "Impact and Satori. Instruments of Comprehension," the title of the "Artists' Curate" section realized by the artist for *Artforum*, November 2001. In it, Orozco wrote (p. 123) that "Cadere's color sequences recall Jainist maps of the expanding cosmos. He followed strict mathematical rules and always introduced an error into the system. Void and fullness, impact and satori, comprehension and totality—that's what all of the images here are about. But they are also games-banal, playful, often absurd."

132. Gabriel Orozco, in an interview held with the author in Paris during August of 2003.

133. Ernest Wood, *Zen Dictionary*, Penguin Books; entry on *Wu-wei*—"in Japanese, Mu." The author has used the Spanish translation-translating back to English-of the work, published as *Diccionario Zen*. Editorial Paidós Mexicana, México, 1990, p. 179.

134. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 115.

135. Gabriel Orozco, in a series of interviews held with the author in Paris during August of 2003.

136. The sketch was drawn up by G. Orozco while talking about the *Empty Shoe Box* during an interview with the author held in Paris in August of 2003. The diagram was developed from the sketch with the artist's consent.

137. Gregory L. Naber, *Topological methods in euclidian spaces*. Dover Publications, New York, 2000, p. 4.

138. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 99.

139. Quoted by Molly Nesbitt in "The Tempest," *Gabriel Orozco*, p. 141.

140. *Early Greek Philosophy*, p. 208.

141. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 65.

142. *Ibid.*, p. 65.

143. Paul Cartledge, *Democritus*, p. 16.

144. Prabhakar Gondhalekar, *The Grip of Gravity*, p. 330.

145. Barry Parker, *Quantum Legacy*. P. 148 and following: "Victor Weisskopf of MIT suggested that it might be possible to redefine mass and charge, a process we now refer to as *renormalization*."

146. *Ibid.*, p. 335.

147. Lawrence M. Krauss, "Cosmological Antigravity," in *The Once and Future Cosmos. Scientific American Special Edition*, Volume 12, Number 2, 2002. Scientific American Inc., New York, 2002, p. 33.

148. Gottfried Wilhelm Leibniz, "Sobre la libertad, la contingencia, y la providencia (1689)," en *Escritos en Torno a la Libertad, el Azar y el Destino*, p. 104: "Así como la ciencia

geométrica ha venido suministrando proposiciones inconmensurables y poseemos demostraciones de las series aunque estas sean infinitas, las verdades contingentes o infinitas se rinden con mayor motivo a la ciencia divina y son conocidas por él, no por medio de la demostración (lo cual implicaría una contradicción), sino a través de una visión infalible". (Translation by the author).

149. Note 1 in chapter 5. "Impossibility, Individuality, Liberty." Gilles Deleuze. *The Fold. Leibniz and the Baroque*, p. 150.

150. *Ibid.*, p. 81.

151. Cf. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*. University of Minnesota Press, Minneapolis, 1987, especially chapter 12, "1227: Treatise on Nomadology—The War Machine."

152. See the introduction by Miguel A. Granada to: Giordano Bruno, *Del infinito: el universo y los mundos*. Filosofía y Pensamiento Ensayo, Alianza Editorial, Madrid, 1998, and also by the same author, *Giordano Bruno y América. De la crítica de la colonización a la crítica del cristianismo*, Geocrítica, Cuadernos críticos de Geografía Humana, número 90, Barcelona, 1990. The quote is taken from note 125 of the introduction, p. 55: "Cf. *La Cena*, pp. 68s.: 'Los Tifis han encontrado la manera de perturbar la paz ajena, de violar los genios patrios de las regiones, de confundir lo que la providente naturaleza había separado, de duplicar mediante el comercio los defectos y añadir a los de una los vicios de otra nación...'. Ello permite a Bruno condenar la colonización europea de América como una trasgresión de la separación natural. Bruno pretendía con ello refutar las doctrinas contemporáneas, representadas en Francia por Bodino, que legitimaban la colonización por los efectos benéficos del comercio mundial, instrumento de la providencia divina para el establecimiento de la sociedad fraterna universal a que los hombres están llamados por su origen monogenético en Adán." (Translation from the Spanish by the author).

153. Trying to give a definition of symmetry, "one of the fundamental principles of architecture," Vitruvius wrote, somewhat tautologically, that "Symmetry is a proper agreement between the members of the work itself, and relation between the different parts and the whole general scheme, in accordance with a certain part selected as standard. Thus in the human body there is a kind of symmetrical harmony between forearm, foot, palm, finger, and other small parts; and so it is with perfect buildings." Vitruvius, *The Ten Books of Architecture*, trans. Morris Hicky Morgan. Dover Publications, New York, 1960, p. 14 (Book 1, Chapter II, § 4.)

154. Carlos I Calle, *Superstrings and other things*, p. 571.

155. Gabriel Orozco, in an interview held with the author in Paris, August of 2003.

156. *Ibid.*

157. "Benjamin Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, p. 103.

158. Gabriel Orozco, in an interview held with the author in Paris, August of 2003.

Overleaf: The Weight of the Sun, 2003. Installation view Douglas Hyde Gallery, Dublin





EPILOGUE

THE WEIGHT OF THE SUN

Some of the indigenous cultures surviving in Mexico—like the *Coras*, *Huicholes*, or *Tarahumaras*—have appropriated for themselves the Christian Passion cycle as a heliocentric myth. Christ's death and resurrection is re-enacted, during Holy Week, as the resurrection of the Sun after its plunge into winter depths. The descent of God in human form and His subsequent sacrifice on earth is interpreted as a descent into the midst of everyday things, from which He raises again only through the human awareness of His exertion. In tightly guarded chapels, crucifixes are pulled down from the altar, then laid down on the floor while on the outside the chaos of darkness takes over in terms of the dissolution of cultural norms and symbols.¹ Only after two nights of praying and fasting do the Sun-Crosses resurrect; they are then lifted back into their high place. With a renewed awareness sociality resumes a new cycle.

This is the kind of cultural syncretism that Ramon Lull, the 13th century Catalan philosopher and mystic, would have considered as the fulfillment of his own goals. Lull had assumed as his own personal calling the preparation of medieval Christianity for its expansion into foreign worlds, particularly those of the Far East. He believed that Christianity could

win over the faiths of both Jews and Muslims only through the positing of the Gospels in terms that the other cultures could understand and assimilate. This could be done through the incorporation within the same Christian doctrine of cultural paradigms borrowed from the other two cultures, as well as through the re-valorization of its own universally recognized archetypes. One of those archetypes is that of the dual Sun-Cross form as a figure actualizing God's self-immolation for the purpose that things can both exist and be perceived:

Just as You have created the Sun in the middle of the heavens so that it can illuminate and warm the earth, so You have placed the holy cross on the earth, so as to illuminate the blind and warm the heart of believers.²

An extremely complex syncretism is immediately perceived when viewing the work that Gabriel Orozco made for the Douglas Hyde Gallery in Trinity College, Dublin. To begin with, we have a Mexican artist making a piece with the archaic-sounding title *The Weight of the Sun* (recalling, inescapably, Aztec solar mythologies or heavy stone calendars), displayed at the heart of the university that saw the likes of Bishop Berkeley, Samuel Beckett, and Edmund Burke within its walls.

In this temple of knowledge a broom has been suspended smack in the center of its gallery space. The broom is one of the most powerful archetypal symbols of all cultures, standing

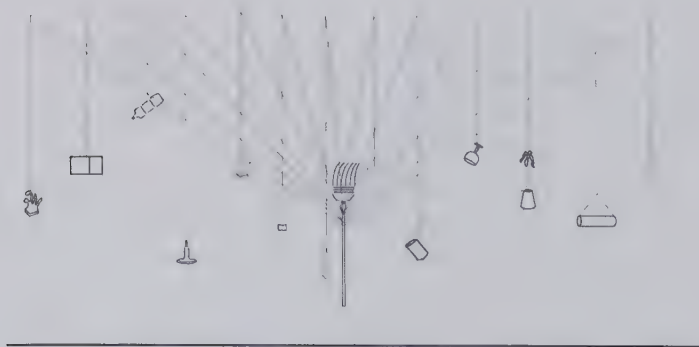


Fig. 1 The Weight of the Sun

above all as the most direct representation of cleaning, yet with resonances that range from humble labor to magical flight.

Further, this broom is suspended in mid-air by the counterweight of consumerist, disposable detritus found in or around the gallery: a banana peel, plastic cups, empty bottles, etc., are each tied up with strings that simply go around the gallery's metal lighting grid and are then tied at the neck of the broom. *The Weight of the Sun* is, in short, the weight of an old broom rescued from the gallery's storeroom, carefully counterbalanced by thirteen extremely light found objects.

Despite the heaviness recalled by its title, the work actually creates around it an exquisite sense of weightlessness. The artist had actually weighed the broom before lifting it by strings, realizing that he needed at least 555 grams of detritus to balance the object. In the finished work, however, some of the residual material that is connected to the broom is of such light weight that its presence does not seem to affect the system balance. They could be removed and still the broom would hang at the same level. Any movement of the broom, however, affects and moves *all* the connected residues. In contemplating this delicate balance, and moving around cellophane wrappings and cigarette butts, the spectator starts to have the feeling that any thing that moves into the system will have an impact on its gravitational field—one's presence, even one's own thoughts.

The sacrifice of labour

A direct reading of the work would see in the centrally placed broom the redemption of labour. The broom appears to symbolize the most fundamental of all human menial work. As such, all object and sign productions are seen as depending on its basic activity for their existence.

The symbolism seems accentuated by the artist's use of a traditional broom worn-out by use. A modern broom of plastic bristles would not have had the same kind of historical

resonance associated with the labor contained by the traditional one. From this point of view, the old broom appears as the symbol of a sacrificial act for the sake of social mechanisms. In it, all menial, hard, underpaid work stands as a kind of sacrifice that some people have to make in order that the cost of objects should remain accessible to most of us. This “subtle” sacrifice remains hidden in the object so that the buyer acquires it without knowledge of the weight of labour that is contained within it.

The unveiling of this direct dependency between menial work and object production brings about in the spectator an awareness of the complexity of consumer goods, which always appear as politically “lightweight”. Thus the broom acts, like the sun or the crucifix, as the token of a sacrifice that illuminates the nature of things but that needs to be known. The weight of the broom reveals that disposable goods, even if physically lightweight, contain an astronomical amount of social energy condensed in them.

The possibility that the artist has actually considered this “labor” reading of the work is made plausible by the fact that his early education, both at home and at school, occurred under the shadow of Marxism, as Gabriel Kuri has pointed out.³

There is, however, a detail in the work that seems to point out into a different, ampler space of interpretation. The broom, our symbol of labour, is actually not in its working position, nor hidden away after its work. The broom is turned upside down, so that the work it is performing is not that of actually sweeping. It is flipped upside down as if to shake off the collected dust.

It is a gesture of sending off *something* into the air. Dust, initially collected by the broom bristles from the floor, is the degraded substance of things; it contains the history of objects. Through a symmetrical operation performed on the broom—flipping it upside down—, dust is transmuted with-

in it into a new knowledge about the nature of objects. It is then sent off into the air as a kind of gold powder that falls on and illuminates what had been considered nothing but residue. The broom is the active intellect that has gained the awareness with which to interpret all the potential readings hidden within things. It is a kind of intellectual sun that casts a new light on the perception of previously discarded objects.

The transmutation of dust into gold

"Upon the whole, I am inclined to think that the far greater part, if not all, of those difficulties which have hitherto amused philosophers, and blocked up the way to knowledge, are entirely owing to ourselves. That we have first raised a dust, and then complain we cannot see."

BISHOP BERKELEY, *Principles of Human Knowledge*.⁴

Bishop Berkeley considered as dust all the notions abstracted from physical phenomena with which philosophers try to arrive at an abstract understanding of the nature of things. Dust, in other words, is scientific knowledge. The apparent sweeping away of the little things so as to clean up perception and arrive at pure, abstract ideas was for him a mere raising of clouds of mental dust which do not allow the intellect to see that matter is in fact *derived* from ideas; and not the other way around.⁵ The labor is not that of sweeping around, but that of simply putting things back in their proper place.

Gabriel Orozco, on the other hand, focuses his gaze on the dust lingering around things. There, dust implies the inertia of everyday life, of the passage of time: history, or the passing away of things. The imprints made on it—footsteps or fingerprints—register the history of everyday events, much like the splotches left by the bouncing of the wet ping-pong balls on the game tables record the accidents of event-trajectories.

For the artist, dust is not that cloud of abstract ideas denounced by Berkeley, but, rather, a kind of archetypal element which maps the quotidian, monotonous, historically-

determined perception of objects. Further, dust is an actual, material stuff, not just a mental fog. The sweeping away of dust, in this sense, is the erasing of the historical time-map of perception, the making of a clean slate for the registration of new events and the mapping of a new game chessboard.

On the clean board, event-objects are now ready to bounce around new surfaces. The result is that objects previously perceived within determinate historical spaces are now brought out into contemporary spaces. In this new space they become actual objects again.



Fig. 2 Sweeping the floor

As discussed in the previous essay, Orozco considers the perception of physical objects as a process totally determined by the temporal and social space in which it takes place. It is a game of significations structured by atomic automata of space and time. Dust, as a proto-historical substance, is the element that has mapped the game of social perception of things. In this sense, the sweeping of the dust is the removal from things of all historical extra material, isolating objects in a new social and historical context.

The dust that falls off objects as a residue becomes the refuse of history and sociality. It has mapped history, but is then pushed away as a decayed surface. Collected into a pile on the floor, or clinging to the broom bristles, dust is left out of the social game of signification, entering into a kind of a-historical limbo. It becomes a material without any social use; it turns into what Orozco calls “pure matter.” Dust in

this sense is not an abstraction from materiality, but, rather, residual matter cancelled out of its social signification; it is the suspension of ideas about matter. It becomes a form of detritus pushed aside from the surfaces of games, not participating in them, but, like all garbage, getting in the way. It has to be swept away for the games to run smoothly.

Yet Gabriel Orozco finds in this very dust the accessibility to a kind of moldable substance that is beyond historicity. It is matter as archetype. As such, it is a material that is open to transmutations into any other substance, the kind of stuff that contains within it the potential to become anything in the universe.

BB – What about the rubber in *Recaptured Nature*? Is that matter socially mediated or is that pure corporeal matter?

GO – It's socially mediated.

...

GO – The same as with *The Yielding Stone*. It's industrially produced, completely artificial, and that's why it's called stone, because it's not, it's a fake stone. It's pure dust and oil. Dust you can say is pure matter "par excellence," the beginning and the end of everything.⁶

Apart from its eschatological overtones, dust is unique in the sense that Orozco had declared in that same interview that "pure matter" as such does not really exist. Except as dust.⁷ It is also unique in that, spread on surfaces, it registers history and the end of things, while when collected it is totally deprived of history. It is unique in marking the cycle where, first, things degrade to become the dust-map of events or time. Time, in turn, becomes pure matter, which is then socially transformed into materials, and then, again, into objects.

The broom, dust, the Sun, introduce into the work non-historical, archetypal conceptions. Because of this a-historicity, they suspend the game of perception played always on temporal surfaces. The suspension of perception through the contemplation of archetypes is basically a *mandala* operation, as C. G. Jung has pointed out.⁸ *The Weight of the Sun* acts as a

mandala that suspends perception through the contemplation of an archetypal center point. After this suspension and contact with meta-historical material, perception returns to things with the awareness of its initial historical determination; it then realizes that the reading it has invested into things are only relative, temporally-determined significations; it is then capable of discovering in residues, or any other stuff, potential other historical readings. It is in this sense that collected dust, as pure matter, is shaken off by the broom as a powder that falls back into things and illuminates their other meanings. Gray, clouding dust is thus transmuted through non-perception into a light, illuminating powder. It is the kind of transmutation that alchemists called one of the forms of gold, the powder of the Sun.

Ramon Lull and the ars combinatoria

One of the very few instances of the appearance of a mandala in western philosophical and theological thought is that developed by Ramon Lull in connection with his *ars combinatoria*. It came to him as a mystical revelation during a period of retirement in the Randa Mountains of Catalunya during 1274, as a tool providentially granted so as to make easier the propagation of the Christian doctrine through the lands of the Jews and Muslims. Lull considered the form as one that could be easily interpreted by Far East heathens, being a form that was already part of their own culture.⁹

Like Orozco, Ramon Lull also considered perception as a continuous confrontation between antagonistic players: between “outside” reality—as perceived by the senses—and the interior intellect. Following a scholastic systematization, he had conceived of the process of perception as a fourfold progression:

Whosoever wants to acquire the art and the manner of perceiving and understanding sensory and intellectual opposites, must go through four steps: the first is, Lord, to begin with sensory opposites, and that from a sensory opposite the other one be sought out; the second step is, through sensory opposites find

the intellectual opposites; the third step is that starting with some intellectual opposites arrive at other intellectual opposites; the fourth step is that with the intellectual opposites the man uncover the sensory ones.¹⁰

This process of perception marks a progression that in its first three stages is ascending but that in the last stage turns and descends into things. The ascension marks the process leading to philosophical knowledge: from the sensory perception of physical things, on to the intellectual apperception of those sensory incorporations, and then to the mental confrontation between purely intellectual apperceptions. The final stage is the crucial one for Lull. The tortuous descent of the intellect to physical objects re-enacts God's descent into physical suffering implicit in materiality and explicit in the Cross.¹¹ It is the kind of knowledge that Lull calls *amancia*, or a knowledge of love for things, and with which philosophical knowledge finds its complementarity and redemption: "*Amancia* is imperfect without science [philosophy], and science is imperfect without *amancia*."¹²

But the redeeming descent into things can make sense only with an intellect that is aware of both the infinite Unity from which things spring, and the potential significations invested by the Unity on them. It is a return to things with an ordering, systematizing intellect that can read into objects all the secret meanings that God put into them during the time of the Creation. As a tool for this ordering, Ramon Lull provided the geometric mandalas (which he simply called "figures") of his *ars combinatoria*, originally presented as *Ars compendiosa inveniendi veritatem* in 1274, the year of his revelations.

The ordering of the intellect is achieved through the mnemonic contemplation of circular mandalas, a mental operation which in fact is at the core of the oriental mandala, as Philip Rawson reminds us in his fundamental work on Tibetan religion: "A mandala is a circular diagram of the process by which the universe unfolds itself from its center...

Ramon Lull produced several versions, each one projecting into the mind a different aspect of the relationship between attributes and Unity; they were meant to be complementary to each other. The figures, moreover, were constantly refined in the different editions that Lull had published at his own expense throughout the rest of his life. The Lullian figures presented in the shorter *Ars generalis ultima* of 1308 are formed by concentric circles of which the outer rings are subdivided into nine equal arcs. The central, larger circle represents unity (signaled by an A, of God, or a T, of Triangle or Trinity, etc.); the outer subdivisions each contain a letter from B to K, each representing the different qualities or principles that belong to A or T but that—as a consequence—describe everything else that exists.



Fig. 3 Ramon Lull, figure II of the *Ars generalis ultima* (1308).¹⁵

In the starting point of this figure is included everything that is; because everything that is, is either great, or good, etc., like God or an angel, which are good, and great, etc. Therefore everything that is can be reduced to that beginning.¹⁴

Starting from the awareness of infinite unity as an intellectual-mystical center point that contains everything, understanding then proceeds to integrate every material perception into the varying, possible qualities of the One. The process is totally mental, requiring the strict memorization of the circular mechanisms,¹⁶ so that the mind can turn and accommodate every perception into the corresponding quality.

Through this process of rotating intellectualities, the mind can discover meanings (what Lull calls “secrets”) that are hidden in everyday things and which reveal to the aware mind the potential significations concealed in them.

27. Magnificent Lord...! When nature acts in actuality and in potentiality, it hides its secrets from sensuality in potentiality; it then deprives forms of their actuality, sending them back into potentiality. Lord, whosever wants to learn these secrets must seek them with the intellect in potentiality, not accepting those forms if they do not know that they are well set in physical things [*sensualitatis*].¹⁷

Ordered with Lull’s systematizing tool, the intellect can turn into things, accommodating each apperception into the corresponding outer “chamber” of the figure. The concentric wheels then rotate alternately; aligning each turn with different chambers with the original one. With each rotation a new quality is ascribed to the perception, so that for every subject there are attached all the possible predicates. Multiple significations are thereby ascribed to the physical reality, with all the potential predicates examined in their relation with the central unity.¹⁸

Parallel to this circular mechanism, Lull also developed a grid of square chambers, each containing a combination of two letters from his alphabet of divine attributes. This binary system contains 120 chambers, resulting from all possible combinations of the letters.¹⁹ Lull thus felt that it was possible to

describe all the possible subject-predicate relations describing God, which is to say the description of everything that is. x

Solar games

The Weight of the Sun starts off from a central point of contemplation that is also “the beginning and the end of everything”: dust. It has been transformed from a mere material residue into an archetypal substance through the symmetrical operation performed on the broom, for the flipping upside down of the broom also makes evident the symmetrical operation performed on dust. It is the kind of operation that Gabriel Orozco carries out continuously in his work, resulting in objects that are ontologically invariant to the original ones, but with new, additional readings related to them..

Lifted from the ground and upturned in the air, the broom carries collected dust within its bristles. Suspended in the Void, the broom is now the gravitational center of a planetary system of residual things. Dust, initially historical detritus, now becomes meta-historical dust by the symmetrical upturning; it becomes an archetype connected by symmetry to the



Fig. 4 Symmetry operations in *The Weight of the Sun*

infinite. Away from the temporal map of social exchange—the gallery floor—dust becomes in this way the stuff that is the beginning and the end of all (socially determined) matter.

Here it is relevant to recall again C.G. Jung, who considered a concrete archetypal form as basically the desperate attempt of consciousness to represent a fundamentally indefinable something with non-concrete attributes. The archetype itself—different from the archetypal *form*—he considered as actually a non-form with certain meanings attributed to it: “The archetype as such is a psychoid factor that belongs, as it were, to the invisible, ultraviolet end of the psychic spectrum. It does not appear, in itself, to be capable of reaching consciousness.”²⁰ It is in this sense that dust, as a cosmic primordial substance without form, is one of the closest representations of the Origin archetype; it is the material non-form ready to accept any new other archetypal forms that consciousness desires; it has no shape but has the potential to become anything concrete, acting like the Origin of all other archetypes. “We must, however, constantly bear in mind,” Jung reminds us, “that what we mean by ‘archetype’ is itself irrepresentable but has effects which make visualizations of it possible.”²¹

It is with this meaning that dust—as the closest simile of an “irrepresentable” Origin—suspends the social exchange that gives meaning to all objects. It creates a kind of perceptual void or non-gravitational material center. Deprived of the physical qualities ascribed by social interactions to matter, dust is now free to escape the broom-sun as a kind of archetypal emission that falls on the surrounding, already discarded, objects. Contact with the Origin archetype connects rejected objects to their own archetypal forms. Thereby the innermost meanings of the shapes are brought out into light, and this is the reason that the artist has manipulated most of the found objects into unexpected, subtle representations which are sometimes strongly metaphorical. But this is how

dust becomes a kind of light, as it brings forth the “new” significations of the objects, themselves ready to be illuminated by the fact that the symmetrical operation removing them from the floor was performed simultaneously on them.

These “new” meanings of refuse are actually readings already contained by the objects, but which were hidden—for political, historical, market reasons—within them. Just as the broom contains within it the reading of labour, so all industrial, disposable objects contain archetypal readings, which are either exploited or hidden away by their producers. When exploited, they are readings used as political instruments, or as consumption-inducing tools. Or they are concealed, alternative identities potentially contained within them, as with banana peels and cigarette butts that can become flowers. Such is the operation performed by Orozco’s own mandala, aimed, like Lull’s, at the uncovering of all the hidden, multiple meanings of things.

It is in this activation of symmetrical operations to uncover identities that *The Weight of the Sun* is also a game; this type of game, like Lull’s *ars combinatoria*, has its first moves in mental space, whereby the symmetrical operations made by the artist’s mandala are applied to all found things; through their connection to the final-initial nothingness of dust, and their uplifting from the time map of historicity, apparently closed identities are unveiled as objects into which the political or marketing eventualities of their creation were concealed. Starting as a mental operation the game ends with concrete consequences on objects, much as Lull also emphasized that the uncovered meanings were “well set in physical things.” Through this process, then, it is possible to re-construct the politics of creation of the present world, or of the universe.

With the operations of *The Weight of the Sun* memorized, the spectator can go on to play with any object he or she encounters in everyday life, applying symmetrical transfor-

mations on them and discovering all the possible predicates of the object on its way to becoming pure matter.

Orozco's return to things is not, by the way, the phenomenological return to "things themselves." Phenomenology strives for a return to the possibility of grasping the essence of matter, away from its perception through conceptualities. Orozco's return to things is, like Ramon Lull's, a progressive descent into the multiple significations packed into any physical object. It denies the existence of one essence, asserting a multiplicity of essential significations in things. Much of the artist's work is focused mainly on uncovering them.

Like Ramon Lull's circular figures, Orozco's work provides a kind of staircase between the perceptual void (as a unity) and the multiplicity of exterior things. This staircase allows the ascending and descending operations of perception as a systematized process of sign explication. The ultimate goal of both games is the uncovering of the secrets of how and for what the world was created, either by a secretive Supreme Being or by a camouflaged political system. Finally, both try to make sense of a physical sacrifice (the cross, labour), made for the sake of the world.

Virtual worlds and digitalization

It is known that both Giordano Bruno and G.W. Leibniz—like many of their contemporaries—were decisively influenced in their philosophical thought by the *ars combinatoria* of Ramon Lull. Bruno, who published several studies of the Lullian opus, used the *ars combinatoria* especially as a mnemonic system for the comprehension of the constituent parts of universe.²² He also found in the system a confirmation of his doctrine that any thing in the world has the potential to become everything else.

G.W. Leibniz, who wrote his own *De Arte Combinatoria* under the influence of Lull in 1666,²³ found in the Catalan philosopher's binary system of letters representing all the

attributes of things, the foundation for the development of the binary system of 0 and 1, which in turn became the basis of the process of digitalization. Although Leibniz, like Lull, conceived his system above all as a representation of the Creation, it eventually became a totally instrumental, computing process; the *Encyclopedia of Computer Science* reports that "Leibniz is frequently credited with having developed binary numerals, which he described in his 1701 *Essay on a New Science of Numbers*." ²⁴ Thus present day virtual representations have their likely origins in the religious yearnings of a thirteenth century mystic who saw the possibility of representing everything that exists in two-letter codes.

This realization is of particular importance regarding the contemporary world of art in its confrontation with the non-physical projection of sensory experience. Trying to explain the demise of sculpture as a foremost art form in contemporary culture, Benjamin Buchloh bemoans the present day, "unimagined level of electronic and digital abstraction, giving rise to the mirage of the transformation of matter into mathematical and digital 'equivalents.' Any spatial relation and material form one might still experience outside the registers of overproduction and digitalization will now appear as an abandoned zone, a zone of remnant objects and leftover spaces." ²⁵

Lull's binary codification was meant as a tool for aiding the intellect in arriving at an understanding of the ultimate nature of things. With it, understanding becomes an active, questioning actor within the world it perceives. It is founded on the ordered, knowing descent of the intellect into things.

Contemporary digitalization, on the other hand, follows the opposite direction with numbing results. Things are first codified into binary information in the strict forms that the political/economical actualization requires. These codifications are then fed into a passive intellect, which is left with-

out the opportunity to decipher what was left behind of the original object in the “no zones” of political residue. It is a process inverse to that of Lull, as things are first codified and then sent up to the intellect.

In his work, Gabriel Orozco walks into the abandoned zone of refuse and subverts the reductive processes of digitalization and overproduction. He does so by picking up the discarded bits that contain within them what is meant to be politically hidden; he then gives the spectator a tool for decoding the information—the symmetrical operations that displace objects from their present temporal-social space, sending them into other, faster play areas with alternative historical and social perceptions. Objects, through this operation, are denuded of the immediate signification invested on them by the present systematization, re-incorporating in *their translation to new game tables* the significations that had been previously deprived from them.

In this way the artist shows us an exhilarating, humorous return to things as the return to the manifold play areas where meanings are created. It is a return to physicality through the very activation of the intellect. He also shows us what every kid in the street knows: abandoned zones are the best playing areas.

Idealism, perception, the world

Viewed comprehensively, the work of Gabriel Orozco directly engages one of the fundamental themes in the philosophy of Western culture—the nature of perception, in terms of *how* perception works and *what* is the nature of that which is perceived. In other words, it addresses the question of what does it mean that there is a world out there? It is a question particularly relevant to a contemporary culture that is turning its back on the physical world in favour of substitute intellectual “sensualities,” to put it in Lull’s terms. In this

turning its back to materiality, this culture seems to forget the material, labour sacrifices necessary for this world to produce its mirages.

In his affirmation that all sense perceptions of physical reality are produced by historical/social mappings, Orozco seems to be very close to Bishop Berkeley's philosophy that nothing exists outside the aprioristic ideas of the mind. Yet Orozco does seem to believe that there is *something* out there independent of every human idea; but this *something* is invariably invested with multiple essences by the accidents of the different time-maps to which it belongs. That, in fact, it is perceived only as a social construction. Except for some materials that seem to escape briefly from their eventual frame, like a skull, or dust.

And even at the end, by the will of God, your matter shall irradiate such light as you couldn't possibly imagine. Wait then shortly for the end, which you will see at the completion of three days, when your matter will form into grains like atoms of sun, of such interesting red colour that next to the most remarkable red it will appear to darken as a very pure, coagulated blood. You would never believe that the art could create anything comparable to this elixir. It is such an admirable creation that there is nothing like it in all of nature, there being nothing exactly like it.

—EYRAENEUS PHILALETA COSMOPOLITA, *Introitus apertus ad occlusum Regis Palatium* (1667), 30: § III.

NOTES

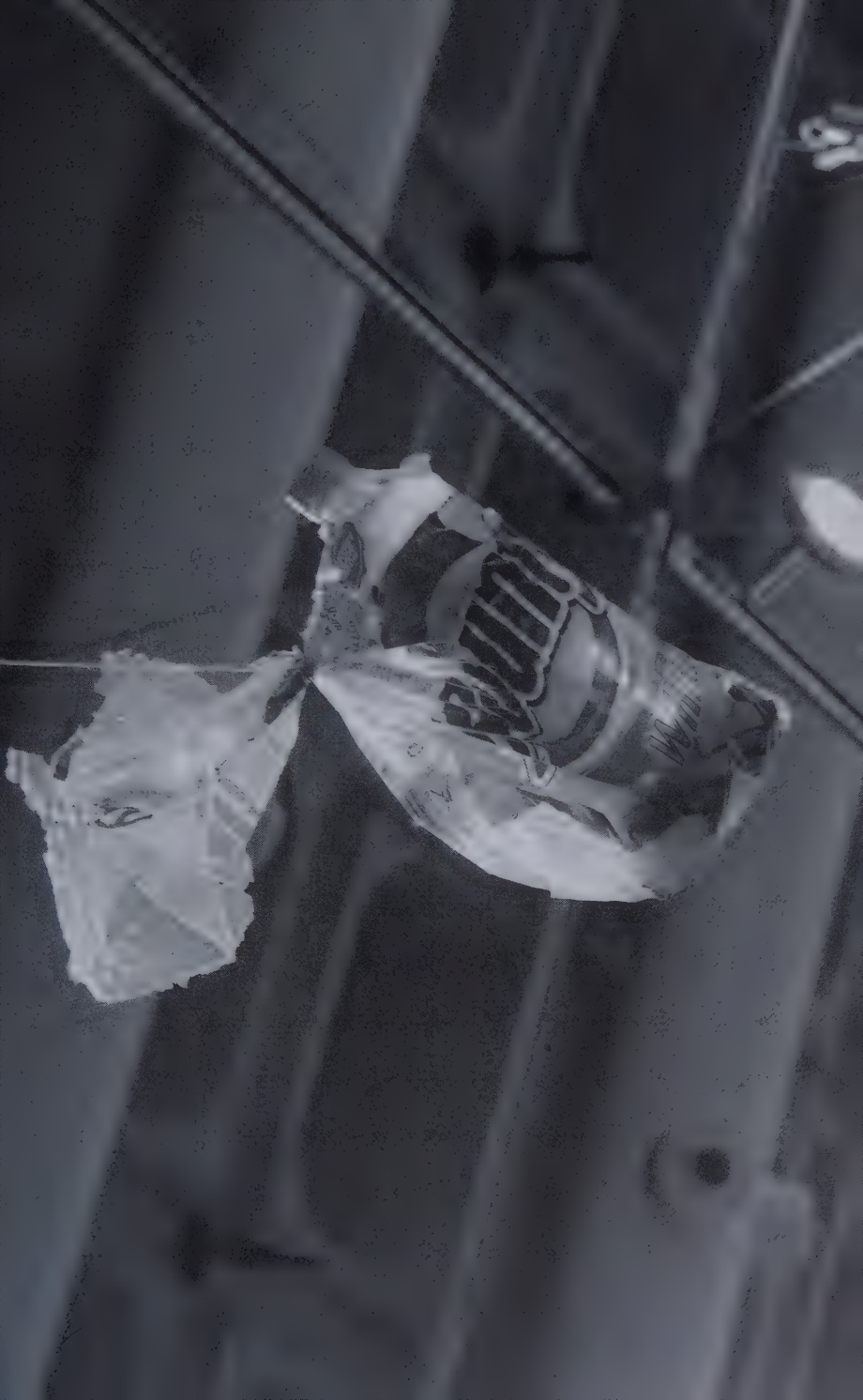
1. See the description of *Semana Santa* rituals among the *Huicholes*, *Coras*, and *Tarabumaras*, done by Fernando Benítez in the series *Los Indios de México*, Ediciones Era, México, D.F. Particularly, the *Huichol Semana Santa* is discussed in the volume *Los Huicholes*, pp. 251-265.
2. *Obres Selectes de Ramon Lull*, ed. Antonio Bonner, Palma de Mallorca, 1989, vol. II, p. 167.
25. Amador Vega, *Ramon Lull y el Secreto de la Vida*. Ediciones Siruela, Madrid, 2002, p. 65. Translation from the Spanish by the author.
3. "Gabriel, at home as well as at school, received a leftist education... While his school-mates went to camp in the United States or participated in the Boy Scouts, Gabriel spent a few summers during his teenage years in the Soviet Union and Cuba." Gabriel Kuri, in his essay "General Orozco: By Way of Introduction", in the Catalogue *Gabriel Orozco*, published by The Museum of Contemporary Art, Los Angeles, 2000, pp. 37-38.
4. George Berkeley, *Principles of Human Knowledge/ Three Dialogues*, ed. Roger Woolhouse. Penguin Books, 1988. Introduction, § 3, p. 38.
5. "17. It were an endless, as well as an useless thing, to trace the Schoolmen, those great masters of abstraction, through all the manifold inextricable labyrinths of error and dispute, which their doctrine of abstract natures and notions seems to have led them into. What bickering and controversies, and what a learned dust have been raised about those matters..." *Ibid.*, p. 46.
6. "Benjamín Buchloh interviews Gabriel Orozco in New York." In *Clinton is Innocent*, Musée d'Art Moderne de la Ville de Paris (ARC), pp. 65-67.
7. "GO - I don't think that's important. Pure matter never existed really. Pure matter, even a rock, is not pure, nor is a tree, or grass, pavement, the metal or bench in the park, or the plastic you're touching when you're sitting in a car. Even a metal is a combination of three or four metals. There are so many shapes and combinations. They are all social and political and historical perceptions of things." *Ibid.*, p. 65.
8. "Everything archetypal which is perceived by consciousness seems to represent a set of variations on a ground theme. One is most impressed by this fact when one studies the endless variations of the mandala motif." In the chapter "Patterns of Behaviour and Archetypes," of *On the Nature of the Psyche*. Published in *Basic Writings of C.G. Jung*, ed. Violet Staub de Laszlo. The Modern Library, New York, 1959, p. 83.
9. "... conscious of the difficulty of introducing into the dialogue with Jews and Muslims the figure of the Son of God incarnate, Lull makes resource of a universal language that integrates, rationally, the elements necessary for the comprehension of a religious experience aimed at conversion. This is the reason for introducing the cross in the center of a circle, as it were an oriental mandala... it is a universal symbol, and Lull would use it also as a symbol of religious projection understood by the faithful of other traditions." Amador Vega, *Ramon Lull y el Secreto de la Vida*. p. 32. Translation from the Spanish by the author.
10. *Ramon Lull, Obres Essencials*, Barcelona, 1957. p. 586, 1. Quoted also in Amador Vega, *Ramon Lull y el Secreto de la Vida*, p. 83. Translation from the Spanish by the author.
11. "Here is marked a combined road, where the amazing thing is that science represents the ascending discourse of the faculties of the soul, reaching the highest place they are allowed; *amancia*, or the 'science of love', will be reserved to the tortuous descent that has as model Jesus Christ." Amador Vega, *Ibid.*, p. 52. Translation from the Spanish by the author.
12. Ramon Lull, *Art Amativa*. *Ibid.*, p. 52. Translation from the Spanish by the author.
13. Philip Rawson, *Sacred Tibet*. The author has used—translating back to English—the Spanish translation, published as *El Tibet Sagrado*. Ediciones del Prado, Madrid, 1995, p.90.

- 14 Ramon Lull, *Ars Brevis*, II, , Fig. 1. An abridged reproduction of the *Ars Brevis* and other fundamental works of Ramon Lull are included in Amador Vega, *Ramon Lull y el Secreto de la Vida*. P. 248. Translation from the Spanish by the author.
15. Redrawn from a photograph of the original, published in Amador Vega, *Ramon Lull y el Secreto de la Vida*, p. 79.
16. "In this *Ars*, we put an alphabet so as to make figures with it, and know and mix principles and rules for the search of truth... And certainly it is necessary to memorize said alphabet, otherwise the student of the *Ars* will not be able to use it properly." Ramon Lull, *Ars Brevis*, I, § 1. *Ibid.*, p. 247. Translation from the Spanish by the author.
17. Ramon Lull, *Llibre de contemplació en Déu*, 174, § 22. *Ibid.*, p. 162. Translation from the Spanish by the author.
18. "But, in the first place, it is an art of transformation, founded in the capacity of the human mind to alter propositions following the logic within syllogisms: given a subject, find or discover (invenire) all the possible predicates and vice-versa. The idea is to be able to find, in only one book, everything that can be thought out, from the Supreme Being to the smallest part." Amador Vega, *Ibid.*, p. 85. Ramon Lull explains an example of his circular figures and its functioning of in the *Ars Brevis*:
 "The first figure is A. This figure contains within itself nine principles, kindness, greatness, etc., and nine letters, that is to say, B, C, D, etc. This figure is circular, so that the subject can be changed into predicate, and vice versa, like when it is said: kindness is great and greatness is kind, and so with the others. In this figure the student of the Art seeks the natural conjunction between subject and predicate, between definition and proportion, until finding a means for arriving at the conclusion." Ramon Lull, *Ars Brevis*, II, § 1, Figure 1. *Ibid.*, p. 248. Translation from the Spanish by the author.
19. "B: Kindness; C: Greatness; D: Eternity; E: Power; F: Wisdom; G: Volition; H: Virtue; I: Truth; K: Glory; L: Perfection; M: Justice; N: Extension; O: Mercy; P: Humbleness; Q: Domain; R: Patience. These are essential virtues and through their binary combination one hundred twenty chambers are formed with which it is possible to attain knowledge of God through 'necessary reasons.'" *Ibid.*, p. 86. Translation from the Spanish by the author.
20. C. G. Jung, "Patterns of behaviour and archetypes," *On the nature of the Psyche*. Taken from the *Basic Writings of C.G. Jung*, p. 83.
21. *Ibid.*, p. 84.
22. The writings published by Bruno on the work of Ramon Lull include: *De compendiosa architectura et complemento artis Lullii* (1582); *Animadversiones circa lampadem lullianam* (1587); *De lampade combinatoria lulliana* (1587); *De progressu et lampade venatoria logicorum* (1587); etc. Cf., Maurilio Frigerio, *Invito al pensiero di Giordano Bruno*, Gruppo Mursia Editore S.p.A., Milano, 1991, pp. 125 and following.
23. Concerning Leibniz's *De Arte Combinatoria*, E.J. Aiton points out that "Leibniz found inspiration in the Catalan encyclopedist Ramon Lull, whose "Great Art" consisted in a general method that allowed the formation of all conceivable propositions..." E. J. Aiton, *Leibniz. A Biography*, Chapter I, § *De Arte Combinatoria*. The author has used-translating back to English-the Spanish translation, published as *Leibniz. Una Biografia*. Alianza Editorial, S.A., Madrid, 1992, p. 41.
24. Entry on "Leibniz, Gottfried Wilhelm." *Encyclopedia of Computer Science*, Fourth Edition. Nature Publishing Group, London, 2000, pp. 980-981.
25. In the article "Cargo and cult, the displays of Thomas Hirschhorn," Benjamin Buchloh. *Artforum*, November 2001: XL, No. 3, p. 109.

Following pages: The Weight of the Sun, 2003. Installation view Douglas Hyde Gallery, Dublin





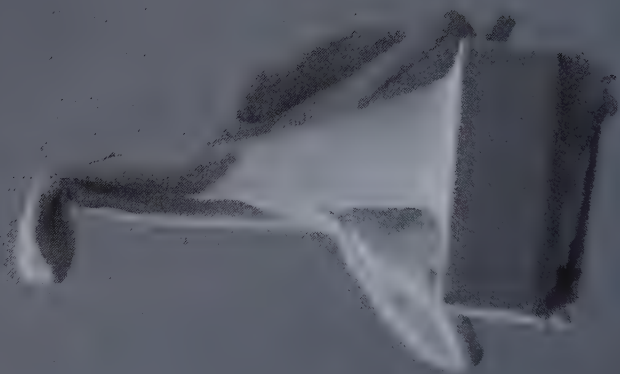






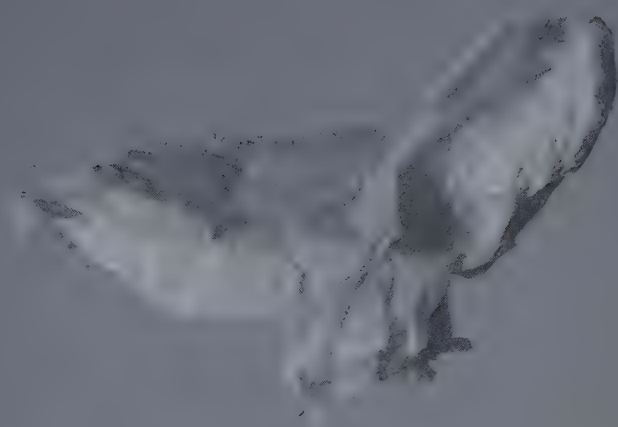


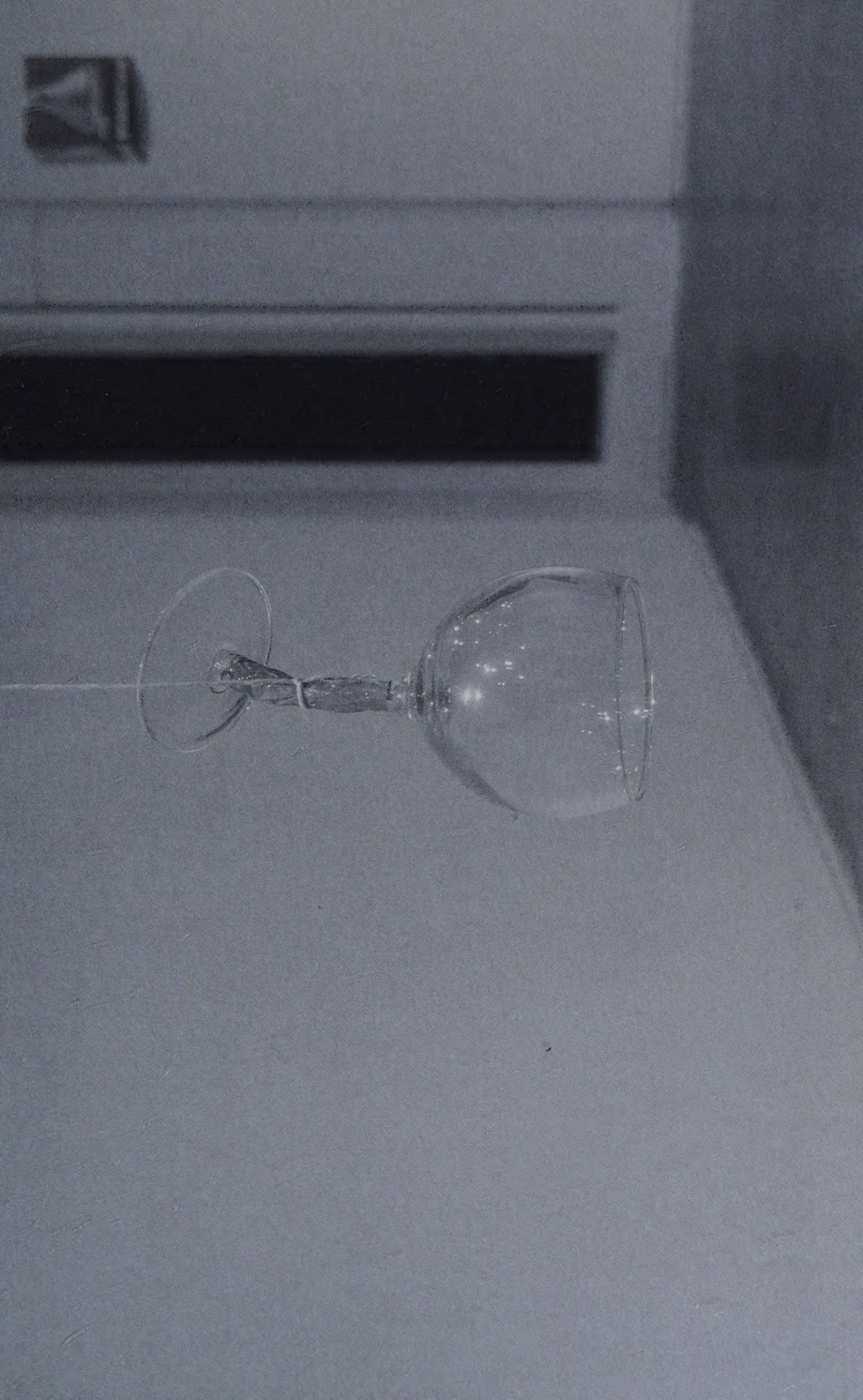


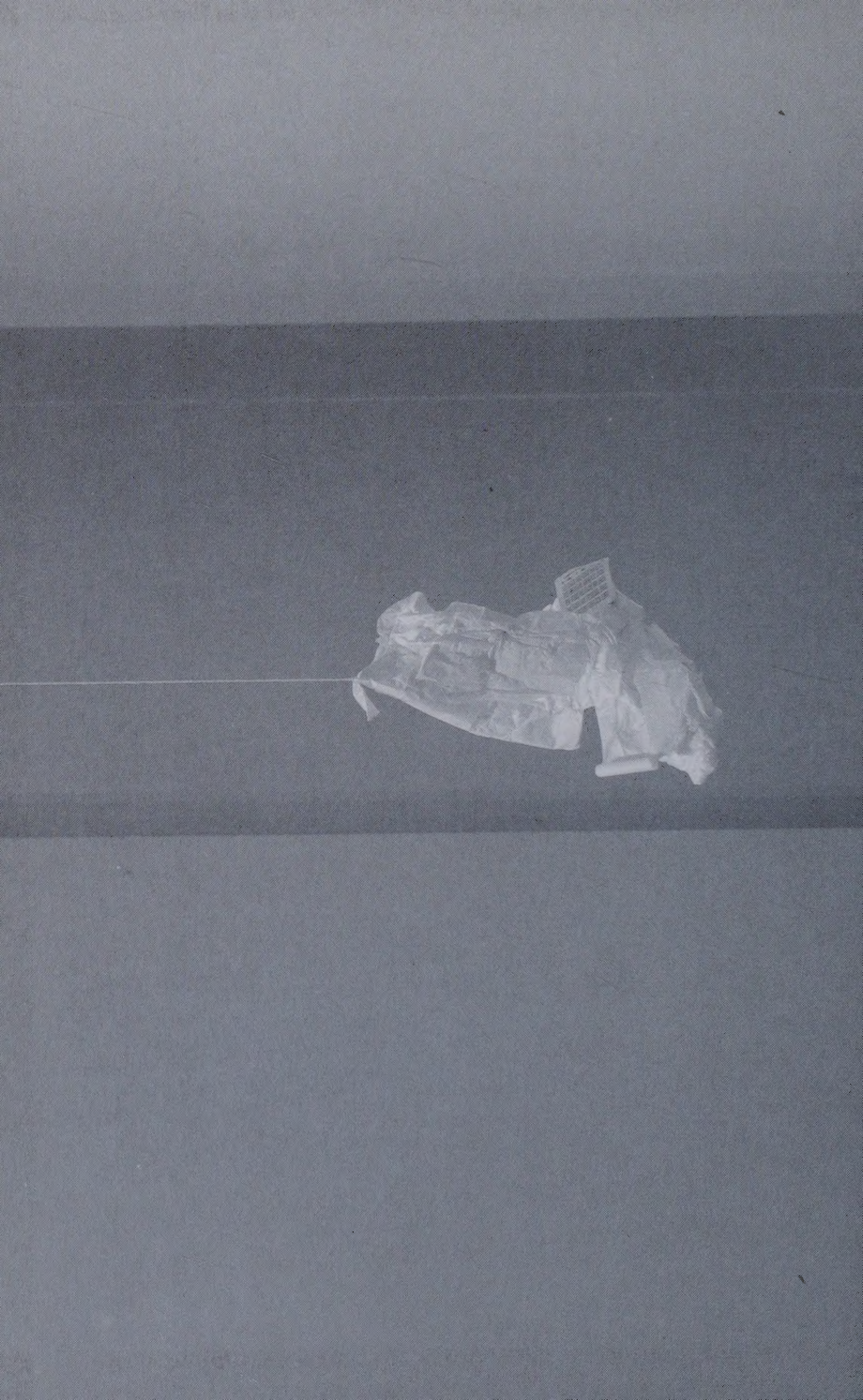


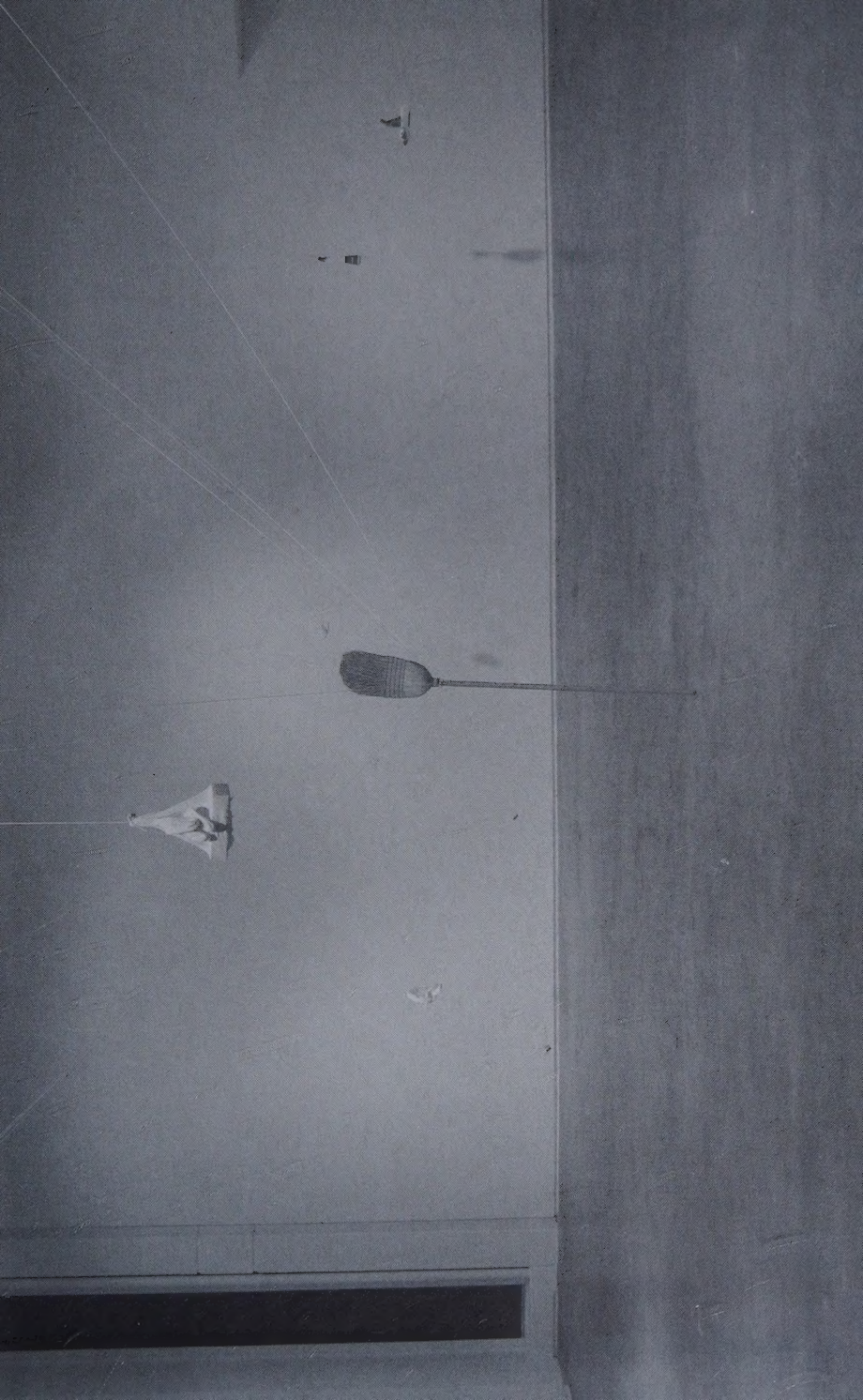














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