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23

Diagram Work

DATA MECHANICS FOR A TOPOLOGICAL AGE

Dear Reader

Cynthia C. Davidson

In September, as everyone in America but me seemed to plan their lives around the televised home-run-record race between Mark McGwire and Sammy Sosa, a small item appeared in the *New York Times* TV Notes column about baseball wreaking havoc with the networks' new prime time season. Apparently Fox had canceled a highly promoted "King of the Hill" in order to air a baseball game that became uneventful when McGwire failed to hit a home run. The *Times* quoted David Hill, chairman of Fox Broadcasting, as saying, "Network television has become all about *event-izing* programming" [italics mine]. In other words, the event and the potential of the event to produce the unexpected, that is, the "never-seen-before," attracts viewers to a medium that, with the proliferation of choice made possible by cable and satellite TV, is struggling to keep its traditionally large audiences.

Hill also claimed that NBC "added an hour to the [Emmy Awards] telecast to make it more of an event." This raises questions about just what constitutes the idea of event today, and makes apparent television's manipulative aggrandizement of an event in order to attract viewers with its seeming importance. Of course ABC television has made an event out of "Monday Night Football" for years, with a bearded country and western singer bellowing, "Are you ready for some football!?!" as if the battery of games that played across the set on Sunday never took place. The event structure of the Monday night game, which weekly attracts more television viewers than any other sports program, seems to erase the value of the games that preceded it.

"Event-izing," to be truthful, is something ANY was predicated on when we began publication in 1993, although we didn't use that term. ANY wasn't just any magazine but a magazine that produced live events in order to be perceived as an event itself, with singularly focused, thematic investigations of architecture. The staged event was a way to attract attention and, in publishing, a way to establish difference from other journals.

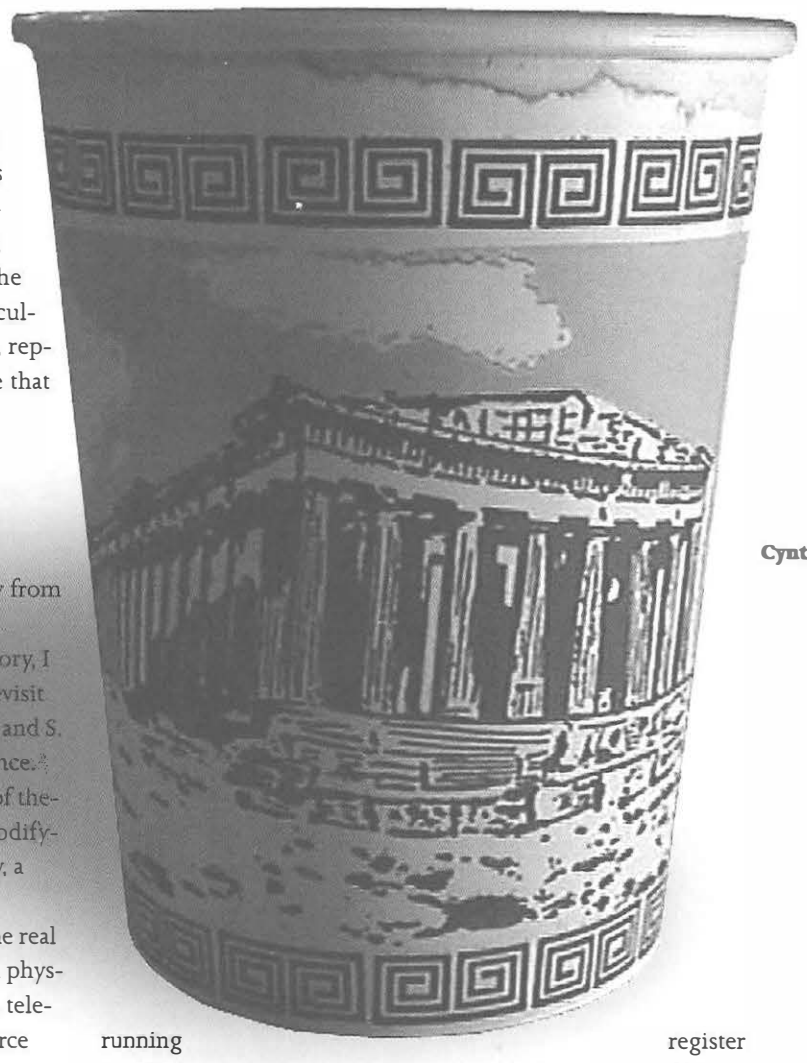
In late September, the theorist (and former football player) K. Michael Hays led a Wednesday night event called "Architecture Theory" to introduce the book *Architecture/Theory/since 1968* at Columbia University. The evening was a sprawl of personal reminiscences punctuated with random statements on theory, all of which served to herald release of the 808-page tome. Most of the speakers were represented in the book, hence for the audience, the event was a little like seeing history in the making. The event of the book itself is its own kind of history, one that not only suggests a critical path for reading architecture theory since 1968 but that also begins to carve out a history for the journal *assemblage*.

Coincidentally, if not ironically, the "end" of *assemblage*, the critical theory journal that Hays has edited since its founding in 1987, was also "announced" this fall. Not with an event or any kind of fanfare, but through the grapevine. Yes, Hays told me, the editors had agreed to end publication with number 41, which will occur sometime in 2000. As Joan Ockman writes in *Architecture Culture 1943–1968*, the companion volume to *Architecture/Theory*, "History is as much a matter of arrivals as departures." In our fast moving culture, even a pending departure two years hence signals the beginning of a history. Since nearly every *assemblage* editor is included in the book, the journal's value as an event is established even before its demise.

In his introduction to *Architecture/Theory*, Hays, as Ockman before him, is clearly aware of the place of such an anthology in history. He writes: "Though I believe that the most important texts of architecture theory are included here, I have not tried to reproduce the most used texts, or anthologize history 'as it really happened.' Rather I have rationally reconstructed the history of architecture theory in an attempt to produce . . . the *concept* of that history – which is a quite different matter." Regardless of whether Hays produced *the* concept or *a* concept, with his and Ockman's books, architecture theory has its own history now, particularly in the U.S. The very fact of this "success" is causing it to grow increasingly apart from the building. In *Architecture Culture*, Ockman enlists Foucault's historical task of "questioning the document" to ask, "What is an architectural document?" given that "the relationship between written, graphic, and built record . . . is particularly intricate." Indeed, the movement of architecture theory away from the building and toward a practice in and of itself, for all of its value, increasingly overlooks the building itself; that is, it forgets to see the object/event that is the culmination of the writing, representation, and practice that theory tends to address.

In November, far away from television, sports, and, I thought, architecture theory, I had the opportunity to revisit Brunelleschi's S. Lorenzo and S. Spirito churches in Florence.[2] There, Hays's definition of theory as "an appetite for modifying and expanding reality, a desire to organize a new vision" resonated with the real live event of what I could physically see – Brunelleschi's telescoping spaces, which force perspective on the viewing subject. Standing on the center line at the back of the nave of S. Lorenzo, I witnessed mathematics in solid and void, proportional systems worked out to achieve perspectival perfection. Walking through a side aisle, the paired pilasters and columns flickering in and out of my peripheral vision, I came to the crossing, where Brunelleschi suddenly adds a rectangular piece, a kind of slot, to accommodate the required number of chapels and support the dome above. This seeming anomaly alerted me to the taut rigor of the gray stone on white walls, and especially to Brunelleschi's clear "desire to organize a new vision."

Then wending through the Vespa-filled streets of Florence and crossing the Arno one comes to S. Spirito, one of Brunelleschi's last works, one seemingly without anomalies. Still mathematically precise, the white walls are now lined with half-round chapels framed by gray stone pilasters that recede into each space, creating a perspectival depth that fools the eye. This is a far richer work than S. Lorenzo, the eye dancing through the enfilade of columns that marches continuously around the space. As the historian Peter Murray writes, "The splendid spatial effect created by the great ring of columns running round the whole church is perhaps hardly to be appreciated except by actually walking through it," to which I would add, "and by actually seeing it." Between 1419, when construction of S. Lorenzo was begun, and 1434, when the plans for S. Spirito were approved, Brunelleschi developed his mathematical proportioning system to include a spatial complexity evident in the later church. One feels the difference upon entering S. Spirito; but it is important also to *see* the difference. As Murray writes, Renaissance architecture does not evoke the awe of the Gothic cathedrals; in Renaissance churches, one has to know what one is looking at. "Renaissance architecture must be experienced as architecture."



As busloads of tourists would testify, however, viewing architecture as architecture is not an event in a media age; it's seeing a Donatello or a Michelangelo, anything by the A-list of historic architects and artists. These same tourists are the audience for the 20th-century TV stars who struggle to maintain their prime-time ratings against television's event-izing (unless, like Jerry Seinfeld, your show becomes an event). For today, not only architecture but even media is viewed in a state of distraction. It requires nothing less than an event to focus our attention, an event to register the fleeting moment between past and future. Architecture has traditionally provided a stage for events, but with media constantly looking to event-ize, architecture is on the verge of becoming the event itself, that is, the spectacle.

This cannot be what Bernard Tschumi had in mind when he wrote *Event-Cities* (1994), where "Architecture is as much about the events that take place in spaces as about the spaces themselves." Architecture's response to media event-izing has been to turn away from theories like Tschumi's and toward the spectacle. This is architecture not with a desire for a new vision, not the architecture as architecture of the Renaissance, but architecture made to seize the moment. History will judge the legacy of the building as spectacle, but whether or not architecture is now playing to the mediatic din is a pressing question for today.

23.6 Letter from Athens

Christian Hubert

The author at the Acropolis.

As a boy, I sometimes wondered whether just looking at an object could wear it down. Was the decay of old buildings due in part to the fact that people had been looking at them for so long? If Superman's vision was the exaltation of masculine ocular power, mine was melancholy.

Before visiting the Acropolis for the first time, I wondered: Has the Acropolis, like so many other tourist destinations, been so utterly transformed into a "photo opportunity" that it cannot possibly live up to the reproductions of its image? Would I be underwhelmed by the actual experience of seeing the Parthenon and require an elaborate array of compensations – postcards, pictures, narratives?

During the past year I have repeatedly stood on the Acropolis. Every time it has seemed intensely real, not less than real. Yet, whenever I return to Athens, I seek a reassurance that the Acropolis is still there. What doubts do I seek to calm when I check to see if the Parthenon is standing undiminished since I last saw it, or if the hill of the Acropolis has finally given way?

This anxiety in relation to the Acropolis has its own elaborate lineage. In "A Disturbance of Memory on the Acropolis," written in 1936, Sigmund Freud described an episode of "derealization" – of *Entfremdung*, or estrangement – that he experienced upon arriving at the hill in 1904 at the age of 48. Standing on its heights, Freud felt for a moment that he had never fully believed the Acropolis really existed. Yet he did not remember actually doubting its existence, so where did this feeling of repudiation come from?

Freud's reaction to this experience took the form of a split in his sense of self – between one who felt the residue of disbelief and a second who wondered where this feeling came from. Freud's analytic "second self" concluded that this disbelief was an expression of his feelings of guilt – that he, the son of a relatively unsuccessful Jewish trader, arrived where his father could only have dreamt of being, a place associated with the Aryan historical memory of Hegelianism and neoclassicism rather than the more tribal forms of his upbringing. In this way, Freud's visits to the classical world constituted an oedipal transgression, both a repudiation of his origins and an occasion for self-examination.

The world of antiquity provided Freud with "images of thought" that he would synthesize into a philosophical anthropology based on a close identification between the ontogeny of the individual and the phylogeny of species. He sometimes described civilization as "a peculiar process which mankind undergoes . . . comparable to the normal maturation of the individual" (*Civilization and its Discontents* 96, 98). In later years, Freud recognized that his desire to visit Rome had been sparked by a description of his father as the butt of anti–Semitic bullying. The trip itself was repeatedly postponed, but Rome appeared repeatedly in Freud's dreams. If the prospect of a trip to Athens was not the explicit subject of dreams, like the trip to Rome, it still disturbed his psychic equilibrium. Freud described how he and his brother experienced a moment of depression in Trieste prior to taking the boat to Athens, and Freud's episode of derealization, like dreams, parapraxes, and the experience of the uncanny, presented him with symptoms of unconscious, "primary" thought processes, thus providing Freud with the stuff of his own self-analysis.

In recent years, the issue of memory has become a contentious one for psychoanalysis. Controversy over Freud's renunciation of the seduction theory, with claims that he suppressed evidence of children's sexual episodes, has coincided with both public fascination with child abuse and an increased skepticism about the accuracy of repressed memories. The postmodern preoccupation with telling stories has made it difficult to separate historical truth from narrative truth in psychoanalysis, and a more pragmatic, rather than representational, approach to personal memory suggests that whatever "works for you" is all you should hope for. The elaborate "work" of myth in ancient Greece takes on a greater fascination in an era when representation and truth have lost some of their purchase. While it is commonplace to think of Greek mythology as a complex projection of the human psyche, in Athens one senses the social "imaginary" of myth at work and observes its historical dimensions. The Acropolis, the theaters at its base, and the *keramikos* are concretizations of social memory, of the emergence of history from myth. They articulate the myth of the autochthonous, of being born of the earth. But like the hill that tells a story of the emergence of human civilization from nature, the movement from myth to history now looks more like a two-way street.

If images of the Parthenon circulate comfortably in the postmodern iconographic economy epitomized by the New York coffee cup, the connections between the buildings and the hill of the Acropolis resist all derealizations of the image. Like the buildings, the hill itself seems both built up and eroded. It resists facile distinctions that would draw clear boundaries between natural form and the work of culture. It is this relation to the rock of the Acropolis that makes the Parthenon effect a link between earth and sky, between cultural ideal and primordial genius loci, and which links its present condition to the abyssal time of myth. Yet even while retaining its ties to the earth, the Acropolis gives a most powerful experience of the world of art. Passing through the propylaea, one enters into a world of stone, sky, distant mountains, and water. This is the power of the architectural experience – not merely the interior of a building or an urban space, but a whole landscape monumentalized and giving coherence to myth and memory. Even in the postmodern moment, the Parthenon effectively symbolizes the highest ambitions of human culture and marks a decisive step in its evolution.

These days, the Parthenon is in a perpetual state of what the Italians call *restauro*, a kind of bureaucratic and technological limbo. Cranes, scaffolds, and a few yards of track attest to grandiose claims of and listless efforts at reconstruction, to a process whose pace barely exceeds the entropic effects of time, decay, and pollution, and whose completion is in more than one way unthinkable.

More than anything else, the Acropolis expresses the struggle to endure in time. What was so quickly built in the 5th century has gloriously endured what might with some irony be called a series of "strong misreadings" through history. The Parthenon shows the scars of war, of deface-

ment in the name of religion, of vandalism in the name of national culture, the effects of weather, and, more recently, of pollution. Yet somehow it still radiates "the bloom of perpetual newness," which, Plutarch noted of the buildings, "makes them ever to look untouched by time, as though the unfaltering breath of an ageless spirit had been infused into them." Ironically, the intense whiteness of its marbles today is an effect of aging, not of newness.

While it is hard to say that the Acropolis looks untouched by time, it is not really a ruin, not a shadow of a former self. The presence of the Parthenon in the present is what is so striking. Insofar as the Parthenon has become a cultural symbol, this presence may be an idealized one, but its power today is strangely caught up in its maintenance of presence in time.

The struggle against time and in time has always been the subject matter of the site and its buildings and in fact lies at the heart of any idea of monument. The frieze of the Parthenon represents scenes of *agon*, or struggle, that even in 5th century BC were meant to stimulate historic memory and to mark the continuity between men and their gods, as connected by the heroes. The act of building itself symbolized the victory over the Persians, while the iconography of the building connected that struggle to the Greek assertion of humanity. The metopes of the Parthenon (chiseled off, for the most part, in the early Christian era, when the Temple of Athena was converted into a church of Our Lady) developed a narrative that established the supremacy of Athenian democracy and provided the source of the Panathenaeic Festival. It starts with the battle of the gods against the giants, continues through the battles of the Lapiths and Centaurs – a confrontation between human values and the bestial power of violence without reason – and ends with the battle of the Athenians against the Amazons, a story halfway between history and myth.

Harold Bloom has developed a theory of poetic *agon* to describe the struggles of poet-heroes against their father/rivals. For Bloom, every modern poet must confront the discovery that poetry is both external and internal to himself. He must experience the shame and "terrible splendor of cultural heritage." Constructing his own macho-Freudian mythology, Bloom describes how "strong" poets wrestle with their precursors, even to the death, after glimpsing the "primal scene" of the poetic father's coitus with the muse. For Bloom, the modern culture of revisionism is based on creative or "strong" misreadings, on misprision, swerve, or *clinamen*, and the strong poet is the one most successful at reading himself in the texts of his fathers. Small wonder that these theories hold a particular fascination for those who would set themselves up as "Big Daddies" in contemporary architecture.

Historical genre paintings of the Acropolis always show Athens as puny, disordered, and dirty in comparison to the Parthenon. Today Athens appears from the Acropolis like a vast field of broken stones – instant rubble, a field of debris with its own dirty carpet of brown air. In many ways, modern Athens is like Los Angeles – an automobile city whose public space has imploded into the space of the car and the cellular phone – leaving the Acropolis to the tourists. In the city's vast and sprawling extension, taxis function as an intermediary form of transit, neither public nor private, carrying several passengers at once. Taking a taxi is somewhat like being held hostage. Each trip follows a kind of "donkey's path," which eventually takes you to your destination according to the driver's own idiosyncrasies and the destinations of the other passengers. The roads are congested with cars, while scooter and motorbike traffic flows through a different dynamical space altogether, gliding in and out of the lanes of cars like small predators moving through a herd of grazing animals. I spent most of last summer in Athens, working primarily at my job site. After a few weeks with a rental car, I tried joining the two-wheel pack. It was exhilarating and far more aggressive than driving a car. At the end of the day I would return from the job site covered with the oily film of pollution, eager to swim in the hotel pool, filled with a Futurist's sense of satisfaction.

Most of Athens seems to have been built in the 1960s and '70s. The architecture is, for the most part, a bureaucratic modern style, dating from the regime of the colonels. The buildings are generally a dirty white. Perhaps one day they will be recuperated into new narratives and gain historical credibility as urban "texture," but for the most part they give modern architecture a bad name. Of course there are exceptions. The area around the central markets gives a 19th-century flavor to downtown and still reminds one of the dependence of the city on farming, fishing, and the slaughter of animals. The historicist style of government institutions and museums asserts a link to classical Athens, even though this style is a projection of German neoclassicism. One can understand why postmodern Greek architects are so little tongue-in-cheek about the politics of classicism as traditional building. On the flank of the Acropolis is a miniature Cycladic village called Anafiotika, built in the 19th century by the workers employed in the construction of those same institutional buildings. Anafiotika is a site of cultural and social conflict: an eyesore for those who would monumentalize the Acropolis, and a squatters' enclave that is now gaining some legitimacy while the politics of vernacular and local building is rising. To explore those politics would lead into the complexities of nationalist conflicts in a contemporary society still more marked by Turkish influence than most Greeks would care to admit. A giant Greek flag flies on the "prow" of the Acropolis, marking it as a site of national identity.

My favorite time to go up on the Acropolis is first thing in the morning, when it is nearly deserted, but the most beautiful moment is still the last hour before sunset, when the gleam of the setting sun is reflected in the Aegean. Then, the temples seem to give human measure to the rhythms of nature, for their beauty is only heightened by the dramas of sunrise, sunset, full moon, rain, and shadow. To the modern eye, the play between the monochrome stone and the changing light seems so integral to the beauty of the temples that it is hard to imagine them colored, complete, and new.

On top of the Acropolis, I sometimes think of the seemingly interminable construction of the Getty Center, that "wannabe" temple in the neo–Mediterranean. Perhaps a course of accelerated aging would bring the Getty into a more symbiotic relation with its natural context, hastening the inevitable erosion of the architect's will to dominance. Perhaps this is the source of my own anxieties about the Acropolis – the discomfort of acknowledging the patriarchal structures of contemporary architecture and the oedipal hatred embedded in the structures of "strong misreading." My own private patriarchal loop connects the Getty to the Acropolis: before returning to New York a few years ago, I worked on the Getty for superego Richard Meier, himself a truant son of Le Corbusier, damning him through sterile praise.

The young Le Corbusier used his visit to the Acropolis to confirm his own architectural ambitions. In *Voyage d'Orient* of 1911, he described the beauties of monochromy, the precision of a construction without apparent joints, and the terrible power of the Parthenon as "a machine which grinds and dominates." Le Corbusier experienced a certain tyranny in the Parthenon, references to which he subdued in later drafts of his travel narrative. He described his visit as a combat from which he emerged in some sense the loser, forced to concede to the mastery of its harsh poetry. In compensation, he sought to conceive of it outside reality, as the "heroic vision of a creative mind." And as a prelude to an announcement of his own ambition, he addressed himself to "those who, while practicing the art of architecture, find themselves at a moment in their career somewhat empty-headed, their confidence depleted by doubt before that task of giving a living form to inert matter." These kindred souls, he claimed, would "understand the melancholy of my soliloquies amid ruins – and my chilling dialogues with silent stones."

Like Freud, Le Corbusier experienced a listlessness before his first visit. He put off the climb until the end of his first day in Athens, making a thousand excuses to his friend as to why he would not go up just yet. Years later, Le Corbusier invented his own disturbance of memory on the Acropolis. Arriving late to the 1933 CIAM conference in Athens, he disarmed his colleagues thus: "Oh dear, I forgot all about you. I've been on the Acropolis."

P.S. In my vast ignorance of Greek civilization, I realize that these thoughts are more like ruminations on a Rorschach pattern. When I was about twelve, I was given a Rorschach test, and to the visible surprise of the school psychologist, I recognized the New York Public Library with its flanking lions in one image after visualizing the henchmen of death and other fearful symmetries on previous pages. What seemed a shocking change of register, between primal fears, archive, and monument, now no longer seems so strange.

Gender Trouble for the Doric order.

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Letter from Naples

Saint Vesuvius, or the Volcanic Baroque

23.8

Karen Bermann

ALL PHOTOS ROBERT NINO

the Via del Duomo (Pl. G, 3, 4), a broad street cut through the densely packed houses of the old town. The *Palazzo Cuomo* (Pl.G, 4), on the right, contains the *Museo Filangieri*, a collection of weapons, majolica, porcelain, enamels, and pictures. Adm., see p. 329.

We now return and ascend the Via del Duomo to the main entrance of the cathedral. The side-entrance in the Via Tribunali has a column in front of it recalling the aid ren-

We now return and ascend the Via del Duomo to the main entrance of the Cathedral of San Gennáro (St. Januarius), built in 1294–1323. It has been renovated several times since the earthquake of 1426. The side-entrance, in the Via Tribunali, has a column in front of it recalling the aid rendered by St. Januarius during the eruption of Vesuvius in 1631. On the chief altar are a silver bust with the head of St. Januarius, Bishop of Beneventum, who suffered martyrdom under Diocletian in 305 ... and, in the tabernacle, two vessels with his blood. The liquefaction of the blood, which, according to the legend, first occurred when the body was brought to Naples by Bishop St. Severus in the time of Constantine, takes place twice annually (in the evening of the 1st Sat. in May and on Sept. 19th; reservation of seats in the sacristy). According as the liquefaction is rapid or slow, it is a good or evil omen for the year.

—Karl Baedeker, *Italy from the Alps to Naples, Abridged Handbook for Travelers* (New York: Chas Scribner's Sons, 1928), 400.

This city is carbonized. It smells of fire, it has passed through war. A slick black powder coats everything: the forests of scaffolding, the stones of the street, the doorknobs, the fish bones piled up against a wall, the newspapers and candy wrappers that the wind has wrapped around our legs. Our eyes are streaming. Inside our mouths, grit. The blackened faces of the churches are like tenement buildings after a fire. Inside, the baroque is seething: a liquid geode, an animal god.

Yesterday Naples was amazingly quiet, a beautiful but ominous absence of street life as we walked through the center, metal shop grates pulled down tight. The specific silence of Sunday in a city. We walked up streets between vertiginous walls that enclosed us on either side. High above the street, laundry was drying on hundreds of clotheslines, releasing a faint steam. A metallic gold light fell – in some places the air was so thick with dust that the light materialized into rays, you could almost take it into your mouth. The streets were so densely packed with scaffolding that it could have been night. Night without streetlights. We couldn't understand the density of the scaffolding – a tight, three-dimensional weave that ran the length of a street and filled its twelve-foot width, pressing against the opposing walls as if it were buttressing the buildings. Or had it simply been abandoned long ago and somehow proliferated, like vines? Vines grew over and around it, wrapping themselves around the metal structure, a blackish veil.

The baroque: a hallucination that erupts from the center of the dark. As soon as you leave the train station it begins to conjure itself up, to splay itself out, to make its fabulous appearance. The porn video stand outside the train station is a gold, white, black eruption of flesh, a *mostra* of body parts emerging into light, at once substantial and cloudlike. The piles of meringue in a pastry shop are brilliantly white, painfully sweet, gritty, changing in an instant from voluptuous form to vapor. The illuminated flesh, the cloudlike sugar, are all fragments of desire stolen from a baroque church to be eaten or sold as contraband on the street. Overhead, the clouds themselves parade across the sky, glittering and joyful like movie stars emerging from limousines on opening night. They roll, they slide, they revolve. They too are signs, escapees from the place to which the baroque aspires.

A man walked in frightening marionette fashion up and down in the Piazza Gesu Nuovo, speaking repetitive rhythmic nonsense in a loud, mechanical voice. He swung toward people as they walked by, followed them, called after them until they were out of range. It was a performance of ornate control and ornate wrongness. When we passed close by him, I heard a horrid, mechanical creaking, like wooden joints, relentless and forlorn. Was it a prosthetic limb, perhaps a wooden arm? He was swinging one arm in a deliberate way, as if to make noise out of it. This thought frightened me. Mark thought that he was making the noise with his jaw. That frightened me more. It was not speech that errupted from his mouth but something involuntary, like a vapor; the mouth an opening like any other, a point of release.

In the Church of Gesu Nuovo, there is a wall filled with busts of saints, each painted, each gesturing, each resting on a glass-faced reliquary box packed with bones.

My guidebook says, "See Naples and die." I have my own sense of what that might mean. Something here exerts a force – like hunger and its opposite, a simultaneous constriction and engorgement. A struggle is taking place. I feel as if my blood has changed into something thicker and darker, a concentrate pushing through the narrowness of my veins, looking for a way out.

Cigarette butts and condoms fit so neatly into the spaces between the cobblestones, as if they were always meant to be there. Space is relentlessly filled up. Cobblestones packed with garbage, streets stuffed with scaffolding and laundry. This density puts the body under pressure. Veins and muscles are in compression. Breath is forced out of lungs. Just before it strangles, the street erupts, gasping, into the delirious space of the piazza.

Mark said, "The garbage in Naples has a job to do. In Florence, the garbage has no job. In Rome, the garbage is ornamental, that's its job. In Naples, the garbage is structural. It holds things up, it coheres, it becomes rigid, it expands to fill every joint, it reinforces every crack, it exerts a force. The walls would fall down if they removed the garbage."

The baroque appears like the great outpourings of white steam that used to wake me up in the middle of the night on East 11th Street in New York. It was the Con Ed plant letting out steam. It happened in winter, an enormous rushing sound all at once; I'd sit up in bed and through the icy window see the pillars of white steam shooting from the pillars of the stacks. Erupting in great boiling clouds. In Vienna in a high baroque church there were angels and clouds, enormous white spheres, pouring from the tops of columns. An extension of the idea of the capital – an organic explosion at the top of the column, a vertical thing seeking the light, the flower erupting from the stalk, the blood flowering from the vein. White columns, white steam, angels and clouds, an explosive heaven emerging. Then all of a sudden, in a moment that felt hallucinatory in its clarity, I saw the gas chambers and the souls that entered the sky by way of the smokestacks.

Saint bones, fish bones, incense, the churches erupting like flowers or storms, like flesh or clouds, like Vesuvius in the middle of the night, the rolling ecstatic presence of something so alive that drives and pounds its way up through the ground; the presence of something dead that, released from gravity, ascends, winding its way up to the light.

We saw street shrines with tiny ceramic figures burning in hell, red-painted clay flames surrounding them. The flames shot up around their backs so that they looked like wings coming out of their shoulders.

The mystery of the melting of the liquid is not to be disposed of as airily as some people imagine ... A Professor of Chemistry at the University of Naples not long ago (1925), placed a thermometer on the altar, first without, then with, the permission of the priests, and a friend of mine, at that time a student, helped him with his experiments. The melting took place sometimes at a temperature of 18–20 Cent. (65–68 Fahr.), sometimes at 15–17 Cent. (59–63 Fahr.), once at 3 Cent. (38 Fahr.). Together they tried every chemical formula and found only one that gave anything approaching satisfactory results, but it would work only at blood heat, a temperature never to be found in the church or on the altar. The liquid often continues to boil after the miracle. My friend has himself touched the silver stand and found it quite cold after the boiling. Then there is the difference of time required for the melting and the difference of the color of the liquid, which ranges on different occasions from rich chocolate to blood red, to be explained. There is no conscious trickery by the clergy.

—Lacy Collison-Morley, *Naples Through the Century* (1925), quoted in H. V. Morton, *A Traveller in Southern Italy* (New York: Dodd, Mead & Company, 1969), 237.

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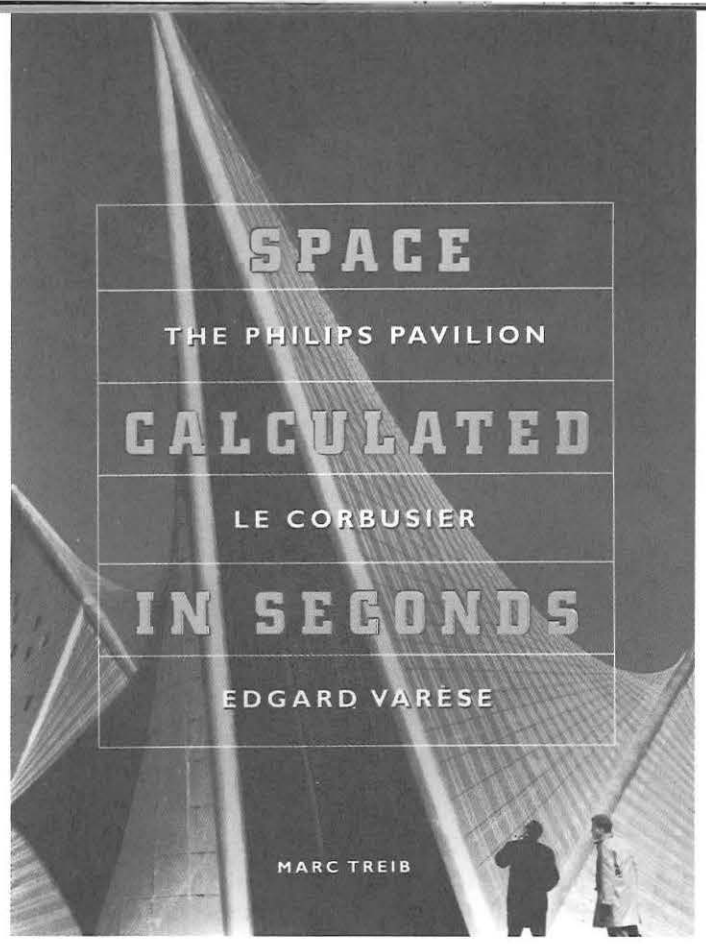


23.10

Book Review

Allen S. Weiss

Marc Treib
Space Calculated in Seconds: The Philips Pavilion, Le Corbusier, Edgard Varèse
Princeton, NJ: Princeton University Press, 1996
$49.95hardcover

As Marc Treib reminds us in his superbly documented study, **Space Calculated in Seconds**, Le Corbusier proposed in 1950 a "Synthesis of the Major Arts" pavilion for the Porte Maillot in Paris, which would have concretized his newfound concern for the integration of the arts, stating that "the major arts are empty, divided and isolated; the world is waiting: in fifty years architecture has left the stage of regeneration; a desire for synthesis is apparent, a desire for harmony." (xv-xvi) Such synthesis is an age-old quest, and certain subsequent projects, notably the 1958 Philips Pavilion collaboration, can be placed within the tradition of the total work of art, the **Gesamtkunstwerk**. The early period of this genre is exemplified by Monteverdi's opera, **L'incoronazione di Poppea** (Venice, 1642), and by the great garden festivals of the French court, such as **La fête de Versailles du 18 juillet 1668**, which combined music, theater, cuisine, waterworks, and fireworks into a unified, and indeed narrativized, whole; it was given its generic name, **Gesamtkunstwerk**, at its moment of apogee in Wagnerian opera; and it found a new form in the cinema, which in the 1920s was hailed by numerous members of the avant-garde as potentially offering the ultimate synthesis of the arts. The Philips Pavilion, conceived for the 1958 Brussels World's Fair, was to have been a culmination of this tradition, bringing it into the new electronic realm. The **Poème électronique**, as Le Corbusier named the work, was a collaboration between architects (Le Corbusier and his assistant, Iannis Xenakis), composers (Edgard Varèse and Xenakis, in a second role), filmmakers (Jean Petit for the scenario, Philippe Agostini for the montage), and an engineer (Hoyte Duyster of the Strabed Company).

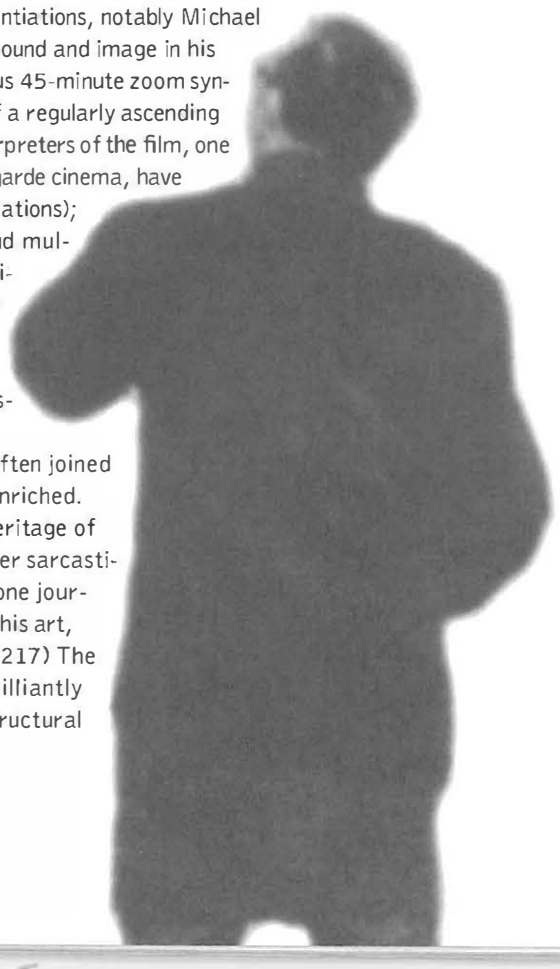
Le Corbusier had always been concerned about relationships of space-time, space-sound, and site-specificity in architecture, as is attested to in particular by the "space activated by light" (100) that motivated the design of his 1952 church of Notre-Dame-du-Haut at Ronchamp, where – as he wrote earlier of a new architectural ideal – "a boundless depth opens up, effaces the walls, drives away contingent presences, accomplishes the miracle of ineffable space." (100) The **Poème électronique** was conceived as such a new form of spectacle, inspired by Le Corbusier's ideals and motivated by the Philips company's desire to valorize its state-of-the-art electronic equipment. Le Corbusier conceived the ground plan of this building on the model of a human stomach, a conceit evoking a probably unintended Rabelaisian element concerning the flow of people who would experience this multimedia invention. Yet, unlike Frederick Kiesler's Endless House, which was planned as a surreal, organic, ambiguously zoomorphic form inside and out, Le Corbusier's pavilion was to combine the organic and the geometric, for upon the curves of the ground plan Xenakis was given the challenging yet thankless task of planning a viable structure coherent with Le Corbusier's style. The solution was also found through curves, in the regular, mathematical forms of the hyperbolic paraboloid, an archetypically modern construction form, based on the possibilities of steel and poured concrete, familiar for over a century in the catenary curves of suspension bridges. For Xenakis, the resolution of this problem stemmed from an inspired melange of his architectural, mathematical, and musical training. Xenakis had studied in Olivier Messiaen's famed composition class, and his first published piece of music, **Metastasis** (1953-54) was scored for 61 instruments, each playing a different part. It is notable in the present context that not only did each member of the string section play individual glissandi, but all of the musical parameters – the structures of intervals, duration, dynamics, and timbres– were determined by the application of geometrical progressions, especially the golden section. Indeed, the graphing of these glissandi in the score prefigures the architectural drawings for the pavilion. Though it might be suggested that the design limitations of the building were in some part due to the discrepancies between organic ground plan and mathematical elevation, the homologies established by Xenakis between sound and space, music and architecture, visibility, mobility, and mathematics, were a major accomplishment.

The glissando had a very specific role in modernist music: its concerted and exaggerated use served as one of the strategies – along with microtonal composition, non-European instrumentation, the inclusion of noise, the use of early electronic instruments such as the Theremin and the Ondes Martenot, etc. – to circumvent the limitations of the tempered scale that had ruled several centuries of European music. For the glissando in its purest form – an ascending or descending sound of unbroken pitch, possible on certain instruments such as strings and the slide trombone – contains all frequencies in its range. One of Varèse's earliest compositions, the 1922–23 **Hyperprism** – the title of which indicates his interest in the spatialization of music – was for an ensemble of woodwind and percussion, including a siren to add what he referred to as "beautiful parabolic and hyperbolic curves." More radically, he composed **Ionisation** in 1931, which called for 37 mixed percussion instruments and two sirens for 13 players. It was the first European piece composed according to indeterminate pitch (or what, in that epoch, was deemed noise), and the sirens produced distinct and striking glissandi. These concerns led Varèse to imagine a musical instrument in tune with his aural imagination, especially his fascination with the spatial trajectories of sound, and a musical structure as pure as the rock crystals that always fascinated him. For decades he had dreamt of, and his compositions prefigured – in their particular use of timbre, extreme play of amplitude, and indeterminate pitch – what would become electronic, concrete, and electroacoustic music. Le Corbusier's insistence that he compose the music for the Philips Pavilion finally gave him the material possibilities to compose his only piece in this genre, the **Poème électronique**, a site-specific, hybrid, multitrack work on tape that included electronically generated melodies, distorted organ music (the organ being symbolically appropriate, as it was a sort of pre-electronic "sound synthesizer"), industrial noise, human chant, and even fragments of his **Étude pour espace**, all emitted from a series of "sound routes" from several hundred speakers attached to the curves of Xenakis's hyperbolic paraboloid shells. Rarely has the metaphor of architecture as "frozen music" more accurately described a building.

The visual components of the pavilion were fourfold: a film, colored lighting effects, projected stenciled forms, and three-dimensional forms lit by ultraviolet light. The film, whose images were chosen by Le Corbusier, consisted of a series of stills that begin by evoking the progress of human civilization, a sort of cinematic "museum without walls," inspired by Malraux's recent theorization of the effects of photographic reproduction on art history and aesthetic perception; it continues with a representation of apocalyptic threats to humanity and culminates by proffering the ultimate solution to the world's problems, predictably following Le Corbusier's own theories of urban planning. Though the film (which no longer exists) was not a notable event in cinematic history, it does bear particular if oblique interest in its relation (or rather nonrelation) to Varèse's music. While the rapport between music and architecture in this pavilion is one of structural homology, the film is totally asynchronous with Varèse's composition, except that they both have the same duration. Thus the specific relations between the visual and the aural in this multimedia "collage" were totally fortuitous. The role of chance, controlled and otherwise, had been a crucial factor in modernist aesthetics ever since Duchamp's readymades and Breton's theory of objective chance; with the postwar availability of tape and electronic media, new dimensions would be added to the aesthetic of the fortuitous. Though the role of asynchronic discrepancies had already been profoundly investigated in experimental cinema (notably that of the Lettrists, as in Maurice Lemaître's 1951 **Le film est déjà commencé?**), the aleatory was then becoming central to contemporary avant-garde musical theory. The terms of the debate were set by the increasing musicological conflict between John Cage's global use of chance operations – with the goal of incorporating all sounds previously considered noise into music, thus dissolving the barriers between art and life – and Pierre Boulez's more restricted use of the aleatory, remaining firmly within the rubric of the European musical tradition, to radically transform serial, dodecaphonic music, such that all the musical parameters of the tone (pitch, duration, amplitude, timbre) are determined by a mode of controlled chance. A third model of chance operations, one that rarely entered the debate, was conceived by Xenakis: the application of mathematical models to musical composition, notably a method of composition based on the plotting of random events, entailing a "stochastic" or probabilistic mode of music. Xenakis integrated the diverse modalities of mathematics, music and architecture into all aspects of his work; in a sense, one might claim that his early music was in fact "frozen architecture" or "frozen mathematics." His composition for the Philips Pavilion, titled **Concrète P.H.** (P.H. abbreviating **paraboloïde hyperbolique**), which served as a sort of ambient music to mark the verbal introduction to the piece, was an example of **musique concrète**. This work, derived from electronically reconstituted recordings of burning charcoal – creating an aleatory pattern of tingling sounds, as in other stochastic systems, such as the grouped tones of crickets or raindrops – was an important composition in its own right.

This leads me to a minor criticism of this otherwise exemplary study. Treib unerringly details Xenakis's contributions to the project; indeed, there are many more pages on Xenakis than on Le Corbusier regarding the **Poème électronique**. Even given Treib's accurate statement of the reality of architectural firms – where partners often take credit for the work of assistants, a fact that created great tension between Le Corbusier and Xenakis – a critical study should extend beyond the limits of architectural realpolitik. While Xenakis's role is completely resuscitated in the body of the text, why is it that the subtitle of the book does not bear his name? And, given the pertinence of his musical theories, as well as their obvious interest for architecture, why is **Concrète P.H.** underanalyzed and denied its specifically musical existence? Indeed, the dust jacket announces, "This totally automated bombardment of color, voice, sound, and images was broadcast within a space of warped concrete shells, orchestrated by Le Corbusier and his colleagues into a cohesive 480-second program." Elementary arithmetic would have led to the sum of 600 seconds, given the addition of Varèse's eight-minute piece and Xenakis's two-minute composition. Though these are relatively minor points, it is true that the music of this collaboration, rather than the architecture (much less the film), has had the greatest reverberations and thus deserves closer scrutiny. Furthermore, given the concertedly multimedia nature of the work, it would seem that the profound interrelations between mathematics, music, and architecture established by Xenakis – who, after this project, was to nearly abandon architecture in order to concentrate on musical composition – might have been analyzed somewhat more precisely if greater attention had been paid to **Concrète P.H.**

The **Poème électronique** was a belated **Gesamtkunstwerk**. For at the very moment that Le Corbusier began, after World War II, to be concerned with such aesthetic synthesis, a radically new paradigm was being established, by John Cage and others, that would offer a new model of artistic collaboration: detotalizing, disjunctive, decentered, unhierarchical, aleatory. One of the inaugural events of this tendency was the famed 1952 Black Mountain College "concerted action," co-organized by Cage, in which disparate artistic events occurred (music, poetry, painting), sometimes simultaneously, sometimes successively – encounters ruled by unhierarchized chance. Produced six years afterward, the **Poème électronique** was an anachronism, of greater interest for some of its parts than for the sum of its parts. Though the Philips Pavilion as **Gesamtkunstwerk** may have marked the end of a tradition, several of its elements were sources of further aesthetic investigations: Varèse's **Poème électronique**, which remains a key work of early electronic music, is considered the culmination of the composer's lifelong musical quest to create new sounds in music, thus the fulfillment of the musical strategies prefigured in his earlier compositions; Xenakis's use of mathematical models in music led to his becoming one of the major experimental composers of the second half of the century; the saga of the glissando was to have many other instantiations, notably Michael Snow's extraordinary combination of sound and image in his 1966–67 film **Wavelength**, a continuous 45-minute zoom synchronized to a soundtrack consisting of a regularly ascending sine wave (a soundtrack that most interpreters of the film, one of the pivotal works of postwar avant-garde cinema, have yet to consider in its full musical implications); a number of new models of mixed- and multimedia works, from happenings, environmental art, and installation art to virtual reality, have expanded the notion of the now deconstructed **Gesamtkunstwerk**; and finally, the history of architecture itself, where the organic and the mathematical have often joined in postmodern complicity, has been enriched. Perhaps the best summation of the heritage of **Poème électronique** was offered, either sarcastically or in perplexed admiration, by one journalist commenting on the work: "Is this art, where so many volts are required?" (217) The answer today is obvious, and Treib brilliantly reveals the historic, aesthetic, and structural reasons why this is so.



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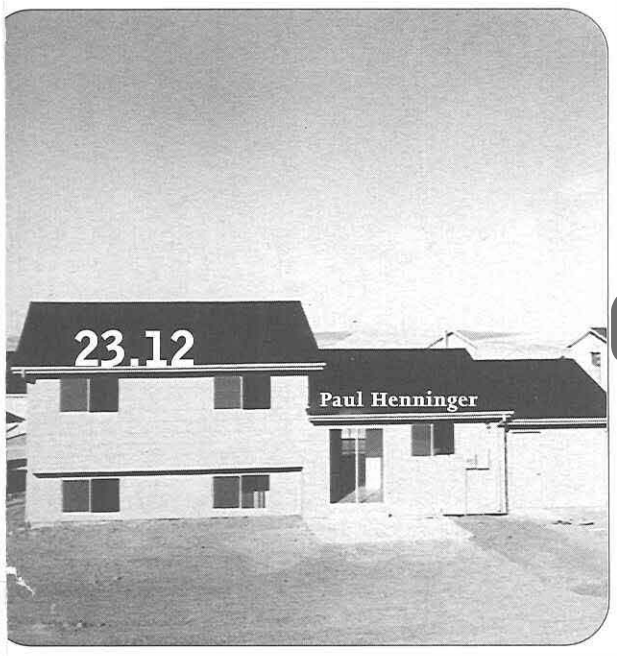
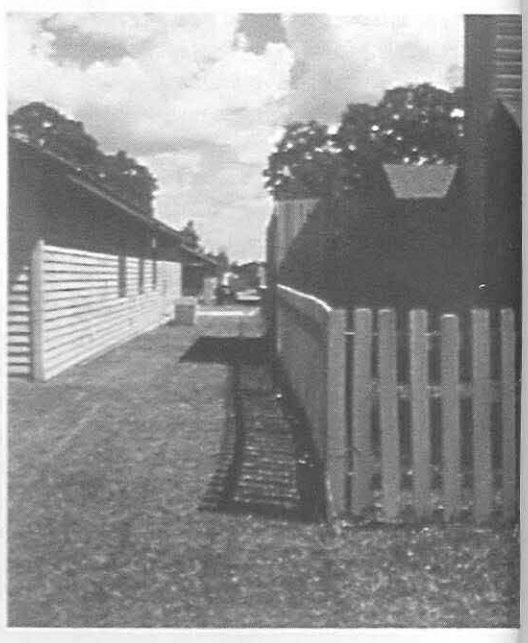
"The American Lawn: Surface of Everyday Life" was exhibited at the Canadian Centre for Architecture, in Montreal from June 16 to November 8, 1998. It was curated by Georges Teyssot, Ricardo Scofidio, Elizabeth Diller, Beatriz Colomina, Alessandra Ponte, Mark Wigley, and Mark Wasuita and will be on view at the Contemporary Arts Center in Cincinnati, Ohio, from April 4 to June 7, 1999.



Robert Adams, **Exterior View of Empty Wooden House in Housing Development, Denver, Colorado**, 1973–1977. Gelatin silver print, 15 x 19.5 cm. From the series **Denver**. Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montreal.
Courtesy Fraenkel Gallery, San Francisco. © Robert Adams

Critic @ Large:

Upon entering the halls of "The American Lawn" exhibition, it appears as though someone has pulled an enormous prank on the Canadian Centre for Architecture. The odd assemblage of artifacts and installations that constitute the show is a bit hard to make sense of, especially in the context of an institution that boldly asserts its firms roots in the venerable tectonic history of architecture. Yet there is a sense, albeit a somewhat perverse one, that this final installment of the CCA's five-part American Century series is somewhat more in line with the classically modern inclinations of the Montreal-based architecture museum and research center than the previous one, which surveyed the activity of Disney's imagineers and theme park designers, bastard sons of architecture to say the least. For here, among the vitrines filled with miniature lawn furniture, pink flamingos, and lawn dwarves, among the stereoscopic photographs and samples of Astroturf, we find the results of a type, one might even say flavor, of research that has more in common with the art-meets-commerce collections that graced the crystal halls of grand exhibitions in the late-19th century than with the hagiographic inclinations of a great deal of recent architectural curating.



Robert Sansone, **College Station, Texas**, 1997. Stereorealist transparencies, 35mm From the series **Neighbors**. Collection Centre Canadien d'Architecture / Canadian Ce for Architecture, Montreal. ©Robert Sansone

This is not to suggest that underneath the very thick surface of "The American Lawn" there is not a polemic on a par with those of shows at the Museum of Modern Art and elsewhere. Led by Georges Teyssot and assisted by Mark Wasuita, the curators include Beatriz Colomina, Elizabeth Diller, Alessandra Ponte, Ricardo Scofidio, and Mark Wigley. All, save Scofidio, hail from another venerable institution which, and this is not insignificant, is almost as far off the beaten track as is Montreal: Princeton University's School of Architecture. From that campus of lawns, the Princeton team has slowly but surely fired off a steady barrage of essays, books, and other works which propose a significant modification of what is commonly understood as architectural "practice." "The American Lawn" is in many ways the most visible, if not vocal (the accompanying "major scholarly" book will not be available until early 1999) version of their argument that the practice of architecture is, while not properly, at least much more interestingly (and maybe even more productively) one which explores the social and aesthetic implications of the everyday. While this is almost certainly a gross oversimplification of a relatively complex agenda (both in terms of content and intent), "The American Lawn" does seem to propose a mode of practice that hardly fits into the models of critic, theorist, or architect familiar to those not party to the Princeton project.

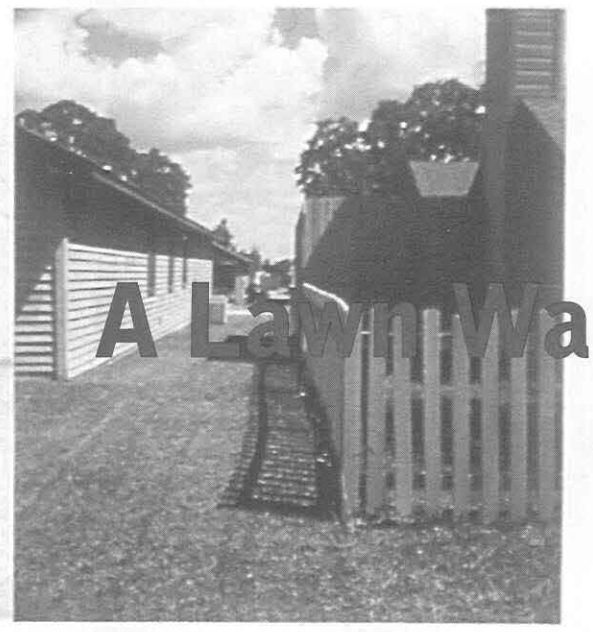
For the duration of the show, this practice dons the guise of the curator: a familiar role that allows the perpetrator of an idea to stay at a studied distance while the exhibited objects perform. In this case the "major scholarly book" has been excised – by coincidence, no doubt– from the first run of the show, amplifying the sense in which the "work" of the exhibition appears to emanate from the auratic collection of objects rather than from the research and selection done by those connected with the show. While it is true that the encyclopedic rigor of the curators and of Diller + Scofidio's laser-guided installation cum critique-of-the-museum-and-viewing-subject are instrumental in making visitors regard the rotating, 1950s showroom-style display of high-tech lawn mowers with a gravity normally reserved for the work of modern masters, somehow that effect seems to come from the machinery itself.

As a result, in trying to read "The American Lawn" it is tempting to regard the collected objects as clues to some inim-

itably modern mystery. If this is indeed a whodunit, the most interesting focus of our inquiry is perhaps the phantom curator. In the spirit of the green pastures of suburbia, let's engage in a little idle speculation à la the neighbor who peers over a fence, across a lawn, wondering what that noise coming from next door might be, in order to better form a picture of the practice of architecture at work here.

CURATOR AS PERSONAL SHOPPER

Personal shoppers peddle their services at up-scale retail outlets all over the world. Consumers on a mission, and with the currency to finance it, hire an expert consumer to guide them through the labyrinths of fetish objects that populate our most famous monuments to commodity in order to ensure the best selections from the voluminous offerings. There is definitely a sense in which the curator-type suggested by the Lawn show can be understood as this same kind of expert consumer. The CCA essentially hired a crack team of experts on modernity to comb through miles and miles of documents and objects, filter out the most provocative items, and spin the whole thing into a coherent, thematic bundle. Many of the objects in the show are unabashedly part of the consumer culture that America has produced in the 20th century.



A Lawn Way to Go

The lawn mowers and implements, the installation of sports shoes with innovative cleat designs, the blimp-shot photography of sports arenas, and the patent documents that accompany strains of genetically engineered grasses all connect the exhibition to the tradition of product launches and window displays. The projections of movies like **Halloween** and **The Invasion of the Body Snatchers**, which perfectly fill a suspended screen in the middle of the most eerily lit gallery, effectively transform the space of entertainment American-style into an object of academic contemplation while maintaining the guilty, spectacular pleasure of the Hollywood movie. You've heard of the author as producer, now get ready for the author as consumer, a bargain hunter combing the debris of decade upon decade of modernity and its various precursors for what truly are extraordinary "finds."

CURATOR AS HUMPHREY BOGART

In **The Maltese Falcon**, Humphrey Bogart and his supporting cast tumble through chases, deceptions, and ominous confrontations all of which revolve around what is called a McGuffin. The McGuffin, in this case the falcon itself, is almost always the contents of a box or suitcase, the specific nature of which is almost completely incidental to the events and suspense it produces. In "The American Lawn," the lawn is the McGuffin par excellence. I am hard-pressed to imagine a product of American culture, save perhaps aluminum siding, that is more banal, more naively neutral, or, in other words, more ready a surface on which to project the subterranean story of the American everyday. This is not to suggest that the selection of the lawn as object of study appears arbitrary. In fact, it invokes an acute sense of all that has been omitted from architectural discourse in the last century. The lawn is an effective object inasmuch as it is just shy of arbitrary and can still be made to open a very rich space for discourse.

The show surpasses even the perversity of medical oddity museums, which feature formaldehyde-borne mutants and freaks of human biology, by enlisting the absolute banality of much of American life in the service of a thesis, or theses, that gently turns modernity on its head by laying bare the negotiation, competition, and legislation that stratify and sometimes mar our placid patches of green. These corruptions and complications find a horticultural analogy in the show's photo catalogue of lawn fungi and other ailments. Oppositions and borders are put to work to illustrate a different type of degradation – the mediatic kind, for example, when video footage of protests in front of the White House lawn and on the Washington Mall is juxtaposed with footage of presidents greeting foreign dignitaries and leaving and arriving in helicopters. Here, importantly, the lawn is understood as a surface that registers the competitions and machinations of the social, be they barbecues or legal disputes, suburban development or corporate image. That surface is seen as something inclined to record and react to social struggles, from the obvious to the invisible. The work done toward that end – on the viewer, by the exhibition, set in motion by the curators – seems to be the real message here. Architecture, traditionally understood as buildings and designs for buildings, is now forced to compete with sports equipment and men who mow lawns. The act of cataloguing, of consumptive curating, uses the McGuffin-like lawn to show how the multiple influences that culture has on its minions (i.e., on anyone or even everyone) can produce a spectacle of a complexity and intensity that exceeds the lawn's more stoic tenant: architecture (proper, if you will). In this sense the green grasses of Americana are the subject of the exhibition only to the extent that **Citizen Kane** is a movie about a sled.

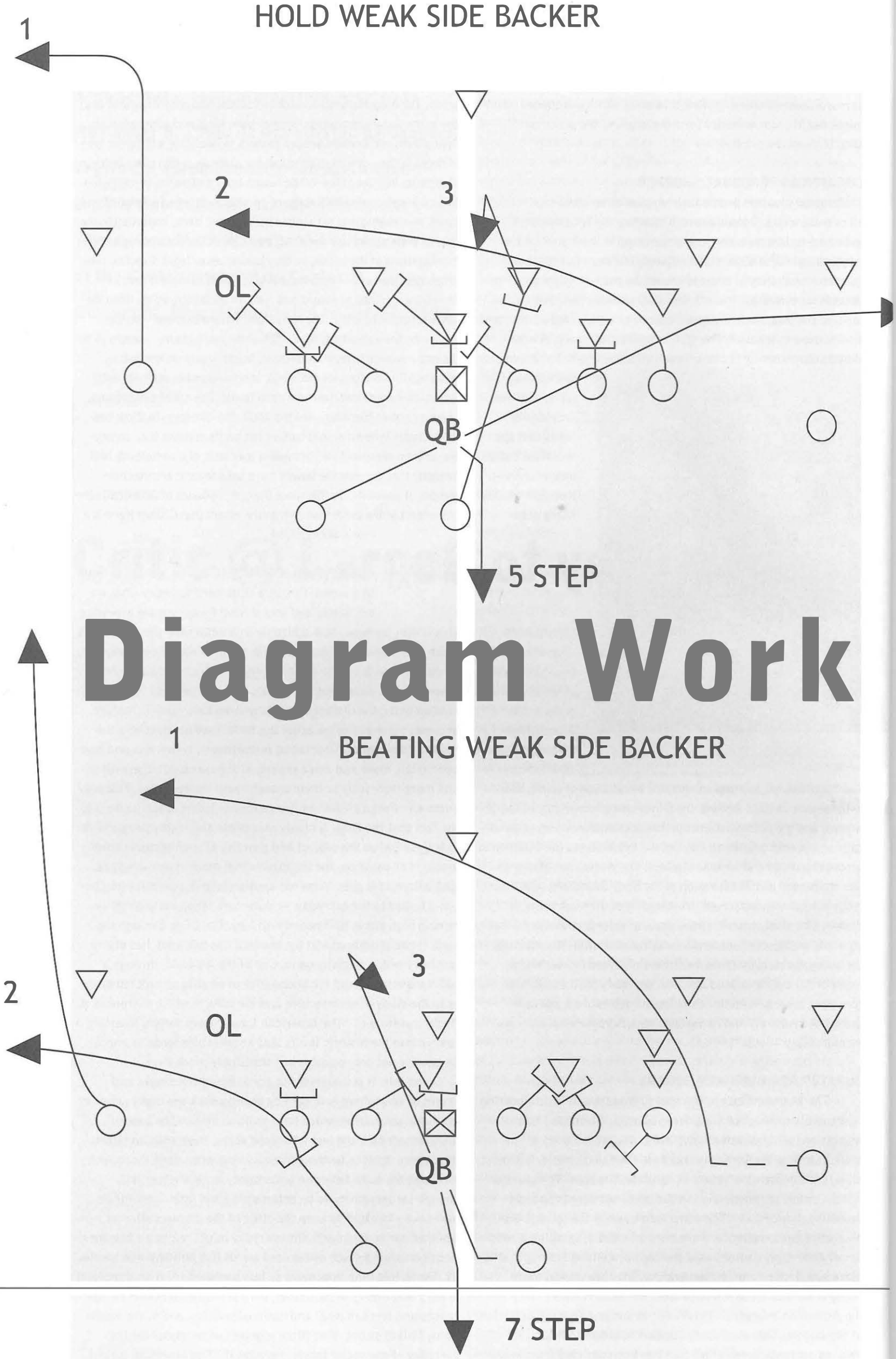
CURATOR AS JOE PUBLIC

In the end it's still a little hard to figure what we are to make of this shrewd foray into the everyday. This is due, perhaps, to a schizophrenia within the show itself. As much as the show is concerned with the artifacts of everyday life, its position vis-à-vis the social is highly ambiguous. While one never gets the sense that the show's curators pretend to any kind of objectivity, the distance they have from their subject matter becomes more and more acute the further we descend into the fruits of their labor. That labor, furthermore, seems less and less pedestrian, more and more expert, as the curators adhere more and more rigorously to their concern with the everyday. This produces an effect as ironic as it is puzzling. Ironic, because despite the fact that the show is highly accessible and highly progressive in terms of what the subject and practice of architectural scholarship is or could be, the institution that made it possible is as specialized as it gets. Whereas architecture is a practice inextricably linked to the everyday, architecture scholarship tends to remain high above that pedestrian fray. The CCA, through the work it has sponsored and the shows it has initiated, has distinguished itself, especially on its side of the Atlantic, through a willingness to expand the boundaries of what is considered proper to the study of architecture and the culture which surrounds it. As the curators of "The American Lawn" have shown, inserting a swerve into the historic limits that architecture tends to impose on itself is not only possible but startlingly productive.

Given this, it is important to try to figure the nature and extent of what there is to gain by peeling back the many layers of all things pedestrian which have built up around the base of architecture over the last 200 some years. Here such an effort has proven itself to be thought-provoking when done thoroughly, although the show belies an uncertainty as to whether it is enough for something to be entertaining and intelligent for its own sake – in order to keep the ether of the intellect stirring – or whether our concern with the everyday might not beg a few questions containing much demonized words like **political** and **ideology**. Terms like that, now more or less banished from architectural history and theory in particular, persist with both rhetorical and conceptual force in local and national politics, and in the institutions, failing or not, that stitch together what passes for the everyday of our social fabric. Perhaps if "The American Lawn" found itself immersed in the pedestrian world that is the object of its desire – in the lobby of the Seagram building, or as window displays at Macy's, or even at one of the science museums it pokes fun at – we might be surprised by the resonances it would have with the stuff from which it springs.

Joe Deal, **Backyard, Diamond Bar, California,** 1980. Gelatin silver print, 28.5 x 28.5 cm. From the series **Diamond Bar**. Collection Centre Canadien d'Architecture / Canadian Centre for Architecture, Montreal. © Joe Deal

Diagram Work



It seems we all know the same things these days. All news is worldwide; philosophy, economy, and culture have been denationalized. We all have the same experiences, all have access to the exact same information, and every little new discovery is immediately disseminated so widely that there are no surprises left for anyone. Sweeping trends encroach on individual consciousness like so many positron waves. No one is left untouched. The pursuit of fascination that marks the postmodern mentality has culminated in fascination itself becoming a subject of reflection.

The point of departure for this work on the diagram is the observation that the repetitive process of verifying knowledge deeply inhibits the practice of architecture. In order to avoid total disillusionment and exhaustion, architecture must continue to evolve its internal discourse, to adapt in specific ways to new material and technological innovations, and to engage in constant self-analysis. A denationalized world is not necessarily one of sameness. Connectivity does not imply the loss of topological difference. The end of the grand narrative does not mean that architects no longer dream their own dreams, different from anyone else's.

The essays collected here, various and exploratory as they are, offer relief from the mediated world condition by enabling and stimulating the imagination through the use of diagrams. They speak of individual fascinations that are deliberately outside the well-trod terrain of global information. As a professional strategy, engaging with even the smallest particle of the physical world offers infinitely more stimulus than any general, contemporary ontological conceptualization. These tiny packets of knowledge, separated from other processes and mechanisms, function like a valve connecting one system to another. The diagram is a loophole in global information space that allows for endlessly expansive, unpredictable, and liberating pathways for architecture.

— Ben van Berkel & Caroline Bos

DIAGRAMS MATTER

Stan Allen

> An abstract machine in itself is not physical or corporeal, any more than it is semiotic; it is diagrammatic. . . . It operates by matter, not by substance; by function, not by form. . . . The diagrammatic or abstract machine does not function to represent, even something real, but rather constructs a real that is yet to come, a new type of reality.
>
> — Gilles Deleuze and Félix Guattari, *A Thousand Plateaus* (141–42)

Although diagrams can serve an explanatory function, clarifying form, structure, or program to the designer and to others, and notations map program in time and space, the primary utility of the diagram is as an abstract means of thinking about organization. The variables in an organizational diagram include both formal and programmatic configurations: space and event, force and resistance, density, distribution, and direction. In an architectural context, organization implies both program and its distribution in space, bypassing conventional dichotomies of function versus form or form versus content. Multiple functions and action over time are implicit in the diagram. The configurations it develops are momentary clusters of matter in space, subject to continual modification. A diagram is therefore not a thing in itself but a description of potential relationships among elements, not only an abstract model of the way things behave in the world but a map of possible worlds.

Unlike classical theories based on imitation, diagrams do not map or represent already existing objects or systems but anticipate new organizations and specify yet to be realized relationships. The diagram is not simply a reduction from an existing order. Its abstraction is instrumental, not an end in itself. Content is not embedded or embodied but outlined and multiplied. Simplified and highly graphic, diagrams support multiple interpretations. Diagrams are not schemas, types, formal paradigms, or other regulating devices, but simply place-holders, instructions for action, or contingent descriptions of possible formal configurations. They work as abstract machines and do not resemble what they produce.

STEALTH DIAGRAMS

> You won't see us but you will see what we do.
>
> — IBM advertising copy for 1998 Nagano Winter Olympics

IBM's announcement of its own invisibility, appearing periodically out of the image saturated field of the Olympic broadcast, sends a curious signal. Curious, because a complex game of power, and its visible and invisible workings, is being played out in public. To point out that power no longer resides exclusively in the realm of the visible is, of course, no longer news. What does seem new here is the forthright manner of this advertising strategy, which locates publicity value in the fugitive character of information technologies. The suggestion here is that hardware – including all of the weighty apparatus of the multinational corporation – could be profitably dissolved into invisible codes of information and fluid media effects. For architecture, which still belongs to appearance (if no longer entirely to presence), this possibility triggers profound uneasiness. At a time when the dynamism of images and information dominates everyday life, the traditional association of architecture with permanence and durability has become suspect. Some practitioners have proposed a retreat, suggesting that architecture must once again define itself as stable and grounded in contrast to the fluidity of information. Others have proposed that architecture's solidity could (or should) be dissolved into these streams of information.

This is, in my view, a false dilemma triggered by a diminished – or misdirected – conception of architecture's capacities. If one of the things challenged by new media technologies is architecture's material presence, it is simply reactionary to reassert architecture's material condition. On the other hand, the more "radical" strategies (which have consisted, alternatively, in representing new technologies in metaphorical terms, or in grafting multimedia images onto a conventional architectural scaffold) have been no more productive. The emergence of new information-based technologies has provoked an understandable desire for a lighter and more responsive architecture. The practice of architecture today is measured by its performative effects as much as by its durable presence. It must negotiate a field in which the actual and the virtual assume ever more complex configurations: a field in which diagrams matter.

A diagrammatic practice begins with the assumption that simply to oppose the materiality of building to the immateriality of information is to ignore architecture's own rich history as a technique for actualizing the virtual. Architecture is already implicated in a number of media, and the architect is out of necessity constantly moving from one medium to another, transcoding from virtual to actual and vice versa. To move from drawing or writing to building (and back again) is only one example of this; architecture's constant transactions with and actualizations of social, technical, and urbanistic variables are perhaps more significant. Historically, architecture has deployed a limited catalogue of techniques to negotiate the actual and virtual: techniques of projection, calculation, or notation, for example. In recent practice, this catalogue has been incrementally expanded by the appropriation of techniques from film, video, or performance, and by the simulation and visualization capacities of the computer. Nevertheless, the conceptual apparatus of conversion (transcoding, translation, or transposition, as proposed below) is left unexamined.

A diagrammatic practice, on the other hand, locates itself between the actual and the virtual, and foregrounds architecture's transactional character. It works in the midst of architecture's constant interface with human activity, and its own internal negotiations of actual and virtual. A diagrammatic practice is relatively indifferent to the specifics of individual media. It privileges neither the durability of architecture's material effects nor the fluidity of its informational effects. Inasmuch as it does not insist on historically sanctioned definitions of architecture's disciplinary integrity, it is, in principle, open to information from architecture's outside. Inasmuch as it is skeptical about the promise of new technologies, it remains free to take full advantage of architecture's traditional techniques to organize matter and space. A diagrammatic practice extends the horizontal, affiliative character of the diagram directly into the field of construction itself, engendering an architecture of minimal means and maximal effects. You won't see us, but you will see what we do.

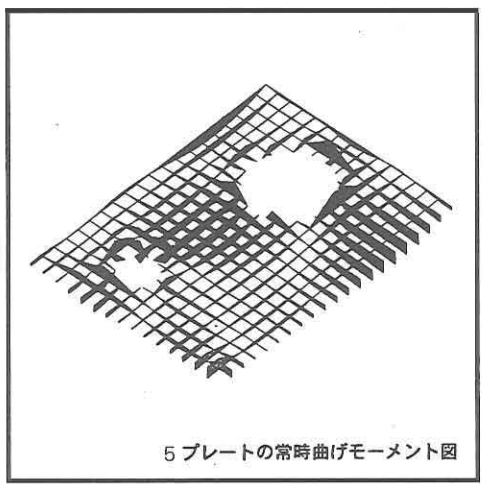
TRANSPOSITIONS: TRANSACTIONS WITH ARCHITECTURE'S OUTSIDE

A diagram is a graphic assemblage that specifies relationships between activity and form, organizing the structure and distribution of functions. As such, diagrams are architecture's best means to engage the complexity of the real. The diagram does not point toward architecture's internal history as a discipline, but rather turns outward, signaling possible relations of matter and information. But since nothing can enter architecture without having been first converted into graphic form, the actual mechanism of graphic conversion is fundamental. The diagram may be the channel through which any communication with architecture's outside must travel, but the flow of information along these channels will never be smooth and faultless. The resistance of each medium – in the literal, physical sense – needs to be taken into account. Static and interference are never absent. In this regard, the formulations of media theorist Friedrich Kittler are particularly suggestive. "A medium is a medium is a medium," writes Kittler, "therefore it cannot be translated." Against the inevitable linguistic overtones of "translation," Kittler elaborates an alternative model, a concept of "transposition" that has particular relevance to the functioning of the diagram:

> In a discourse network . . . transposition necessarily takes the place of translation. Whereas translation excludes all particulars in favor of a general equivalent, the transposition of media is accomplished serially, at discrete points. . . . Because the number of elements . . . and the rules of association are hardly ever identical, every transposition is to a degree arbitrary, a manipulation. It can appeal to nothing universal and must therefore leave gaps.[1]

In operations of transposition, conversions from one sign system to another are performed mechanically, on the basis of part-to-part relationships without regard for the whole. In the same way, diagrams are not "decoded" according to universal conventions, rather the internal relationships are transposed, moved part by part from the graphic to the material or the spatial, by means of operations that are always partial, arbitrary, and incomplete. The impersonal character of these transpositions shifts attention away from the ambiguous, personal poetics of translation and its associations with the weighty institutions of literature, language, and hermeneutics.

A diagram in this sense is like a *rebus*. To cite Kittler again: "Interpretive techniques that treat texts as charades or dreams as pictures have nothing to do with hermeneutics, because they do not translate." The diagram brings the logic of matter and instrumentality into the realm of meaning and representation and not vice versa: "Rebus is the instrumental case of res: things can be used like words, words like things."[2] Slavoj Žižek provides another example: "Remember Aristander's famous interpretation of the dream of Alexander of Macedon, reported by Artemidorus? Alexander 'had surrounded Tyre and was besieging it but was feeling uneasy and disturbed because of the length of time the siege was taking. Alexander dreamt he saw a satyr dancing on his shield. Aristander happened to be in the neighborhood of Tyre. . . . By dividing the word for satyr into *sa* and *tyros* he encouraged the king to press home the siege so that he became the master of the city.' As we can see, Aristander was quite uninterested in the possible 'symbolic meaning' of a dancing satyr (ardent desire? joviality?); instead he focused on the word and divided it, thus obtaining the message of the dream: *sa Tyros* = Tyre is thine."[3] As Žižek points out, the mechanism of interpretation here does not consist in constructing a series of symbolic equivalents (shield = city; satyr = desire, etc.). Instead, Aristander has performed a material operation (cutting, separating) on the actual linguistic stuff of the dream. The result is immediate, and the sense clear, a way out of the abyss of associative meaning. Further, inasmuch as these operations cannot be performed in translation, no overriding, universal sense is claimed, only the local and specific possibilities of manipulation. In this sense, words are made to behave like architecture rather than architecture being made to behave like discourse.



Toyo Ito, Sendai Mediathèque (1995); structural diagrams.

DIAGRAM ARCHITECTURE

The term *diagram architecture* comes from Toyo Ito. He writes about the work of Kazuyo Sejima, but the passage has the force of a general statement. His critique of the assumptions underlying conventional design procedures is worth citing at length:

> Most architects find this a complicated process: the conversion of a diagram, one which describes how a multitude of functional conditions must be read in spatial terms, into an actual structure. A spatial scheme is transformed into architectural symbols by the customary planning method, and from this a three-dimensional change is brought into effect, one which depends on the individual's self-expression. In this process, a great deal depends on the psychological weight of preconceived ideas attached to the social institution known as 'architecture.' . . . Therefore, to position architecture's place in our society would be to describe it on the one hand as an individualized artistic intent based on self-willed expression, or on the other hand, to place it within the framework of public order we recognize as a social system, the latter based on mere commonplace habits that

1 Friedrich A. Kittler, Discourse Networks, 1800/1900, trans. Michael Metteer and Chris Cullens (Stanford: Stanford University Press, 1992), 265.
2 Ibid., 274.
3 Slavoj Žižek, Looking Awry: An Introduction to Jacques Lacan through Popular Culture (Cambridge, Massachusetts: MIT Press, 1991), 51–52.

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> have become the established archetype. When you stop to think about it, the fact that almost all architecture has emerged from the confines of these two antagonistic, completely opposite poles is virtually incomprehensible. It is almost incredible to think that most architects have no serious doubts when faced with this contradiction that architecture has nurtured within itself.[4]

The architect's conventional means of working – the "customary planning method" that Ito describes – can be classified according to the well-known categories of sign established by C.S. Peirce at the beginning of this century.[5] Plans and elevations function like icons (according to similitude), while the notations that accompany them are symbols (based on the rule of convention). In recent practice, the concept of the index has been brought into play as a means of encoding information about the site or its history ("site forces") through process-based operations of tracing or geometric transformation (contiguity). Interpretation and translation figure deeply in all of these procedures. By contrast, the move away from translation to a diagrammatic practice based on transposition, and the resulting bypass of the interpretive mechanism, is consistent with Deleuze and Guattari's description of the functioning of the diagram, which also evades conventional semiotic categories: "*Diagrams* must be distinguished from *indexes*, which are territorial signs, but also from *icons*, which pertain to reterritorialization, and from *symbols*, which pertain to relative or negative deterritorialization."[6] A diagram architecture does not justify itself on the basis of embedded content, but by its ability to multiply effects and scenarios. Diagrams function through matter/matter relationships, not matter/content relationships. They turn away from questions of meaning and interpretation, and reassert function as a legitimate problem, without the dogmas of functionalism. The shift from translation to transposition does not so much function to shut down meaning as to collapse the process of interpretation. Meaning is located on the surface of things and in the materiality of discourse. What is lost in depth is gained in immediacy. Diagram architecture looks for effects on the surface, but by layering surface on surface, a new kind of depth-effect is created.

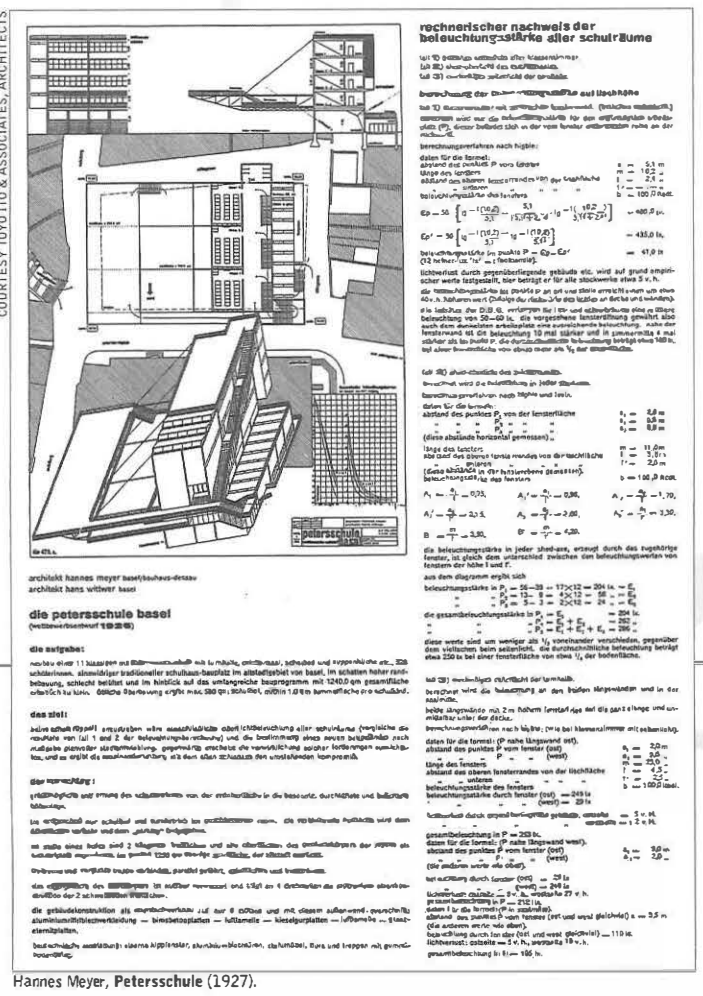
The diagram architecture described by Ito is critical both of the social institutions of architecture and of exaggerated mythologies of personal expression. Ito imagines an architecture in which the process of conversion is minimized; consequently, architecture's traditional claim to transform its material (the last vestige of architecture's connection to magic and alchemy) is undermined as well. No complex mysteries to untangle, no hidden messages to translate, no elaborate transformational process to decode. On the basis of this and other examples, it might be possible to identify a diagrammatic sensibility, exemplified in contemporary architecture by (among others) the work of OMA, Ito, Sejima, or MVRDV. This would be an architecture that takes pleasure in the immediacy and directness of procedures that often short-circuit conventional design schemas. It is an architecture that frankly and openly displays its constraints and is comfortable with the limitations imposed by forces of market economy, codes, or the shifting field of the contemporary city. The complexity of these real world constraints is neither held at arms length nor literally incorporated, but reformed as architectural material through the vehicle of the diagram. It is an architecture that travels light, leaving the heavy stuff behind. At one level, nothing more (or less) is claimed for the diagram than this: a diagram architecture is part of a new sensibility characterized by a disinterest in the allied projects of critique or the production of meaning, preferring instead immediacy, dryness, and the pleasures of the literal.

A diagram architecture is not necessarily an architecture produced through diagrams. Although diagrams figure in the work of the architects mentioned, the idea that the working procedures of the architect imprint themselves on the realized building is foreign to the logic of the diagram. Instead, a diagram architecture is an architecture that *behaves* like a diagram, indifferent to the specific means of its realization. It is an architecture that establishes a loose fit of program and form, a directed field within which multiple activities unfold, channeled but not constrained by the architectural envelope. It is an architecture of maximum performative effects with minimal architectural means, characterized at times by indifference (MVRDV) and at times by exquisite restraint (Sejima), but always by deference on the part of its author to the impersonal force of the diagram.

An important point of reference in tracing a genealogy of contemporary diagram architecture is K. Michael Hays's description of Hannes Meyer's *Petersschule* project as an abstract machine. Working from the 1927 presentation of Meyer's project as a single-page layout dominated by diagrams and calculations, Hays notes that the form and substance of the depicted building "is only one component of the total architectural apparatus that includes these diagrams." In this way, he is able to extricate Meyer from the conventions of functionalist logic. Instead of seeing the individual building as the result of generic calculations (the application of technical norms), Hays suggests that it is possible to see the *Petersschule* as only one of many possible instances of the diagrams presented, "part of a larger machine for the production of desired effects of light, occupation, and sensuous experience."[7] The abstract machine at work here is an assemblage of social and technical forces that are actualized in multiple forms by multiple agents, among them the specific instance of Meyer's project. In the realized project, these forces in turn would couple with others to activate the life of the building and to keep it in play over time. As opposed to a functionalist logic that would describe a fixed set of actions to be completed within a fixed architectural envelope (and risk obsolescence if those functions change), the notion of an abstract machine sees the building as a component in a larger assemblage that can be recontextualized according to the progressive rearrangements of the other components in this social/technical/urbanistic machine.

In functionalist discourse, any formal elaboration that cannot be accounted for by programmatic or technical criteria is an embarrassment. By contrast, in Hays's reading, the precise formal character of the building is key to its functioning. The spare, linear character of the architecture itself creates a kind of directed scaffold, a sharply defined ground for multiple activities. It

COURTESY TOYO ITO & ASSOCIATES, ARCHITECTS



architekt hannes meyer basel/bauhaus-dessau
architekt hans wittwer basel

Hannes Meyer, **Petersschule** (1927).

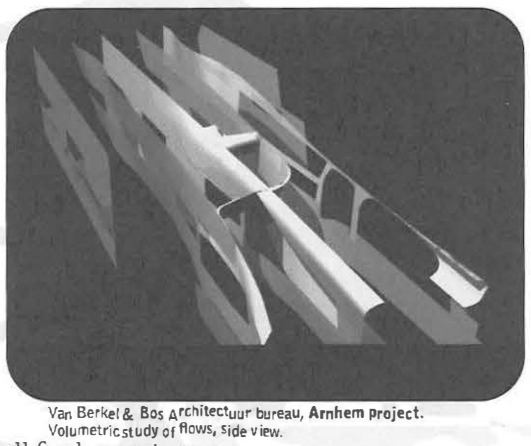
4 Toyo Ito, "Diagram Architecture," in El Croquis 77(I) (Madrid, 1996), 19.

5 "A sign is either an icon, and index, or a symbol. An icon is a sign which would possess the character which renders it significant, even though its object had no existence; such as a lead-pencil streak as representing a geometrical line. An index is a sign which would, at once, lose that character which makes it a sign if its object were removed, but would not lose that character if there were no interpretant. Such, for instance, is a piece of mould with a bullet-hole in it as the sign of a shot; for without the shot there would have been no hole; but there is a hole there, whether anybody has the sense to attribute it to a shot or not. A symbol is a sign which would lose the character which renders it a sign if there were no interpretant. Such is any utterance of speech which signified what it does only by virtue of its being understood to have that signification." Charles Sanders Peirce, Philosophical Writings of Peirce, ed. Justus Buchler, (New York: Dover Publications, 1955), 104.

6 Gilles Deleuze and Félix Guattari, A Thousand Plateaus, trans. Brian Massumi (Minneapolis, University of Minnesota Press, 1987), 142.

7 K. Michael Hays, Modernism and the Posthumanist Subject (Cambridge, Massachusetts: MIT Press, 1992), 111.

performs much information, which would quickly exhaust itself. The assertive verticality of the classroom block (emphasized by a structural expression that has little to do with the actual stacking of classrooms within) establishes a strong formal tension to the layered, cantilevered play decks, which are themselves a startling and slightly disorienting displacement of the horizontal ground plane. This formal tension is only partially softened by the elaborate series of circulation elements, the walkways, stairs, and platforms that weave through and around the building parts. These multiple routes and unexpected connections laced through a generic functional diagram (horizontal decks and vertical classrooms) produce complex performative effects. Unlike Le Corbusier, Meyer is indifferent as to the origin (semiotic, social, or technical) of these effects. The displaced ground plane braced back to the building by elegant cable struts does not call forth associations with aircraft technology or memories of the garden; nor is he interested in transforming this material into a new whole. Rather, the force of the abstract machine as deployed here is to address precise problems with precise solutions, while maintaining fluidity among the parts – a disjointedness that keeps the elements in play and allows for their constant recontextualization with changing external forces.



Van Berkel & Bos Architectuur bureau, **Arnhem project.**
Volumetric study of flows, side view.

This reading, first elaborated in the late 1980s and early 1990s, worked against the grain of the Derridian/deconstructivist theory dominant at that time, which sought to reinscribe architecture within an abstract logic of discourse and representation. Offering a way out of the facile opposition of the semiotic to the material, Hays identifies a radical materialism in Meyer's architecture. But the reference to materiality here is not in service of the recovery of tectonics or an ontology of materials, as was typical of other critiques of deconstructivism. Instead, it draws on certain aspects of the Derridian program to describe potential social and political effects resulting from the disruption and renewal of perception in Meyer's architecture: "[Meyer's] materialism emphasizes the heterogeneous properties of things and their effects in real space and real time, and induces a play of sensuous energies in the viewer, a compulsive pleasure taken in the quiddity of building parts, but also in the contradictions, the disruptions, the gaps and silences, all of which explodes the received social meanings of things."[8] Hence the radical force of Hays's reading lies in the fact that the materiality he refers to is not a primitive or "natural" materiality that looks back to architecture's origins (as, for example, in the architecture of Louis Kahn). It is instead a physical reality that is itself entirely permeated by all the artificiality and abstraction of 20th-century urban life: a reality that is already diagrammatic. By collapsing the material and the abstract in this way, he locates architecture between the real and the virtual, capable of intervening in both, yet fully committed to neither.

My motivation for examining in some depth this one example from a potential genealogy of a diagram architecture is not so much to legitimate the present by means of reference to the past as it is to suggest that the workings of the diagram belong properly to architecture's history and its own understanding of itself as a discipline. It would not be difficult to outline a more complete genealogy of the diagram in architecture. That having been said, the radical force of the diagram belongs to its recent past, and the particularly 20th-century dilemma of confronting a reality that is itself increasingly characterized by the arbitrary and the incomplete, by false starts, dead ends, indifference, and uncertainty. (As Kittler concludes, "The elementary, unavoidable act of EXHAUSTION is an encounter with the limits of media."[9])

A diagram architecture does not pretend to be able to stand outside of this reality to offer critique or correction, nor does it hold out for some impossible notion of coherence. Instead, it accepts architecture's place in this flawed reality, not cynically, but with cautious optimism, inasmuch as these contingent diagrams of matter can sometimes be reconfigured.

DIAGRAMS – INTERACTIVE INSTRUMENTS IN OPERATION

Ben van Berkel and Caroline Bos

23.19

Architecture still articulates its concepts, design decisions, and processes almost exclusively by means of a posteriori rationalizations. The compulsive force of legitimizing arguments still dominates contemporary debate, even though it only represents a limited interpretation of the complex web of considerations that surrounds each project. Yet for the most part we cannot bear to analyze our own internal discourse for fear of disrupting the notion of the eminent utility of our projects and thus precipitating their disappearance. The dependence of architects on being selected for work should not be underestimated. Inevitably, our strategies, our formulations, and the ways in which our interests evolve are related to this dependence. Since architecture – at least in the open, democratic, Western society in which we work – now results from a highly institutionalized, cooperative process in which clients, investors, users, and technical consultants all take part, it is natural and right that architects strive to be reasonable, responsible partners in this process, and condition themselves to think and to present themselves in a way that will persuade others that large investments can be safely entrusted to them. The frustrating result is that there is hardly any real architectural theory to be found, despite the diversity of practices at work today, and despite a hugely expanded volume of architectural publications. There is only after-theory.

The pressure of rationality is such that architectural theory is streamlined toward a moment of compelling logic, in which factors of location, program, routing, construction, and anything else that plays a role in the origination of a design are directed toward the triumphant conclusion that the particular design under discussion is the only objectively justifiable one. The demand to present the "right" solution, even when the contents of that concept have become very uncertain, propagates architecture's dual claims of objectivity and rationality. Like a door slamming shut, the barricade of retrospective justification roughly blocks the view of what went on behind it.

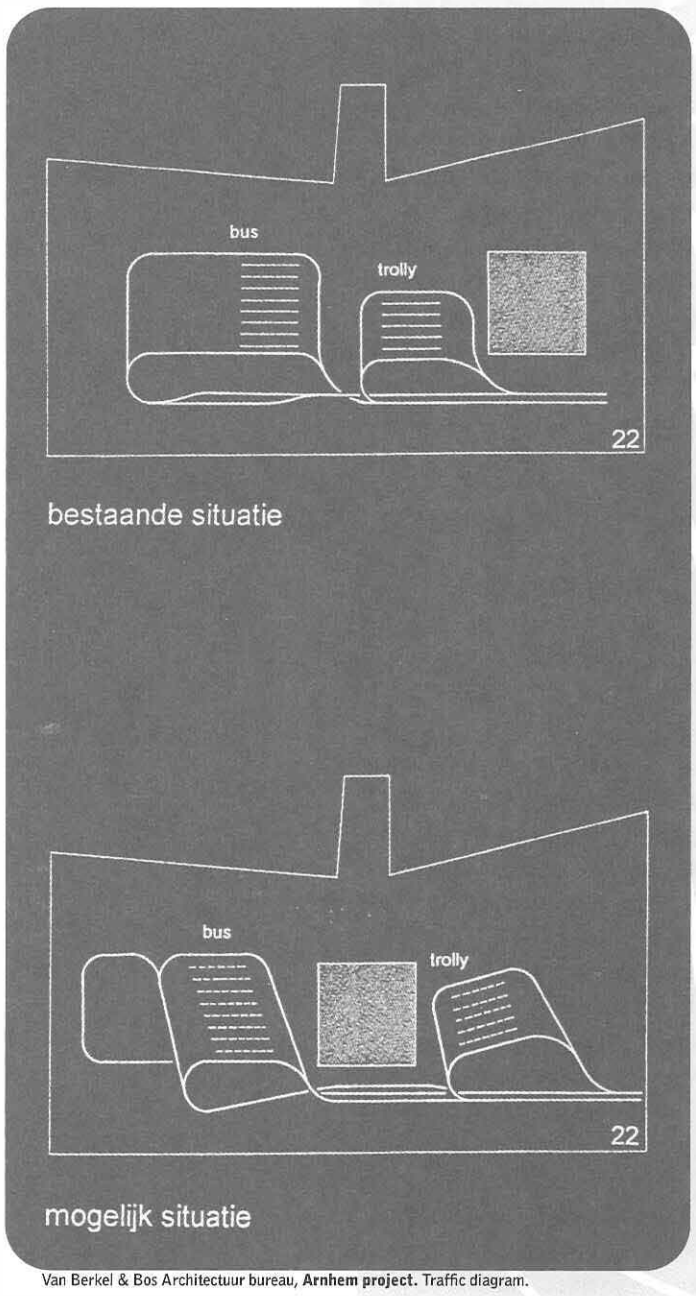
8 Ibid., 111-13.

9 Kittler, 265.

For the title (a gloss on "The Diagrams of Matter," the title of the last chapter of his doctoral thesis) and other borrowings that no doubt found their way into this text, I am indebted to Bob Somol.

ARCHITECTURE AS SOCIAL-DISCURSIVE PRACTICE

Looking into diagrammatic procedures is one way to partially open that door and to dislocate the protective and constrictive barriers that architecture has raised to hide its vulnerable center. As one of many techniques used by architects to advance their ideas within the development of a design, a diagrammatic technique presents an opportunity to examine the social-discursive aspect of architectural practice from within. Discourse analysis is a relatively new approach being used in the humanities. As a method it combines insights from text analysis, argumentation analysis, and historic research.[1] Discursive practices have been defined as persistent patterns of discourse management. Their function is to regulate production, consumption, and distribution of texts within a particular field of interest. Discursive practices cannot very well be seen as separate from the social framework in which they take place, which is why we refer to them as social-discursive practices. The dependent position of architecture within the economic system generally puts a disproportionate emphasis on arguments of persuasion, which are only a small, externally oriented part of the social-discursive practice of architecture. The challenge for the next generation of architects is to acknowledge and analyze the internal discourse, which from a social-discursive viewpoint is far more comprehensive than the methodological process that is the basis of current design practice, and to find a theory of the real in that.



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Van Berkel & Bos Architectuur bureau, **Arnhem project.** Traffic diagram.

Dismantling the scaffolding of rationality and objectivity is risky. The process might appear to imply a renunciation of all claims to any measurable, quantifiable worth. If we reject the predictable, rational interpretations of "winning schemes" as competitive fictions, what standards do we then apply to judge architecture if we don't want to end up with a lame, "anything goes" conclusion? The answer must lie somewhere in the vast field between the poles of objectivity and subjectivity, between relativity and rigidity. The method by which architecture makes use of the intense fusion of information within a diagram is located somewhere between these poles. It would seem that it is not even fixed in one specific place, as the meaning of the diagram itself is not unequivocal. There are different interpretations of the diagram, which occupy different positions on the sliding scale between subjectivity and objectivity. Some of the interpretations explored most thoroughly in recent times have been the philosophical implications of the diagram, its imagery, and the ways in which it instrumentalizes concepts of organization.[2]

THE MEANING OF THE DIAGRAM

The specific meaning of the diagram in relation to architecture has been colored by our knowledge of Bauhaus methods. But let's forget about this; the modernist diagram has nothing to do with our subject, as a quick glance at the diagrammatic practices of Gropius, Mies van der Rohe, and their students makes clear. To see architecture as a built line diagram is practically the reverse of our position. More to the point is the general understanding of the diagram as a statistical or schematic image. In its most basic and historical definition, the diagram is understood as a visual tool designed to convey "as much information in five minutes as would require whole days to imprint on the memory."[3] Diagrams are best known and understood as reductive machines for the compression of information. When the informed reader consumes a specialist diagram, the effect is like that of a self-inflating life jacket: a small package grows to full size in the time it takes to exhale a breath of air. But diagrams can also be used as proliferating machines. This is how architecture today interprets their use, thus transforming the diagram's conventional significance. When read architecturally, the diagram, which is often a bland, blank, blinding image, is never fully understood, or rather, its full meaning is not allowed to break through. A diagrammatic practice pursues a proliferating, generating, and open instrumentalization in architecture.

Architecture focuses more on the reading and consumption of diagrams than on their labor-intensive production. The condensation of knowledge that is incorporated into a diagram can be extracted from it regardless of the significance with which the diagram itself was originally invested. The specific information contained in the diagram is discarded; that is not what architecture is after. For architecture, the diagram conveys an unspoken essence, disconnected from an ideal or an ideology, that is random, intuitive, subjective, not bound to a linear logic, that can be physical, structural, spatial, or technical. In this regard, architecture has been encouraged by the writings of Gilles Deleuze, who described the virtual organization of the diagram as an abstract machine.

DELEUZE'S ABSTRACT MACHINE

Deleuze helps us understand ideas by giving examples, thousands of them, so that our minds continuously swing back and forth between the abstract and the real. Architecture similarly oscillates between the world of ideas and the physical world, thus his writings seem to hold a highly specific meaning for architecture. We make extensive use of some of Deleuze's writings for this text, but we are not out and out Deleuzians; our reading is specifically architectural. Deleuze offers at least three versions of the diagram: via Michel Foucault, via Francis Bacon, and via Marcel Proust. We do not make a distinction between the three diagrams in order to demonstrate some disparity between them, for there is none. Instead of recognizing three "versions" of the diagram, we should instead speak of moods or tonalities, for what strikes us is that three deeply significant aspects of the diagram are conveyed in three very different modes. In each case, the diagram has a different meaning and corresponds to a different stage in the process of understanding, selecting, applying, and triggering Deleuze's abstract machine.

The first stage of the diagram is associated with Foucault, through whom we learn to understand how the figure of the dia-

1 We are indebted to Jaap Bos for drawing our attention to the social-discursive approach in his doctoral thesis Authorized Knowledge (Utrecht, 1997), which deals with the discursive history of Freudian psychology. See also N. Fairclough, Discourse and Social Change (Cambridge: Polity Press, 1992).

2 Examples: Gilles Deleuze, Foucault, trans. Seàn Hand (Minneapolis: University of Minnesota Press, 1988).; Gilles Deleuze, Francis Bacon: Logique de la Sensation (Paris: Edition de la Différence, 1981); Greg Lynn, "Forms of expression", Ei Croquis no. 72(I), 1995.

3 J. Krausse, "Information at a glance On the history of the diagram", Oase, SUN Nijmegen, 1998. Krausse here quotes William Playfair, architect of the contemporary diagram, whose book The Commercial and Political Atlas (1786) introduced economic curve diagrams and bar charts.

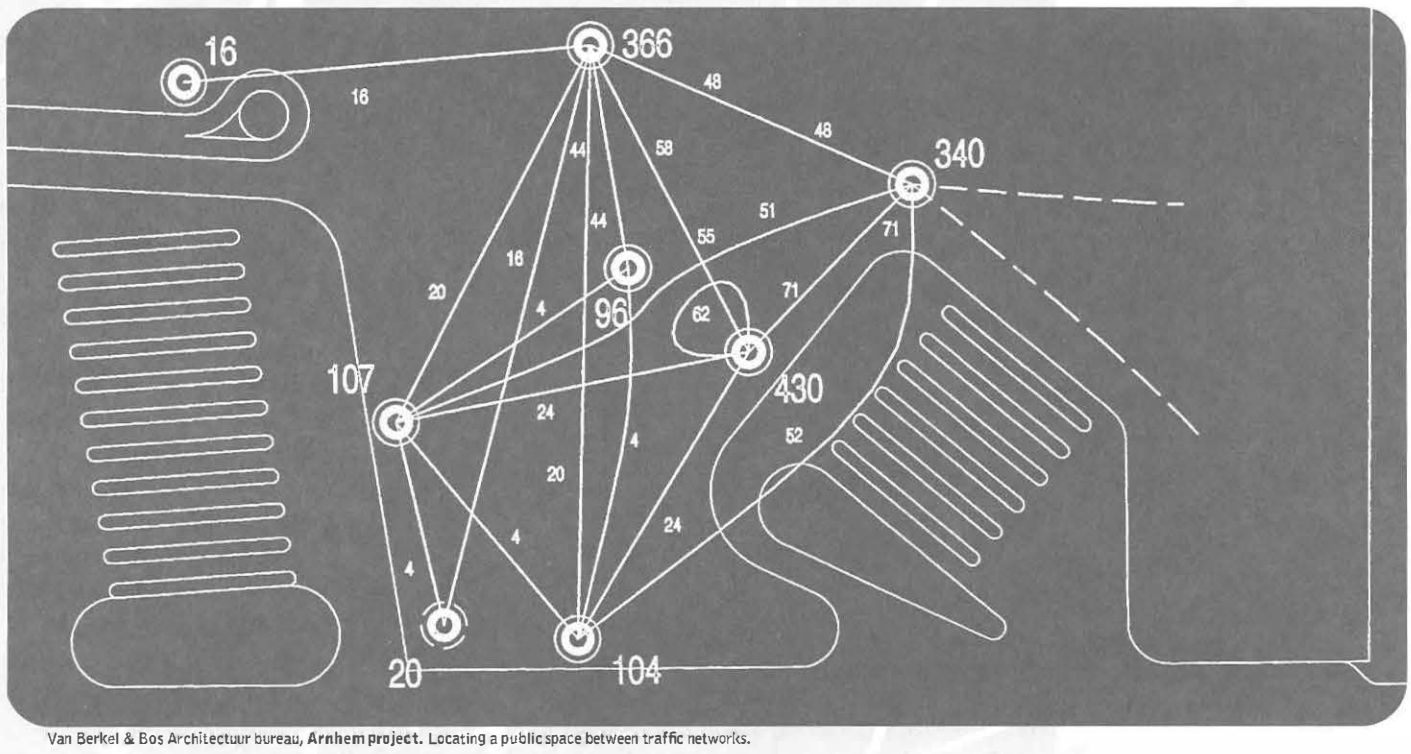
gram is not representational; this is the crisp, dry, intellectual argument. In the second stage, through Bacon, we live through an artistic struggle; as we mentally take up the paintbrush we simultaneously engage in an earthy and lighthearted, playful debate about the selection and application of the diagram. In the third stage of the diagram, through Proust, the interaction of time and matter is introduced, without which there can be no transformation. Here the argument takes a literary and musical turn; refrains in music, literature, and psychology are taken to create a lengthy and intricate narration culminating in the invention of faciality.

For Foucault, Jeremy Bentham's 1791 plan for the Panopticon is "the diagram of a mechanism of power reduced to its ideal form . . . a figure of political technology."[4] It conveys the spatial organization of a specific form of state power and discipline. The arrangement of the Panopticon is the expression of a number of cultural and political conditions that culminate in a distinctive manifestation of surveillance. It incorporates several levels of significance and cannot be reduced to a singular reading; like all diagrams, the Panopticon is a manifold. Typically, when a diagram breeds new meanings these are still directly related to its substance, its tangible manifestation. Critical readings of previous interpretations are not diagrammatic. Put in the simplest possible terms, a diagram is a diagram because it is stronger than its interpretations. Although Foucault introduced the notion of the diagram as an assemblage of situations, techniques, tactics, and functionings made solid, he put the emphasis more on the strategies that form the diagram than on its actual format. He isolated the "explicit program" of the Panopticon in the context of his concept of the repressive hypothesis; the concept of repression was his real protagonist. Deleuze reverses the agenda and zooms in on the configuration and working of the diagram itself.

Deleuze recommends that Foucault be read not as a historian but as a new kind of mapmaker. For him, the diagram is interesting not as a paradigmatic example of a disciplinary technology but as an abstract machine that "[makes no] distinction within itself between a plane of expression and a plane of content."[5] Diagrams are distinguished from indexes, icons, and symbols. Their meanings are not fixed. "The diagrammatic or abstract machine does not function to represent, even something real, but rather constructs a real that is yet to come."[6] Without this crucial intervention, Foucault's diagram quickly deflates under pressure. The explicit programs selected by Foucault were never directly or completely realized as institutions because the diagram is not a blueprint. It is not the working drawing of an actual construction, recognizable in all its details and with a proper scale. No condition will let itself be directly translated into a fitting or completely corresponding conceptualization of that condition. There will always be a gap between the two. For this same reason, concepts such as repression and liberation can never be directly applied to architecture. There has to be a mediator. The forward-looking tendency of diagrammatic practice is an indispensable ingredient for understanding its function; it is about the "real that is yet to come."

TOOLS AGAINST TYPOLOGIES

Deleuze has contributed to the insight that the relentless intrusion of signs and significations can be delayed by the diagram, which thereby allows architecture to articulate an alternative to a representational design technique. Previously, if the concepts of repression or liberation, for example, were introduced into architecture, a complex formal expression of this concept would be reduced to a sign with one clear meaning, which would subsequently be translated back into a project.



Van Berkel & Bos Architectuur bureau, **Arnhem project.** Locating a public space between traffic networks.

23.21

This reductive approach excludes many possibilities in architecture. While concepts are formulated loud and clear, architecture itself waits passively, as it were, until it is pounced upon by a concept. A representational technique implies that we converge on reality from a conceptual position and in that way fix the relationship between idea and form, between content and structure. When form and content are superimposed in this way, a type emerges. This is the problem with an architecture that is based on a representational concept; it cannot escape existing typologies.

An instrumentalizing technique such as the diagram delays typological fixation. An experimental or instrumental technique does not proceed as literally from signs. If aspects such as routing, time, and organization are incorporated into the structure using an instrumentalizing technique, concepts external to architecture are introduced into it rather than superimposed. Instances of specific interpretation, utilization, perception, construction, and so on unfold and proliferate applications on various levels of abstraction, liberating the design from a tendency toward fixed typologies.

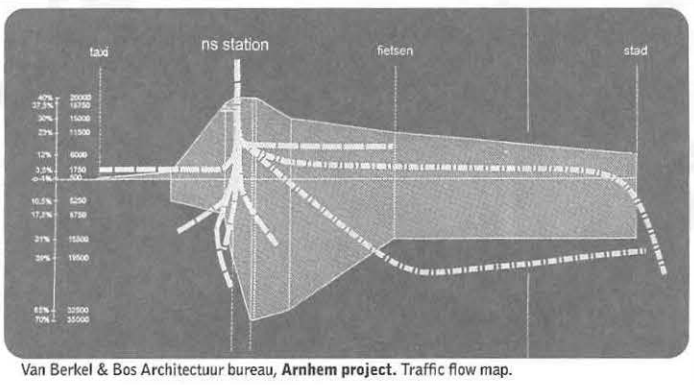
How this is done is a trivial question for many techniques, but a vital one for what we call an instrumentalizing technique. The role of the diagram is to delay typology and advance a design by bringing in external concepts in a specific shape: as figure, not as image or sign. How do we select, insert, and interpret diagrams? This is where Deleuze's second diagram comes in, the diagram of the painter that "is a violent chaos in relation to figurative givens, but is a germ of rhythm in relation to the new order of the painting."[7]

4 Michel Foucault, **Discipline and Punish: The Birth of the Prison** (New York: Vintage Books, 1979).

5 Gilles Deleuze, **A Thousand Plateaus**, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 141.

6 Ibid.,142.

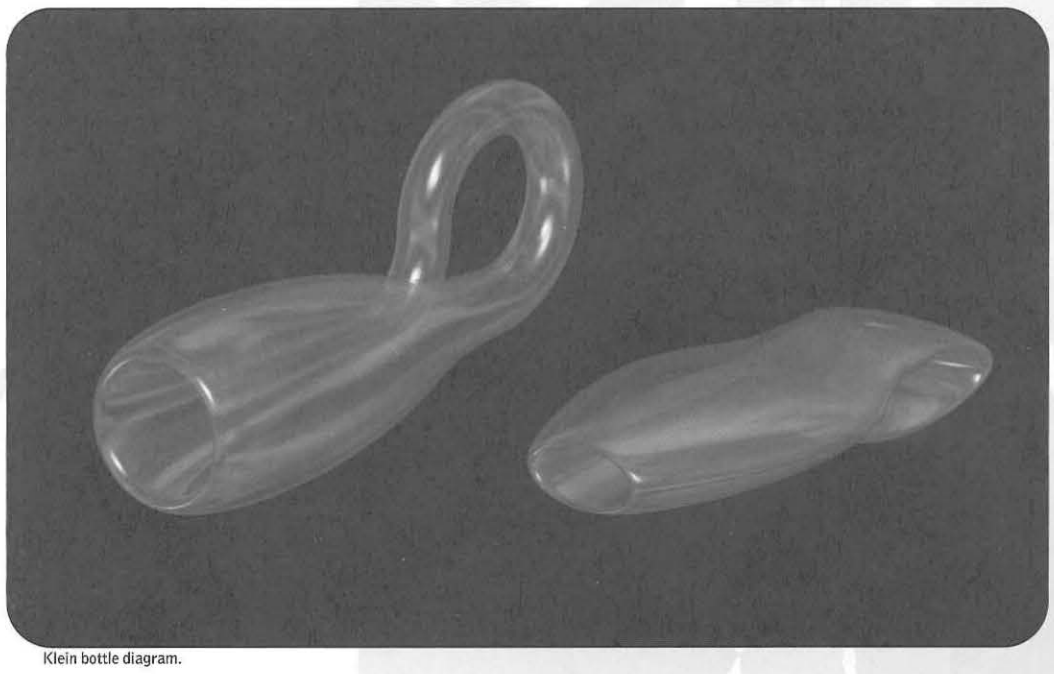
7 Gilles Deleuze, **Francis Bacon: The Logic of Sensation**, trans. Daniel W. Smith (unpublished manuscript), 55.



Van Berkel & Bos Architectuur bureau, **Arnhem project.** Traffic flow map.

Where architecture seeks to resist building typology, painting confronts the perpetual fight against "clichés, clichés!" as Deleuze exclaims, seemingly as desperate as any of us at the ludicrous inevitability of triteness. "Not only has there been a multiplication of images of every kind, around us and in our heads, but even the reactions against clichés are creating clichés."[8] Deleuze describes how, to escape this, Bacon works random smears into his paintings, blind marks that insert into the work another world: a zone of the Sahara in a mouth, somewhere else the texture of rhinoceros skin found in a photograph.

The selection and application of a diagram has a certain directness. It involves the insertion of an element that contains within dense information something that we can latch onto, that distracts us from spiraling into cliché, something that is "suggestive." In



Klein bottle diagram.

architecture, instead of a smear of paint we use technical manuals, photocopies of paintings, or random images that we collect to suggest a possible, virtual organization. These diagrams are essentially infrastructural; they can always be read as maps of movements, irrespective of their origins. The diagram is not selected on the basis of specific representational information. It is essentially used as a proliferator in a process of unfolding.

INSTRUMENTALIZING THE DIAGRAM

It is significant that Bacon did not apply his diagrams to his paintings in an unmediated way, as in the collage, but rather instrumentalized, or effectuated, them in the medium of paint. At this point the third meaning of the diagram, which confirms and facilitates the previous two, emerges: the triggering of the abstract machine. The abstract machine must be set in motion for the transformative process to begin, but where does this motion originate? How is the machine triggered? What exactly is the principle that effectuates the changes and transformations that we find in real life and in real time? Furthermore, how can we isolate this principle and render it to the dimensions that make it possible to grasp and use at will? Deleuze offers an indication by pointing at the novelistic treatment of time. Through Proust's novel run, for instance, long lines of musicality, passion, picturality, and other narrative lines that coil around black holes within the story. The black holes are a literary construction that enables change. If there were no black holes for the protagonist to fall into, the landscape of the narrative would be an unrealistically smooth and timeless plane, which would make it impossible for the hero, whose character and adventures are formed by this landscape, to evolve. The landscape of the story, the black holes, and the character become one – neither completely subjective nor objective – in order for the story to move forward. The narrative is constructed and read like a face, its intensity, passion, and expressiveness fused into an indissoluble composition. Together, the black holes and the landscape form the abstract machine of faciality.

FACIALITY: THE OPERATIONAL DIAGRAM

The question is, how could this novelistic device to propel things into motion be meaningful in architectural practice? Can architecture also use the concept of black hole/surface to develop an apparatus for triggering the effect of transitions in time? One of our current projects is structured as a diagram of faciality. The master plan for the station area of Arnhem consists of bus terminals, underground car parking, office buildings, and a train station, all parceled out to different owners. Previous urban designs for the location have proved the impossibility of accommodating all of the programmatic needs in a cumulative manner. Our research therefore focuses on finding the holes, that is, the overlapping areas of shared interests where one layer of the landscape falls into another one. In the Arnhem project, pedestrian movement, which is the one element shared by every party, forms these holes. Movement studies form a cornerstone of the proposal. The analysis of the types of movement includes the directions of the various trajectories, their prominence in relation to other forms of transportation on the site, their duration, their links to different programs, and their interconnections.

From these motion studies the station area gradually begins to emerge as a landscape of interrelated movements. The holes in this landscape create a system of shortcuts between programs, a hybrid of a centralized system and an exhaustive pattern of all possible connections. A year into the project, the topology of relations finally demands the introduction of a diagram that encapsulates the technical/spatial organization. A diagram is never a totally serendipitous find; as part of our search for a new way of understanding the station area, we had begun to study mathematical knots with the idea that a landscape with holes could also be perceived as a knot of planes. The diagrammatic outcome of this is a Klein bottle, which connects the different levels of the station area in a hermetic way. The Klein bottle is as deeply ambiguous as it is comprehensive; it stays continuous throughout the spatial transformation that it makes to go from being a surface to a hole and back again. As the ultimate outcome of shared, motion-based relations, the Klein bottle is an infrastructural element in two respects: pragmatically and diagrammatically. As a concept, the Klein bottle has come about as a result of studies of shared, interactive, local conditions. As a diagram, the Klein bottle becomes an actor in the interactive process as it begins to evoke new, more specific meanings at, for instance, structural and spatial levels.

Focusing the design on shared concerns means that relations form the parameters of the project, instead of the optimization of individual data. This generates new possibilities that no single, individual interest could have engendered. The project is pragmatic in the sense that it deals emphatically with real social, economic, and public conditions, but, crucially, this is an interactive pragmatism. Utilitarian needs are not met in a reactive way but are drawn together and transformed, which inevitably leads to the renegotiation of the relations between the parties. This approach implicitly endorses a certain policy by centering on collective interests. The project is

8 Ibid., 49.

not an unprincipled opportunist response to what is being asked, which in any case is impossible in a large-scale, multiclient project of considerable complexity. Neither, however, is there a preconceived idea of urbanism that precedes the specificities of location, program, or users. Instead, the project emerges interactively.

The abstract machine in motion is a discursive instrument; it is both a product and a generator of dialogical actions which serve to bring forth new, unplanned, interactive meanings. Discourse theory introduces the notion that meanings are not transferred from one agent to another but are constituted in the interaction between the two agents. Likewise, the architectural project is created in this intersubjective field. Diagrams, rich in meaning, full of potential movement, and loaded with structure, turn out to be located in a specific place after all. Understood as activators that help trigger constructions that are neither objective nor subjective, neither before-theory nor after-theory, neither conceptual nor opportunist, the location of the diagram is in the intersubjective, durational, and operational field where meanings are formed and transformed interactively.

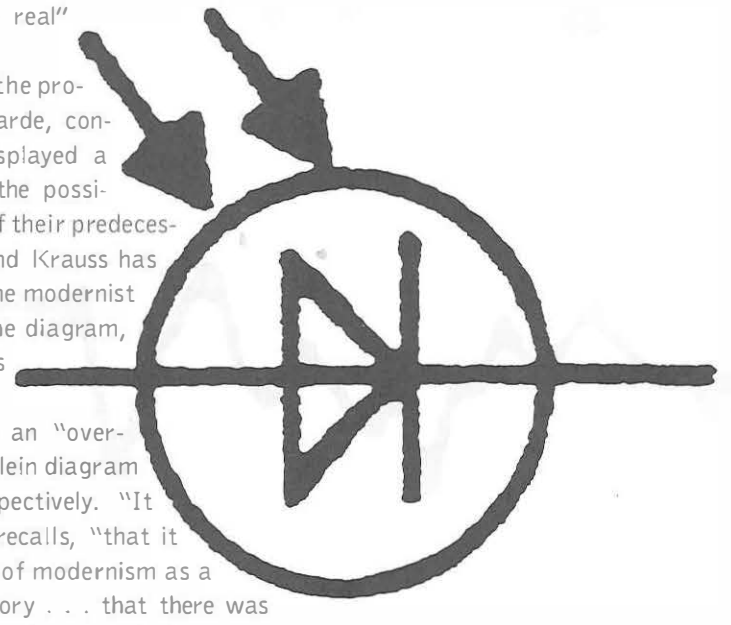
THE DIAGRAMS OF MATTER

R.E. Somol

> The diagram . . . never functions in order to represent a persisting world but produces a new kind of reality, a new model of truth.
>
> — Gilles Deleuze, Foucault (35)

In reaction to a presumed preoccupation with issues of representation and image over the last forty years, professional organizations and publications within architecture, along with various educational institutions and academics, have recently come to call for a return to "the real," variously defined as a return to marketable office skills, to essential typologies, to full-scale fabrication, to building tectonics, to the "everyday," or to a presumably stable referent such as the community or the environment. In this context, even Robert Venturi – arguably the first "information architect" of the postwar period – has come to protest that he and his partners have been misunderstood: "We did not promote a theory of architecture that substitutes itself for architecture, replacing architecture with arconcepture and buildings with diagrams and words."[1] Nevertheless, it is precisely "diagrams and words" that have been central to Venturi Scott Brown's production and that is constitutive of the neo-avant-garde project in general.

Existing more as a series of documents than monuments, an image bank of late-20th-century architecture would inevitably reveal this secret history, a strange assemblage of formulas, cartoons, and diagrams: machines both abstract and concrete. Pieces of this collection sometimes simply are "found" and other times "assisted" or manipulated; a partial list of this invisible canon includes the nine-square and the panopticon, the domino and the skyscraper, the face/vase and duck/shed, the paranoid-critical diagram and the fold, dance notation and cinematic storyboards, maternal bodies and bachelor machines.[2] The trajectory of the American neo-avant-garde – and their attempt since the 1960s to renovate the modernist project – has been guided by a specific attitude toward the diagram. This unfolding of a diagrammatic approach constitutes the neo-avant-garde's contribution to the theory and practice of an alternative mode of repetition, one founded not on resemblance and a return to origins but on modes of becoming and the emergence of difference. For these contemporary practices, the diagram has achieved the status that since the Renaissance had been reserved for the drawing as the defining trait of the architectural discipline. Without the burdens of virtuosity or rationality, the diagram is the product neither of craft-art (the single hand) nor of industrialized mechanization (corporate production): it is a function of the virtual. In this way, it serves as a technique to overcome the classical (liberal and modernist) antinomies of postwar formalism, not the least of which is that between "the real" and "the representation."



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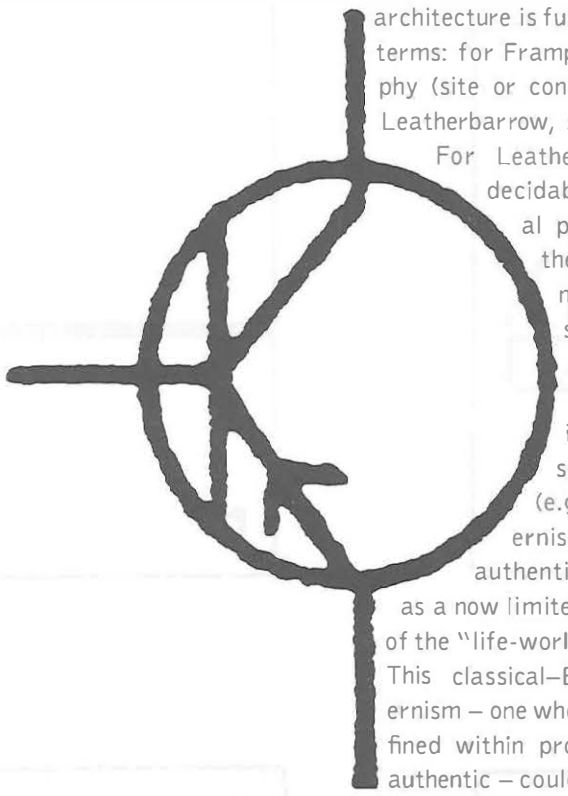
In extending and deviating the project of the historical avant-garde, contemporary practices have displayed a diagrammatic conception of the possibilities advanced in the work of their predecessors. This, too, is how Rosalind Krauss has come to frame and actualize the modernist project: that is, exactly via the diagram, by rewriting the dual programs of modernist opticality and its material discontents through an "overwriting" of the structuralist Klein diagram and Lacan's L schema, respectively. "It struck me one day," Krauss recalls, "that it was more interesting to think of modernism as a graph or table than as a history . . . that there was something to be gained from exploring its logic as a topography rather than following the threads of it as a narrative."[3] Krauss, of course, is in many ways a fellow traveler to the architectural neo-avant-garde, and her diagrammatic understanding of modernism is isomorphic with the mapping of the modernist avant-garde by the contemporary vanguards, as is her specific preoccupation with diagrams as a device of that repetition, employed in a projective, and not simply analytical or descriptive, manner. The nonnarrative aspect of the diagram suggests, too, that it is a postrepresentational device. Still, there have been several recent attempts to revise modernism from a narratological basis, an orientation which returns to architecture's imagined reality principle. Two of these revisions develop from either a technological (tectonic) or aesthetic (minimalist) extension of modernism, and their development can be seen in distinct contrast to the diagrammatic swerve implicit in the various misreadings offered by the neo-avant-gardes.

In the writings of historians and critics such as David Leatherbarrow and Kenneth Frampton, the tectonic reconstruction of the architectural discipline is directed against the seemingly exclusive concern with image or style that they perceive equally in postmodern-historicist and neo-avant-garde work. Largely associating the former with an excess of fashion or scenography and the latter with the inappropriate importation of external theories and sources, Leatherbarrow and Frampton desire to return architecture to its proper historical concerns, which would resist tendencies toward both contemporary consumption and experimental projection. They each contend that

1 Robert Venturi, Iconography and Electronics upon a Generic Architecture (Cambridge, Massachusetts: MIT Press, 1996), 268.

2 The latter two moving from Venturi's woman-sign hybrid to Koolhaas's skyscraper, particularly in the form of the Downtown Athletic Club, which he has described as "a machine for metropolitan bachelors whose ultimate 'peak' condition has lifted them beyond the reach of fertile brides." Rem Koolhaas, Delirious New York (New York: Oxford University Press, 1978), 133.

3 Rosalind Krauss, The Optical Unconscious (Cambridge, Massachusetts: MIT Press, 1993), 13.



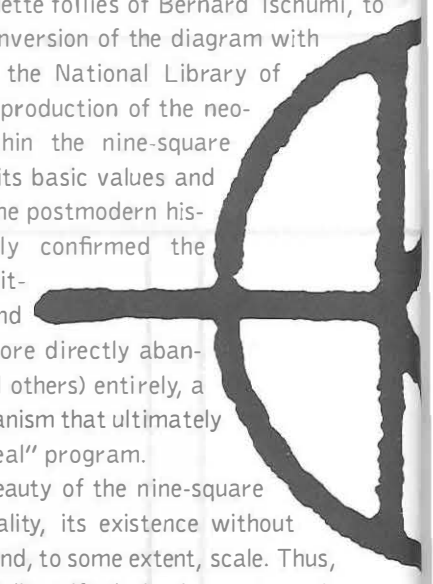
architecture is fundamentally defined by a triad of similar terms: for Frampton, typology (spatial order), topography (site or context), and tectonics (construction); for Leatherbarrow, spatial enclosure, site, and materials.[4] For Leatherbarrow, these "topics" (topoi) are decidable "places" that order both architectural production and classical rhetoric, with the value being that they are "permanent," "memorable," and promote both stability and identity; they lend themselves precisely to linear argumentation and communal agreement. Frampton imagines "tectonics" as a balance or synthesis of a rhetorical representation (e.g., the "phenomenal" of postmodernism) and literal construction (e.g., the authenticity of modernism), with the former cast as a now limited expression of the latter, an expression of the "life-world," where narrative is in the details.

This classical–Enlightenment reconstruction of modernism – one where representational excess has been confined within proper limits to express the upright and authentic – could hardly be further from the repetition of modernism provided by the neo-avant-garde, whose projects have consistently suspended any possibility for the unmediated and full presence of an integrated subject, stable place, proper enclosure (e.g., inside-outside relations), or genuine materials. As an alternative to tectonics, which attempts to subsume a projected opposition between rhetoric and construction, a diagrammatics may be understood as the proliferation of neo-avant-garde initiatives, a hybrid of the early investigation of signifying regimes with the later pursuit of new institutional arrangements. As opposed to the tectonic vision of architecture as the legible sign of construction, which is intended to resist its potential status as either commodity or cultural speculation, a diagrammatic practice (flowing around obstacles yet resisting nothing) multiplies signifying processes (technological as well as linguistic) within a plenum of matter, recognizing signs as complicit in the construction of specific social machines. The role of the architect in this model is dissipated, as he or she becomes an organizer and channeler of information, since rather than being limited to the decidedly vertical – the control and resistance of gravity, the calculation of statics and load – "forces" emerge as horizontal and nonspecific (economic, political, cultural, local, and global). It is by means of the diagram that these new matters and activities, along with their diverse ecologies and multiplicities, can be made visible and related.

Ultimately, the "machinic" of the diagram precedes the machine of the tectonic. As Deleuze writes:

> [M]achines are social before being technical. . . . [I]n order for it to be even possible, the tools or material machines have to be chosen first of all by a diagram and taken up by assemblages. Historians have often been confronted by this requirement: the so-called hoplite armies are part of the phalanx assemblage; the stirrup is selected by the diagram of feudalism; the burrowing stick, the hoe and the plough do not form a linear progression but refer respectively to collective machines which vary with the density of the population and the time of the fallow. . . . Technology is therefore social before it is technical.[5]

Within the trajectory of postwar formalism – though one can equally draw from the legacy of functionalism – this phenomenon can be observed, for instance, in the case of the nine-square problem. The diagram (or concrete machine) of the nine-square was necessary before the essential definition of modernism as the independent articulation of space and structure was conceivable, even though this was technically possible by the mid-19th century, or that the geometric organization of the nine-square was itself at least four hundred years old. The nine-square diagram provided a discipline for postwar architecture – a discipline both discursive and nondiscursive, critical and visual – enabling the institutionalization of academic programs and a 30-year history of architectural projects, from Venturi's first scheme for his mother's house (1959), through the early house series of both John Hejduk and Peter Eisenman, as well as the La Villette follies of Bernard Tschumi, to the ultimate collapse and inversion of the diagram with Rem Koolhaas's entry for the National Library of France (1989). While the production of the neo-avant-garde operated within the nine-square diagram in order to undo its basic values and principles (as opposed to the postmodern historicists whose work only confirmed the framework), there were critics of this pedagogical and practical paradigm who more directly abandoned this diagram (and all others) entirely, a partial critique of the mechanism that ultimately invited the "return to the real" program.



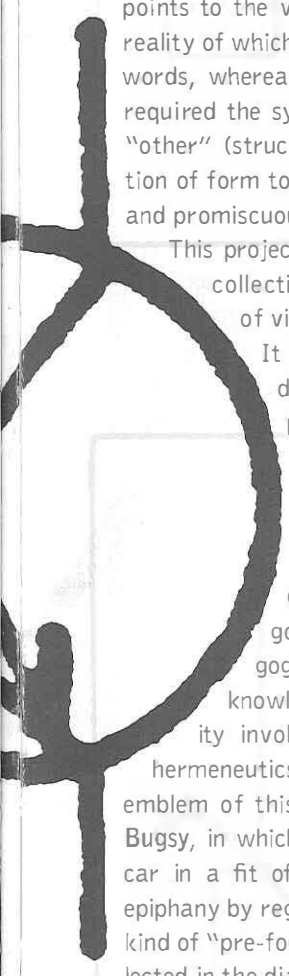
The initial power and beauty of the nine-square problem was its immateriality, its existence without function, site, client, body, and, to some extent, scale. Thus, as a way both to specify and diversify design interests, an investigation into the abstract language or geometry of form was increasingly replaced, since the mid-1970s, by its historical alternates: i.e., an emphasis on materials (or tectonics) and narrative (or program). As implemented in the design studio, these partial critiques deployed new techniques (e.g., from collage, performance, video, etc.), appropriated new discourses (from post-cubist-aesthetics to alternate philosophical, political, and scientific models), celebrated both base and hi-tech materials (metal, wax, found objects and readymades, television screens and VDTs), and even challenged the "place" and format of the architecture review itself (i.e., against the "neutrality" of the pin-up space wall, projects would migrate outdoors and in situ, ultimately into the virtual space of the screen). Those who have recently called for a return to the real, but who are generally less committed to design, have been able to absorb many of these strategies of partial critique, as they had always been motivated by a reinvestment in the supposed "real" substance of architecture: namely, materials and program.

Despite these professional, social, and technological critiques, it is possible to accelerate the postwar formal project through an alternative logic implicit (yet unarticulated) at the core of the nine-square problem itself, one which might be called diagrammatic. From this perspective, form can no longer be imagined simply as a static object or naively understood as part of a binary opposition where its other term could be variously posited as function, matter, content, or even the real. This begins to point toward a new program for work on form – what might be referred to as form-en-abyme – an infor-

4 For Frampton, see "Reflections on the Autonomy of Architecture: A Critique of Contemporary Production," in Out of Site: A Social Criticism of Architecture, ed. Diane Ghirardo (Seattle: Bay Press, 1991) and Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture (Cambridge, Massachusetts: MIT Press, 1995). Against the latter, the present study could be called "Studies in Diagrammatic Culture." For Leatherbarrow, see The Roots of Architectural Invention: Site, Enclosure and Materials (Cambridge: Cambridge University Press, 1993), and, with Moshen Mostafavi, On Weathering: The Life of Buildings in Time (Cambridge, Massachusetts: MIT Press, 1993). For a critique of these positions along similar lines to those being developed here, see Greg Lynn, "Blobs (or, Why Tectonics is Square and Topology is Groovy)," ANY 14 (1996), 58–61.

5 Gilles Deleuze, Foucault, trans. Seán Hand (Minneapolis: University of Minnesota Press, 1988), 39–40.

mal project perhaps, and one that relies on the initial prop of the diagram. This provisional project begins within our current impasse, which includes the impossibility of returning to the canonic modernist model of the nine-square and the impossibility of an enthusiastic embrace of its partial critiques. Rather than wish for a prerepresentational consummation with an unmediated "reality," it pursues a postrepresentational politics of design and education. For example, against the call for tectonic sincerity and authenticity, this diagrammatic practice points to the virtual, which John Rajchman describes as "a reality of which we do not yet possess the concept."[6] In other words, whereas to date the most rigorous formalisms have required the systematic elimination of everything considered "other" (structure, program, site, materials, etc.), the question of form today may only be broached by the simultaneous and promiscuous solicitation and affiliation of those concerns.

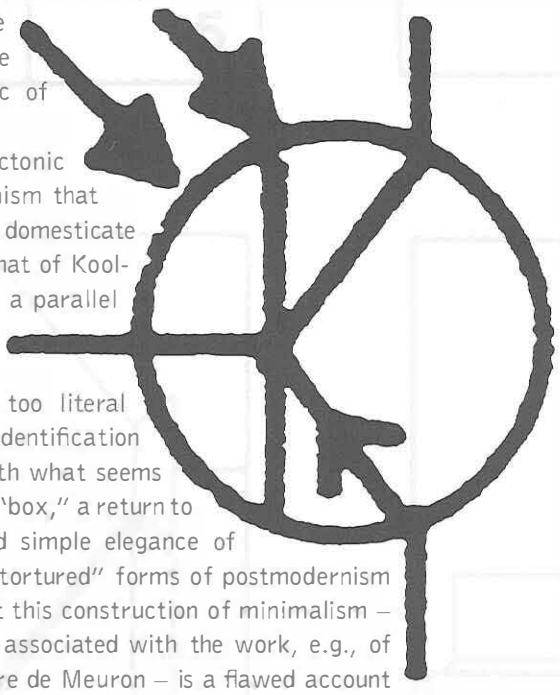


This project condenses and channels a set of forces and collectives, some of which may even be (from the point of view of current spatial politics) impossibilities. It attempts continually to restate and subvert dominant oppositional terms and to suggest the plasticity of formal-material instances, to register that things can become other than they presently appear to be.

This surprise of otherness, or possibility for the event, has been the central element of the design process for the neo-avant-garde. As Gregory Ulmer suggests in his call for a new pedagogy appropriate to the techniques and forms of knowledge enabled by electronic media, this possibility involves a heuretics of invention rather than a hermeneutics of interpretation. A popular instance or emblem of this heuretic moment can be seen in the movie **Bugsy**, in which Warren Beatty, after randomly stopping the car in a fit of anger, wanders into the desert and has an epiphany by registering a diverse range of forces, precisely the kind of "pre-formed" matters and activities that would be collected in the diagram. This suggests that form is not the static (and vertical) repetition of a proper origin model (like the nine-square) but a horizontal repetition, a provisional moment in the condensation of a heterogeneous line. The diagram registers new forces and infrastructures while making evident a teeming virtuality in what currently appears to be only a barren desert. Thus, while opposed to the domesticated and classicized calls for "eco-humanism" or reductive models of "community," the pursuit of form-en-abyme is not the enemy of the social, but simply opens alternative ways to solicit ecological forces and collective arrangements.

To reimagine institutional and disciplinary models – which is both a possible and desirable project from a postrepresentational or diagrammatic position – requires an alternative way to think repetition, a view that conceives repetition as becoming other, as a swerve, rather than as the static reproduction of a proper original. As Ulmer notes, "'[E]ureka' results from a repetition between quotidian and disciplinary experience."[7] This is obviously true in those infamous "eureka" stories – Newton under the apple tree, Archimedes in the bathtub, even Jacques Derrida shopping for a postcard. In this way, designing (either an architectural project, text, or studio) first means enabling the possibility of an accident; this is the predesign of the diagram, which arranges the scenario in which the sewing machine and the umbrella can meet to a specific and pointed effect.

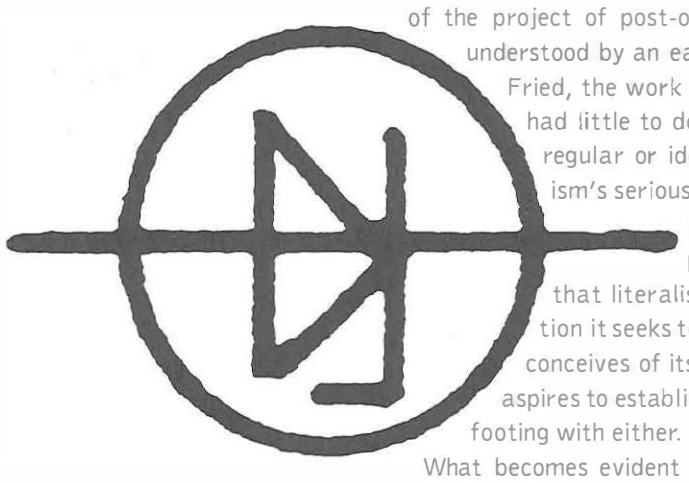
For Derrida and, following him, Ulmer, the **mise en abyme** (or "placing into the abyss") is a figure of difference, of infinite regress, and is formally associated with miniaturization and repetition, perhaps one could even say "fractalization." In looking for a way to recuperate (at least in a minor idiom) the disciplinary coherence provided at one point by the nine-square, one might look to the Sierpinski carpet, a mathematical exercise (like the Ideal Villa) that is constructed by removing the center ninth of a nine-square, then removing the scaled centers of each of the remaining eight, ad infinitum. The three-dimensional version of this exercise in voiding, the Menger sponge, produces a solid looking lattice, the surface area of which approaches infinity as its volume approaches zero. Beyond being a means to activate the gap or void, this diagram can serve as a contemporary disciplinary response to the modern invention of space, which was reified in the nine-square problem, an organization that is all **surface and event** rather than **space and structure**. Unlike the ideal Palladian nine-square, this is no longer a typology problem but one of topology – a repetition as difference rather than repetition as identity. This particular citation of the Menger sponge is not meant to privilege the appropriation of this counter-nine-square as the new universal and exclusive problem. Rather, it is intended to suggest that the organizing systems of design practice need to be reinvented and that it is possible to stimulate a continual argument over the terms of the discipline by placing prevailing oppositions in a state of suspension, initially through as simple and condensed a schematic as the diagram. In this instance, the project of form-en-abyme (perhaps a subcategory of the **informe**) perversely confirms the nine-square (through a kind of repetition twice over – by both its initial citation and processes of iterative sampling – as well as being truer to the problem than could be imagined by its authors) while at the same time subverting its limited logics, principles, terms, and effects. In retrospect, a diagram or activity of this kind can be seen to account precisely for Koolhaas's National Library project. Here the desired effect or criteria of evaluation is the surprise that results from a "false positivism," in which contradictory evaluative categories are initially confirmed, one effect of the hyper-logic of **both and neither**.



If there has been a tectonic reconstruction of modernism that has often attempted to domesticate the effects of work like that of Koolhaas, there has also been a parallel **aesthetic-minimalist** reconstruction of modernism that attempts a too literal (though not "literalist") identification of these same models with what seems simply to be a monolithic "box," a return to the purported clarity and simple elegance of modernism against the "tortured" forms of postmodernism and deconstructivism. Yet this construction of minimalism – often advanced by those associated with the work, e.g., of Jacques Herzog and Pierre de Meuron – is a flawed account

6 John Rajchman, Philosophical Events: Essays of the '80s (New York: Columbia University Press, 1991), 160.

7 Gregory Ulmer, Heuretics: The Logic of Invention (Baltimore: The Johns Hopkins University Press, 1994), 141.



of the project of post-optical art in the late 1960s. As understood by an early critic of minimalism, Michael Fried, the work that he referred to as "literalist" had little to do with an aesthetic preference for regular or ideal geometries. Instead, minimalism's seriousness is vouched for by the fact that it is in relation both to modernist painting and modernist sculpture that literalist art defines or locates the position it seeks to occupy. Specifically, literalist art conceives of itself as neither one nor the other; it aspires to establish itself as an independent art on a footing with either.

What becomes evident from Fried's description, perhaps unwittingly, is that the "between" position minimalism stakes out operates exactly as an instance of the both and neither. Against the modernist taxonomy of painting versus sculpture, minimalism's between can initially be framed as coming out of either trajectory, thereby undermining both and suspending a key modernist opposition. Advancing a performative or theatrical attitude toward space, one where form is understood as the contingent fallout of a force or operation combined with certain material possibilities (and explicitly not about expressing timeless essentials of either construction or aesthetics), minimalist practices are diagrammatic in several senses, and provide an early instance of working within and against a categorical system. Minimalism's repetition of modernism's categories is horizontal in that it cannot be said to confirm the models of either painting or sculpture, the two media whose modernist definition and parity are always meant to point back, vertically, to an ideal origin: "Art." In contrast to high modernism's "only that which is alike differs," minimalism activates the "only differences are alike," and consequently its horizontal ("one thing after another") hybrid can only be dismissed as a simulacral collapse into theater or objecthood by modernist critics like Fried.

The crossing of the disciplinary with the everyday – one aspect of the "improper" repetition of form-en-abyme – requires educators and designers to mobilize the "eureka" of surprise and the event. In the end, this call for a new disciplinary model promotes architecture as the framing and posing of problems rather than as the definition of solutions. The argument for a diagrammatic project takes it as axiomatic that every design project needs to take up anew the issue of what constitutes architecture both as a disciplinary and a social question, to suspend and rearrange ruling oppositions and hierarchies currently in operation, to promote design projects and processes that cannot simply be inferred from context or reasoning but that retrospectively transform their very contexts, social and intellectual. Toward this end, one might begin to understand the connection of academia and the profession (or criticism and design) as a kind of catastrophe curve, which is the same diagram that Ulmer has borrowed to explain the event of laughter. Thus, rather than trying to close or bridge the presumed chasm between such alternative realities, widening the gap may be the way to instigate the most productive moments of collapse.

As one contribution to this possible array of new institutional forms, various generations among the neo-avant-garde have endeavored over the last four decades to dismantle and reconfigure one of the most intractable of modernist oppositions, namely that between design and criticism, form and word. This emergence of the hybrid "architect-critic" – a figure, or new professional role, devised to involve the borders of the visible and the articulable – has been accompanied by a diverse series of diagrams, moving from the "vertical" diagrams of the nine-square and the panopticon (i.e., "architecture as wall"), to more recent horizontal or surface diagrams. Alongside these practices, however, there have remained a series of "pure critics" who, not surprisingly, have been more skeptical about the neo-avant-garde's version of repetition and role crossing. For instance, in the final pages of several works written over the last 35 years, the three most important critics of the postwar period – the liberal formalist Colin Rowe, the rational technologist Reyner Banham, and the critical Marxist Manfredo Tafuri – all suggest the near universal dismissal of the neo-avant-garde with respect to the historical avant-garde. While their differences relative to the question of "Architecture" are interesting to catalogue – Rowe desperate to save it, Banham ecstatic to abandon it, and Tafuri anxious to eulogize it – all three exhibit a curiously similar ambiguity or hostility with regard to the neo-avant-garde project. Regardless of whether their allegiances are to technology (Banham), the socio-political (Tafuri), or physical form (Rowe), each accuses neo-avant-garde production, ultimately, of a failure to engage the real and of a too intimate connection to discourse, to words and images. It may be more economical, however, to suggest that the contemporary period has witnessed not the crisis of architecture but, at least in part, the crisis of criticism. In other words, the neo-avant-garde has produced a material response to these critiques that resides exactly in their elucidation of diagrammatic procedure: after words comes not a limited construction of the real but the diagram. The diagram animates not only the unconscious of Rowe's mathematics, but also the technological and political-social unconscious. While traditional modes of criticism, in their distinctly analytical orientations, rely on "choices," "dialectics," and "oppositions," the diagrams of the neo-avant-garde operate to collapse those dualities. They positively exhaust the triad of formal, technical, and political critiques through the material solicitation and projection of the **informe**, by means of the flows and instabilities of the machinic, and via the plastic relations of the virtual – the multiple devices and effects, that is, of the diagrammatic.

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DIAGRAM: AN ORIGINAL SCENE OF WRITING

Peter Eisenman

As in all periods of supposed change, new icons are thrust forward as beacons of illumination. So it is with the idea of the diagram. While it can be argued that the diagram is as old as architecture itself, many see its initial emergence in Rudolf Wittkower's use of the nine-square grid in the late 1940s to describe Palladian villas. This pedigree continued in the nine-square problem as practiced in the American architectural academy of the late 1950s and early '60s, a practice seen then as an antidote to the bubble diagramming of Bauhaus functionalism rampant at Harvard in the late 1940s and the *parti* of the French academy that was still in vogue at several East Coast schools well into the late 1960s. As a classical architectural diagram, the *parti* was embodied with a set of preexistent values such as symmetry, the *marche*, and *poché*, which constituted the bases of its organizing strategy. The bubble diagram attempted to erase all vestiges of an embodied academicism in the *parti*. In so doing, it also erased the abstract geometric content of the nine-square.

Generically, a diagram is a graphic shorthand. Though it is an ideogram, it is not necessarily an abstraction. It is a representation of something in that it is not the thing itself. In this sense, it cannot help but be embodied. It can never be value- or meaning-free, even when it attempts to express relationships of formation and their processes. At the same time, a diagram is neither a structure nor an abstraction of structure. While it explains relationships in an architectural object, it is not isomorphic with it.

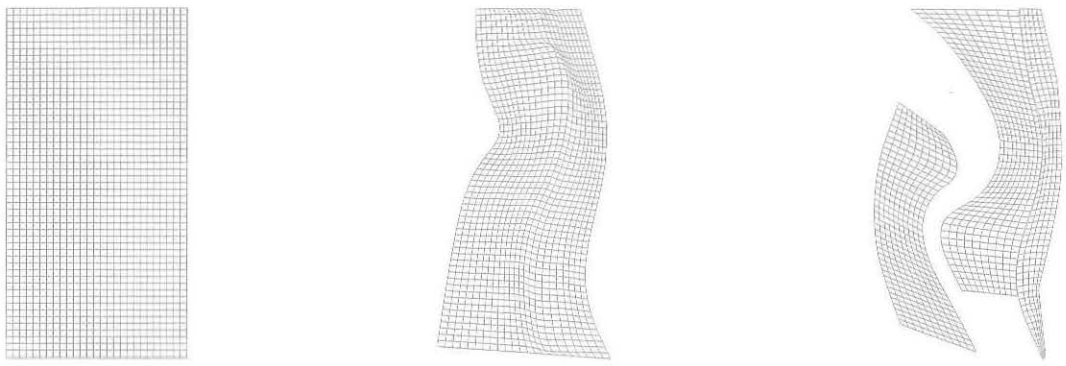
In architecture the diagram is historically understood in two ways: as an explanatory or analytical device and as a generative device. Although it is often argued that the diagram is a postrepresentational form, in instances of explanation and analysis the diagram is a form of representation. In an analytical role, the diagram represents in a different way than a sketch or a plan of a building. For example, a diagram attempts to uncover latent structures of organization, like the nine-square, even though it is not a conventional structure itself. As a generative device in a process of design, the diagram is also a form of representation. But unlike traditional forms of representation, as a generator a diagram is a mediation between a palpable object, a real building, and what can be called architecture's interiority. Clearly this generative role is different from the diagram in other discourses, such as in the parsing of a sentence or a mathematical or scientific equation, where the diagram may reveal latent structures but does not explain how those structures generate other sentences or equations. Equally, in an architectural context, we must ask what the difference is between a diagram and a geometric scheme. In other words, when do nine squares become a diagram and thus more than mere geometry?

Wittkower's nine-square drawings of Palladio's projects are diagrams in that they help to explain Palladio's work, but they do not show how Palladio worked. Palladio and Serlio had geometric schema in mind, sometimes explicit and sometimes implicit, which they drew in their projects. The notations of dimensions on the Palladian plans do not correspond to the actual project but to the diagram that is never drawn. A diagram implicit in the work is often never made explicit. For example, as Kurt Forster has noted, in the earliest parchment drawings in architecture, a diagrammatic schema is often drawn or etched into the surface with a stylus without being inked. The later inking of the actual project over this then becomes a superposition of a diagrammatic trace. In many of these drawings – from late Gothic architecture to the Renaissance – the overlay does not actually take all of the diagrammatic imprint, only partial traces of it. The quality of the ink on the page changes when it runs over the diagram from when it is actually part of the plan of the building. Thus, there is a history of an architecture of traces, of invisible lines and diagrams that only become visible through various means. These lines are the trace of an intermediary condition, that is, the diagram, between what can be called the anteriority and the interiority of architecture, the summation of its history as well as the projects that could exist as indexed in the traces and the actual building.

Reacting against an understanding of the diagram as what was thought to be an apparently essentialist tool, a new generation, fueled by new computer techniques and a desire to escape their perceived oedipal anxieties – the generation of their mentors – is today proposing a new theory of the diagram based partly on Gilles Deleuze's interpretation of Foucault's recasting of the diagram as "a series of machinic forces," and partly on their own cybernetic hallucinations. In their polemic, the diagram has become a key word in the interpretation of the new. They challenge both the traditional geometric bases of the diagram and the sedimented history of architecture, and in so doing question any relation of the diagram to architecture's anteriority or interiority.

R.E. Somol follows Deleuze in situating these ideas of the diagram in architecture. For Somol, diagrams are any kind of explanatory abstraction: "cartoons, formulas, diagrams, machines, both abstract and concrete. Sometimes they are simply found and other times they are manipulated." A partial list of what Somol labels as previous diagrams includes the nine-square, the Panopticon, the Dom-ino, the skyscraper, the duck and the decorated shed, the fold, and bachelor machines. Somol says that he is searching for an alternative way of dealing with architecture's history, "one not founded on resemblance and return to origins but on modes of becoming an emergence of difference." The problem with this idea of the diagram as matter, as flows and forces, is that it is indifferent to the relationship of the diagram to architecture's interiority, and in particular to three conditions unique to architecture: (1) architecture's compliance with the metaphysics of presence; (2) the already motivated condition of the sign in architecture, and (3) the necessary relationship of architecture to a desiring subject.

Somol's argument for a diagrammatic project takes as axiomatic that every design project, whether in practice or in the university, needs to take up anew the issue of what constitutes the discipline or, in other words, that architecture both as a discipline and a social project needs to suspend and rearrange ruling oppositions and hierarchies currently in operation. This would suggest that design projects and processes cannot simply

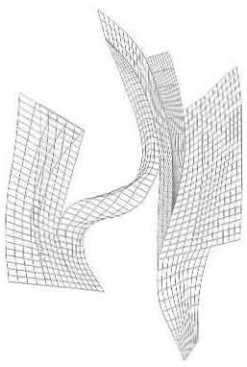


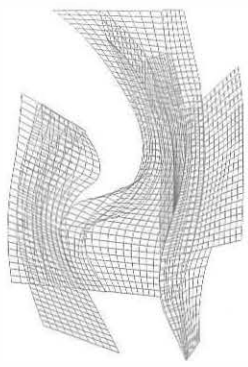
Diagrams for the Staten Island Institute of Arts and Sciences at the St. George Ferry Terminal, New York.

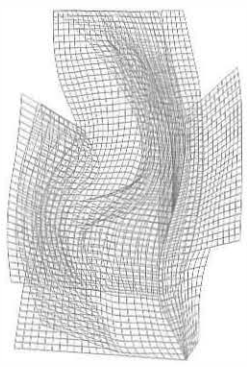
be derived from their contexts, but rather must transform their very social and intellectual contexts. In this sense, Somol's diagrammatic process, as a machinic environment, is already given as a social project. That is, it is not abstract or autonomous but rather presumes that architecture already contains in its being (i.e., its interiority) the condition of the social.

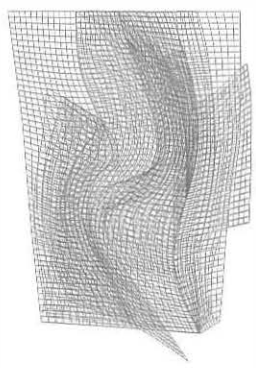
If in the interiority of architecture there is a potentially autonomous condition that is not already socialized or which is not already historicized, one which can be distilled from a historicized and socialized interiority, then all diagrams do not necessarily take up new disciplinary and social issues. Rather, diagrams can be used to open up such an autonomy to understand its nature. If this autonomy can be defined as singular because of the relationship in architecture of sign and signified, and if singularity is also a repetition of difference, then there must be some existing condition of architecture in order for it to be repeated differently. This existing condition can be called architecture's interiority. When there is no interiority, that is, if there is no relationship of interiority to the diagram, there is no singularity which defines architecture.

If architecture's interiority can be said to exist as a singular as opposed to a dialectical manifestation of a sign that contains its own signified, the motivation of the sign is already internalized and thus autonomous. Yet if the diagram is already social, as Somol suggests, this definition immediately historicizes autonomy. The notion of the diagram being proposed here attempts to overcome the historicization of the autonomy of architecture, that is, the already motivated nature of architecture's sign.









In this context, the relation of the diagram to architecture's interiority is crucial. Foucault's understanding of an archive as the historical record of a culture, and of an archaeology as the scientific study of archival material, can be translated as architecture's anteriority and interiority. By their very nature these cannot be constituted merely by unformed matter, as Somol suggests, but in fact already contain presence, motivated signs, and a psychical desire for delineation by the subject of both ground and figure. A diagram of instability, of matter and flows, must find a way to accommodate these concerns specific to architecture. In this context, another idea of the diagram can be proposed, which begins from Jacques Derrida's idea of writing as an opening of pure presence.

For Derrida, writing is initially a condition of repressed memory. The repression of writing is also the repression of that which threatens presence, and since architecture is the *sine qua non* of the metaphysics of presence, anything that threatens presence would be presumed to be repressed in architecture's interiority. In this sense, architecture's anteriority and interiority can be seen as a sum of repressions. While all discourses, Derrida would argue, contain repressions that in turn contain an alternative interior representation, architecture must be seen as a special case because of its privileging of presence. If Derrida is correct, there is already given in the interiority of architecture a form of representation, perhaps as the becoming unmotivated of the architectural sign. This repressed form of representation is not only interior to architecture but anterior to it. It is this representation in architecture that could also be called a writing. How this writing enters into the diagram becomes a critical issue for architecture.

One way that memory overcomes forgetting is through mnemonic devices. Written lists are a form of mnemonic device, but one that is graphic and literal; they do not represent or contain a trace. In architecture, literal notations can produce a plan but they have nothing to do with the diagram, because a plan is a literal mnemonic device. A plan is a finite condition of writing, but the traces of writing suggest many different plans. It is the idea of the trace that is important for any concept of the diagram, because unlike a plan, traces are neither fully structural presences nor motivated signs. Rather, traces suggest potential relationships, which may both generate and emerge from previously repressed or unarticulated figures. But traces in themselves are not generative, transformative, or even critical. A diagrammatic mechanism is needed that will allow for both preservation and erasure, that at the same time can open up repression to the possibility of generating alternative architectural figures which contain these traces.

Derrida says, "We need a single apparatus that contains a double system, a perpetually available innocence and an infinite reserve of traces." A diagram in architecture can also be seen as a double system that operates as a writing both from the anteriority and the interiority of architecture as well as from the requirements of a specific project. The diagram acts like a surface that receives inscriptions from the memory of that which does not yet exist; that is, of the potential architectural object. This provides traces of function, enclosure, meaning, and site from the specific conditions. These traces interact with traces from the interiority and the anteriority to form a superposition of traces. This superposition provides a means for looking at a specific project that is neither condemned to the literal history of the anteriority of architecture, nor limited by facts – the reality of the particular site, program, context, or meaning of the project itself. Both the specific project and its interiority can be written onto the surface of a diagram that has the infinite possibility of inscribing impermanent marks and permanent traces. Without these permanent traces there is no possibility of writing in the architectural object itself.

If architecture's interiority is a possible condition of an already written, then Derrida's use of Freud's double-sided Mystic Writing Pad could be one model for describing a conception of a diagram different from both the traditional one in classical architecture and the one proposed by Somol. Neither of these consider in any detail architecture's problem with the meta-

physics of presence, the unmotivating of the sign, or the psychical problem of repression in both the interiority of architecture and in the subject. The analogy of the Mystic Writing Pad is useful because the specific conditions of site and the anteriority of architecture both constitute a form of psychical repression.

The Mystic Writing Pad, as proposed in Freud's analogy, consists of three layers: the outer layer or surface where the original writing takes place, a middle layer on which the writing is transcribed, and, underneath, a tablet of impressionable material. Using a stylus, one writes on the top surface. Because of the surface underneath, the top surface reveals a series of black lines. When the top surface is lifted from the other two, the black lines disappear. What remains is the inscription on the bottom surface, the trace of the lines that have been drawn. The indentations made by the stylus remain, always present. Thus, there are infinite possibilities for writing on the top surface and a means of recording the traces of this writing as a series of superpositions on the tablet underneath without maintaining the specific writing on the top surface. This recalls the traces of the earliest incisions on parchment that already exist in the anteriority of architecture as described above.

The architectural diagram, like the Mystic Writing Pad, can be conceived of as a series of surfaces or layers which are both constantly regenerated and at the same time capable of retaining multiple series of traces. Thus, what would be seen in an architectural object is both the first perceptual stimulus, the object itself, along with its aesthetic and iconicity, and another layer, the trace, a written index that would supplement this perception. Such a trace would be understood to exist before perception, in other words, before a perception appears to itself or is conscious of itself.

Derrida says, "Memory or writing is the opening of that process of appearance itself. The 'perceived' may only be read in the past, beneath perception and after it." The diagram as a strata of traces offers the possibility of opening up the visible to the articulable, to what is within the visible. In this context, architecture becomes more than that which is seen or which is present; it is no longer entirely a representation or an illustration of presence. Rather, architecture can be a re-presentation of this intervening apparatus called the diagram. In this sense, the diagram could be understood to exist before the anteriority and the interiority of architecture. It exists as the potential space of writing, a writing which supplements the idea of an interiority before perception. This idea of an interiority as containing an already-written undercuts the premise of architecture's origin in presence.

Such a definition of writing implies that in an architectural object, the object's presence would already contain a repetition. In this sense an architectural object would no longer be merely a condition of being, but a condition which has within itself both a repetition of its being and a representation of that repetition. If the interiority of architecture is singular as opposed to dialectical, and if that singularity is a repetition of difference, then architecture's interiority may be already written.

There is a second concern that such an idea of the diagram must address, and that is the potential for the becoming unmotivated of the sign. First, the already-written introduces the idea of the index into the architectural object. This index is read as the first movement away from the motivated sign. Here, another layer must be added to the strata, one which, through a process of blurring, finds new possibilities for the figural within architecture's interiority that could not have come from that interiority. An external condition is required in the process, something that will introduce a generative or transformative agent as a final layer in the diagrammatic strata. This external agent is not the expression of a desiring subject, but rather must come from outside of architecture as some previously unfigured, yet immanent agent in either the specific site, the program, or the history. It could take the form of a transparent pattern or screen, which causes the already imprinted to appear as other figurations, both blurring and revealing what already exists. This is similar to the action of a moiré pattern or filter, which permits these external traces to be seen free of their former architectural contexts.

The diagram acts as an agency which focuses the relationship between an authorial subject, an architecture object, and a receiving subject; it is the strata that exist between them. Derrida says that "Freud, evoking his representation of the psychical apparatus, had the impression of being faced with a machine which would soon run by itself. But what was to run by itself was not a mechanical re-presentation or its imitation but the psyche itself." The diagrammatic process will never run without some psychical input from a subject. The diagram cannot "reproduce" from within these conditions. The diagram does not generate in and of itself. It opens up the repression that limits a generative and transformative capacity, a repression that is constituted in both the anteriority of architecture and in the subject. The diagram does not in itself contain a process of overcoming. Rather, the diagram enables an author to simultaneously overcome and access the history of the discourse while overcoming his or her own psychical resistance. Here, the diagram takes on the distancing of the subject-author. It becomes both rational and mystical, a strange superposition of the two. Yet according to Freud, only the subject is able to reconstitute the past; the diagram does not do this. He says, "There must come a time when the analogy between this apparatus and the prototype will cease to apply. It is true that once writing has been erased the Mystic Pad cannot 'reproduce' it from within; it could be a Mystic Pad indeed if, like our memory, it could accomplish that."

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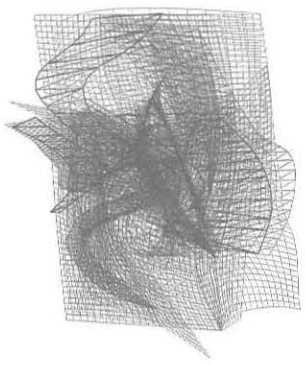
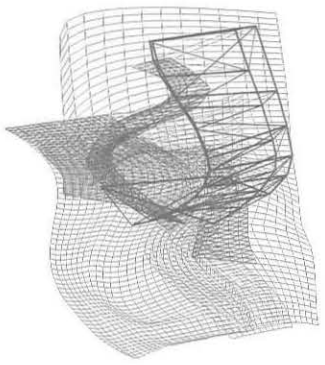
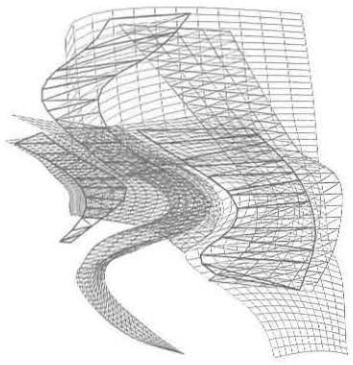
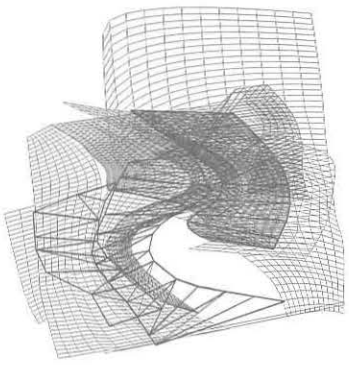
COURTESY EISENMAN ARCHITECTS









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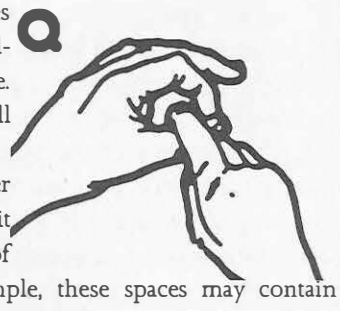
DELEUZE, DIAGRAMS, AND THE GENESIS OF FORM

Manuel De Landa

The study of diagrams and of diagrammatic thinking is currently enjoying a revival in several disciplines. On one hand, there are historians of technology who, in attempting to rescue engineering knowledge from its status as a minor branch of applied science, have stressed the relative autonomy of its goals and, more importantly, its means. In this context, what is emphasized is the existence of a peculiar type of knowledge – visual knowledge – and the role that it has played in the development of the engineering sciences.[1] On the other, there are cognitive scientists and researchers in artificial intelligence who have recently expanded the reservoir of representational resources that they use to give their models (or their robots) problem-solving abilities. Here too, it is the specifically visual aspect of diagrams that is emphasized, for example, the ability of geometric representations to rapidly convey to a problem-solver some of the crucial aspects defining a particular problem, and hence, to suggest possible solutions.[2]

There are several differences between these approaches to the question of diagrams and the one advocated by Gilles Deleuze, the least important of which is that for Deleuze, diagrams have no intrinsic connection with visual representations. The truly significant difference, on the other hand, is that for Deleuze the problem-solving activity in which diagrams are involved is not necessarily performed by humans or robots, but may be instantiated in even simple material and energetic systems. To take an example from physics, a population of interacting physical entities, such as the molecules in a thin layer of soap, may be constrained energetically to adopt a form which minimizes free energy. Here the "problem" (for the population of molecules) is to find this minimal point of energy, a problem solved differently by the molecules in soap bubbles (which collectively minimize surface tension) and by the molecules in crystalline structures (which collectively minimize bonding energy).

The question of the objective existence of problems (and their defining diagrams) is a crucial issue in Deleuze's philosophy of matter and form, a philosophy which attempts to replace essentialist views of the genesis of form (which imply a conception of matter as an inert receptacle for forms that come from the outside) with one in which matter is already pregnant with morphogenetic capabilities, therefore capable of generating form on its own. To return to our previous examples, the spherical form of a soap bubble emerges out of the interactions among its constituent molecules as these are constrained energetically to "seek" the point at which surface tension is minimized. In this case, there is no question of an essence of "soap-bubbleness" somehow imposing itself from the outside, an ideal geometric form (a sphere) shaping an inert collection of molecules. Rather, an endogenous *topological form* (a point in the space of energetic possibilities for this molecular assemblage) governs the collective behavior of the individual soap molecules and results in the emergence of a spherical shape. Moreover, the same topological form, the same minimal point, can guide the processes that generate many other geometrical forms. For example, if instead of molecules of soap we have the atomic components of an ordinary salt crystal, the form that emerges from minimizing energy (bonding energy in this case) is a cube. Other materials, in turn, yield still other forms.



A similar point applies to other topological forms which inhabit these diagrammatic spaces of energetic possibilities. For example, these spaces may contain closed loops (technically called limit cycles or *periodic attractors*), in which case the possible physical instantiations of this space will all display isomorphic behavior, an endogenously generated tendency to oscillate in a stable way. Whether one is dealing with a socio-technological structure (such as a radio transmitter or a radar machine), a biological one (a cyclic metabolism), or a physical one (a convection cell in the atmosphere), it is a single immanent resource that is involved in their different oscillating behavior. As if an "abstract oscillating machine" were incarnated or actualized in all these physical assemblages:

> **An abstract machine in itself is not physical or corporeal, any more than it is semiotic; it is diagrammatic (it knows nothing of the distinctions between the artificial and the natural either). It operates by matter, not by substance; by function, not by form. . . . The abstract machine is pure Matter-Function – a diagram independent of the forms and substances, expressions and contents it will distribute.**[3]

Deleuze calls this ability of topological forms (and other abstract machines) to give rise to many different physical instantiations a process of "divergent actualization," taking the idea from French philosopher Henri Bergson who, at the turn of the century, wrote a series of texts where he criticized the inability of the science of his time to think the new, the truly novel. The first obstacle was, according to Bergson, a mechanical and linear view of causality and the rigid determinism that it implied. Clearly, if the future is already given in the past, if the future is merely that modality of time where previously determined possibilities become realized, then true innovation is impossible. To avoid this mistake, he thought, we must struggle to model the future as open-ended, and the past and the present as pregnant not only with *possibilities which become real*, but with *virtualities which become actual*.

The distinction between the possible and the real assumes a set of predefined forms (or essences) which acquire physical reality as material forms that resemble them. From the morphogenetic point of view, realizing a possibility does not add anything to a predefined form except reality. The distinction between the virtual and the actual, on the other hand, does not involve resemblance of any kind (e.g., our example above, in which a topological point becomes a geometrical sphere), and far from constituting the essential identity of a given structure, a virtual form subverts this identity, since structures as different as spheres and cubes emerge from the same topological point. To quote from what is probably Deleuze's most important book, *Difference and Repetition*:

> **Actualisation breaks with resemblance as a process no less than it does with identity as a principle. . . . In this sense, actualisation or differenciation is always a genuine creation. . . . For a potential or virtual object, to be actualised is to create divergent lines**

1 Eugene S. Ferguson, Engineering and the Mind's Eye (Cambridge, Massachussets: MIT Press, 1993).

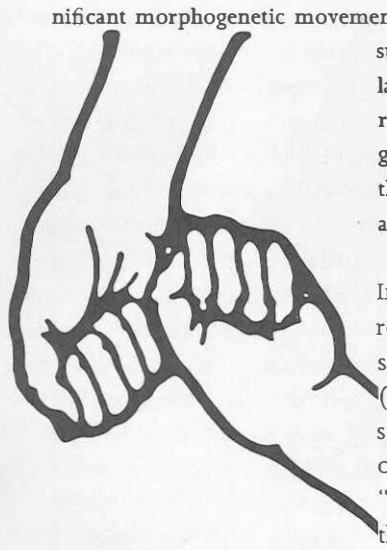
2 See, for example, the essays included in Janice Glasgow, Hari Narayanan, and B. Chandrasekaran, eds., Diagrammatic Reasoning. Cognitive and Computational Perspectives (Menlo Park, California: AAAI Press, 1995).

3 Gilles Deleuze and Félix Guattari, A Thousand Plateaus, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 141.

> which correspond to – without resembling – a virtual multiplicity. The virtual possesses the reality of a task to be performed or a problem to be solved.[4]

Deleuze goes on to discuss processes of actualization more complex than bubbles or crystals, processes such as embryogenesis, the development of a fully differentiated organism starting from a single cell. In this case, the space of energetic possibilities is more elaborate, involving many virtual topological forms governing complex spatio-temporal dynamisms:

> How does actualisation occur in things themselves? . . . Beneath the actual qualities and extensities [of things themselves] there are spatio-temporal dynamisms. . . . They must be surveyed in every domain, even though they are ordinarily hidden by the constituted qualities and extensities. Embryology shows that the division of an egg into parts is secondary in relation to more significant morphogenetic movements: the augmentation of free surfaces, stretching of cellular layers, invagination by folding, regional displacement of groups. A whole kinematics of the egg appears, which implies a dynamic.[5]



In *Difference and Repetition*, Deleuze repeatedly makes use of these spaces of energetic possibilities (technically referred to as "state spaces" or "phase spaces") and of the topological forms (or "singularities") that shape these spaces. Phase diagrams are, indeed, the very first type of diagram used by Deleuze. We will see below that more complex types are discussed in his later work. Since these ideas reappear in his later work, and since the concepts of phase space and of singularity belong to mathematics, it is safe to say that a crucial component of Deleuzian thought comes from the philosophy of mathematics. Indeed, chapter four of Difference and Repetition is a meditation on the metaphysics of differential and integral calculus. On the other hand, given that phase spaces and singularities become physically significant only in relation to material systems that are traversed by a strong flow of energy, Deleuze's philosophy is also intimately related to the branch of physics that deals with material and energetic flows, that is, with thermodynamics. Chapter five of *Difference and Repetition* is a philosophical critique of 19th-century thermodynamics, an attempt to recover from that discipline some of the key concepts needed for a theory of immanent morphogenesis.

At the beginning of that chapter, Deleuze introduces some key distinctions that will figure prominently in his later work (specifically, the concept of "intensity"), but more importantly, he reveals his ontological commitments on the very first page. Since Kant it has been traditional to distinguish between the world as it appears to us humans, that is, the world of phenomena or appearances, and the world as it exists by itself, regardless of whether there is a human observer to interact with it. This world "in itself" is referred to as "noumena." A large number of contemporary thinkers, particularly those who call themselves postmodernists, do not believe in noumena. For them, the world is socially constructed, hence, all it contains are linguistically defined phenomena. Even though many of these thinkers declare themselves to be anti-essentialist, they share with essentialism a view of matter as an inert material, only in their case form does not come from a Platonic heaven, or from the mind of God, but from the minds of humans (or from cultural conventions expressed linguistically). The world is amorphous, and we cut it out into forms using language. Nothing could be further from Deleuzian thought than this postmodern linguistic relativism. Deleuze is indeed a realist philosopher, who not only believes in the autonomous existence of actual forms (the forms of rocks, plants, animals and so on) but in the existence of virtual forms. In the first few lines of chapter five, where Deleuze introduces the notion of "intensity" as a key to understanding the actualization of virtual forms, he writes:

> Difference is not diversity. Diversity is given, but difference is that by which the given is given. . . . Difference is not phenomenon but the noumenon closest to the phenomenon. . . . Every phenomenon refers to an inequality by which it is conditioned. . . . Everything which happens and everything which appears is correlated with orders of differences: differences of level, temperature, pressure, tension, potential, *difference of intensity*.[6]

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Let me illustrate this idea with a familiar example from thermodynamics. If one creates a container separated into two compartments, and one fills one compartment with cold air and the other with hot air, one thereby creates a system embodying a difference in intensity, the intensity in this case being temperature. If one then opens a small hole in the wall dividing the compartments, the difference in intensity causes the onset of a spontaneous flow of air from one side to the other. It is in this sense that intensity differences are morphogenetic, even if in this case the form that emerges is too simple. The examples of the soap bubble and the salt crystal, as well as the more complex foldings and stretchings undergone by an embryo, are generated by similar principles. However, in the page following the above citation, Deleuze argues that, despite this important insight, 19th-century thermodynamics cannot provide the foundation he needs for a philosophy of matter. Why? Because that branch of physics became obsessed with final equilibrium forms at the expense of the difference-driven morphogenetic process that gives rise to those forms. But as Deleuze argues, the role of virtual singularities and of the diagrammatic and problematic nature of reality can only be grasped during the process of morphogenesis, that is, before the final form is actualized, before the difference disappears.

This shortcoming of 19th-century thermodynamics, to overlook the role of intensity differences in morphogenesis, to concentrate on the equilibrium form that emerges only once the original difference has been canceled, has today been repaired in the latest version of this branch of physics, appropriately labeled "far-from-equilibrium thermodynamics." Although Deleuze does not explicitly refer to this new branch of science, it is clear that far-from-equilibrium thermodynamics meets all the objections he raises against its 19th-century counterpart. In particular, the systems studied in this new discipline are continuously traversed by a strong flow of energy and matter, a flow which does not allow dif-

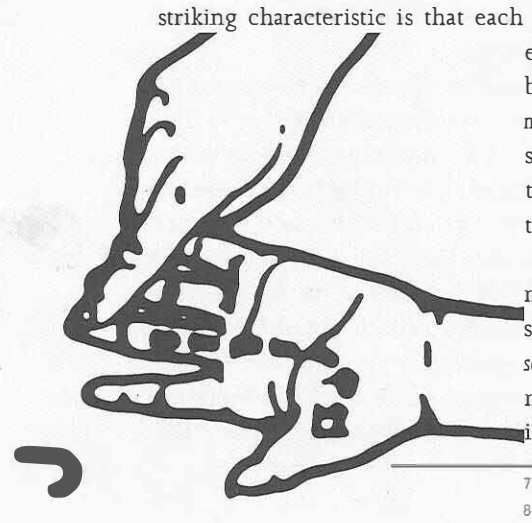
4 Gilles Deleuze, Difference and Repetition, trans. Paul Patton (New York: Columbia University Press, 1994), 212.
5 Ibid., 214.
6 Ibid., 222.

ferences in intensity to be canceled, that is, a flow which maintains these differences and keeps them from canceling themselves. It is only in these far-from-equilibrium conditions that the full variety of immanent topological forms appears (steady state, cyclic, or chaotic attractors). It is only in this zone of intensity that difference-driven morphogenesis comes into its own and that matter becomes an active material agent, one which does not need form to impose itself from the outside. To return once more to the example of the developing embryo: the DNA that governs the process does not contain, as was once believed, a blueprint for the generation of the final form of the organism, an idea that implies an inert matter to which genes give form from the outside. The modern understanding of the process pictures genes as teasing form out of an active matter, that is, the function of genes and their products is now seen to be merely constraining and channeling a variety of material processes, occurring in that far-from-equilibrium, diagrammatic zone in which form emerges spontaneously.

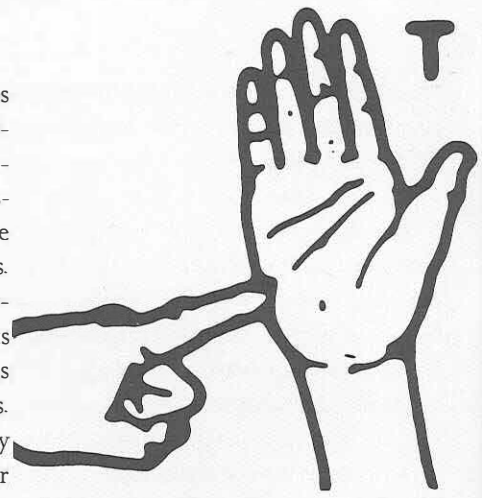
We saw above that in his definition of diagram Deleuze distinguishes between matter and substance and between function and form. We can now give a better characterization of these distinctions. While substance is a formed material, the matter that enters into a diagram is "matter-content having only degrees of intensity, resistance, conductivity, heating, stretching, speed, or tardiness."[7] In other words, it is any material far-from-equilibrium, and with access to the same reservoir of immanent, morphogenetic resources. On the other hand, the vector or tensor field that constitutes a phase space diagram – and the topological singularities that structure it – is a useful image for a diagrammatic function without a definite form, "a function-expression having only tensors, as in a system of mathematical, or musical, language."[8]

To complete my characterization of Deleuze's theory of diagrams and of their role in the genesis of form, I would like to explore the way in which his more recent work in collaboration with Félix Guattari has extended these basic ideas. In their joint book *A Thousand Plateaus* they develop theories of the genesis of two very important types of structures, referred to as "strata" and "self-consistent aggregates" (or, alternatively, "trees" and "rhizomes"). Basically, strata emerge from the articulation of *homogeneous* elements, whereas self-consistent aggregates emerge from the articulation of *heterogeneous* elements as such.

Both processes display the same "divergent actualization" that characterized the simpler processes behind the formation of soap bubbles and salt crystals. In other words, in both processes we have a virtual form (or abstract machine) underlying the isomorphism of the resultant actual forms. Let's begin by briefly describing the process behind the genesis of geological strata, or more specifically, of sedimentary rock, such as sandstone or limestone. When one looks closely at the layers of rock in an exposed mountainside, a striking characteristic is that each layer contains further layers, each composed of small pebbles which are nearly *homogeneous* with respect to size, shape, and chemical composition. These layers are referred to as "strata."



Given that pebbles do not naturally come in standard sizes and shapes, some kind of *sorting mechanism* seems to be needed to explain this highly improbable distribution, some specific device that takes a multiplicity of pebbles with heterogeneous qualities and distributes them into more or less uni-form layers. One possibility un-covered by geologists involves rivers acting as sorting machines. Rivers transport rocky materials from their point of origin to the place in the ocean where these materials will accumulate. In this process, pebbles of variable size, weight, and shape tend to react differently to the water transporting them. These different re-actions to moving water sort out the pebbles, with the small ones reaching the ocean sooner than the large ones. This process is called *sedimentation*. Besides sedimentation, a second operation is necessary to transform these loose collections of pebbles into a larger scale entity: a sedimentary rock. This operation consists of *cementing* the sorted components, an operation carried out by certain substances dissolved in water which penetrates the sediment through the gaps between pebbles. As this percolating solution crystallizes, it consolidates the pebbles' temporary spatial relations into a more or less permanent "architectonic" structure.



This double articulation – sorting and consolidation – can also be found in biological species. Species form through the slow accumulation of genetic materials. Genes, of course, are not merely deposited at random but are sorted out by a variety of selection pressures, including climate, the actions of predators and parasites, and the effects of male or female choice during mating. Thus, in a very real sense, genetic materials "sediment" just as pebbles do. Furthermore, these loose collections of genes can be lost (like sedimented pebbles) under drastically changed conditions (such as the onset of an ice age) unless they become consolidated together. This second operation is performed by "reproductive isolation," that is, by the closure of a gene pool, which occurs when a given subset of a reproductive community becomes incapable of mating with the rest. Through selective accumulation and isolative consolidation a population of individual organisms comes to form a larger scale entity: a new individual species.

We can also find these two operations (and hence, this virtual diagram) in the formation of social classes. Roughly, we speak of "social strata" when a given society possesses a variety of differentiated roles that are not equally accessible to everyone, and when a subset of those roles (i.e., those to which a ruling elite alone has access) involves the control of key energetic and material resources. In most societies, roles tend to "sediment" through a variety of sorting or ranking mechanisms, yet rank does not become an *autonomous dimension* of social organization in all of them. In many societies, differentiation of the elites is not extensive (they do not form a center while the rest of the population forms an excluded periphery), surpluses do not accumulate (they may be destroyed in ritual feasts), and primordial relations (of kin and local alliances) tend to prevail. Hence, a second operation is necessary: the informal sorting criteria need to be given a theological interpretation and a legal definition. In short, to transform a loosely ranked accumulation of traditional roles into a social class, the social sediment needs to become consolidated via theological and legal *codification*.[9]

7 Deleuze and Guattari, A Thousand Plateaus, 141.

8 Ibid., 141.

9 See more detailed discussion and references in Manuel De Landa, A Thousand Years of Nonlinear History (New York: Zone Books, 1997), 59–62.

Is there also a virtual diagram behind the genesis of meshworks? In the model proposed by Deleuze and Guattari, there are three elements in this other virtual diagram, two of which are particularly important. First, a set of heterogeneous elements is brought together via an *articulation of superpositions*, that is, an interconnection of diverse but overlapping elements. Second, a special class of operators, or *intercalary elements*, is needed to effect this interlock via local connections. Is it possible to find instances of this diagram in geology, biology, and sociology? Perhaps the clearest example is that of an ecosystem. While a species may be a very homogeneous structure, an ecosystem links together a wide variety of heterogeneous elements (animals and plants of different species), which are articulated through interlock, that is, by their functional complementarities. Since one of the main features of ecosystems is the circulation of energy and matter in the form of food, the complementarities in question are alimentary: prey-predator or parasite-host being two of the most common. In this situation, symbiotic relations can act as intercalary elements aiding the process of building food webs by establishing local couplings. Examples include the bacteria that live in the guts of many animals, allowing them to digest their food, or the fungi and other micro-organisms which form the rhizosphere, the underground food chains that interconnect plant roots and soil.

Geology also contains actualizations of these virtual operations, a good example being that of igneous rocks. Unlike sandstone, igneous rocks such as granite are not the result of sedimentation and cementation but the product of a very different construction process, forming directly from cooling magma. As magma cools down, its different elements begin to separate as they crystallize in sequence, those that solidify earlier serving as containers for those which acquire a crystalline form later. Under these circumstances the result is a complex set of heterogeneous crystals which *interlock* with one another, giving granite its superior strength. Here, the intercalary elements include anything that brings about local articulations from within the crystals, including nucleation centers and certain line defects called dislocations, as well as local articulation between crystals, such as events occurring at the interface between liquids and solids. Thus, granite may be said to be an instance of a meshwork.

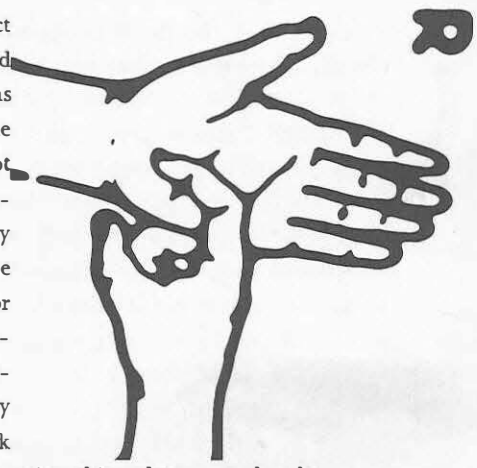
In the socio-economic sphere, precapitalist markets may be considered examples of cultural meshworks. In many cultures weekly markets have traditionally been meeting places for people with heterogeneous needs and offers. Markets connect people by matching complementary demands, that is, by interlocking them on the basis of their needs and offers. Money, even primitive money such as salt blocks or cowry shells, may be said to perform the function of intercalary elements: while in pure barter the possibility of two exactly matching demands meeting by chance is very low, when money is present those chance encounters become unnecessary, and complementary demands may find each other at a distance, so to speak.[10]

Thus, much as sandstone, animal species, and social classes may be said to be divergent actualizations of a virtual process of "double articulation" that brings homogeneous components together, granite, ecosystems, and markets are actualizations of a virtual process that links heterogeneous elements through interlock and intercalation. Moreover, the diagram behind the genesis of meshworks is directly related by Deleuze and Guattari to the simpler abstract machines animating intense, far-from-equilibrium matter. As they write:

> It is no longer a question of imposing a form upon a matter but of elaborating an increasingly rich and consistent material, the better to tap increasingly intense forces. What makes a material increasingly rich is the same as what holds heterogeneities together without their ceasing to be heterogeneous.[11]

Given the close connection between intense matter and the concept of the diagrammatic, we may seem to have an opposition between stratified and diagram-embodying structures. Yet, as Deleuze and Guattari argue, it is important not to treat the dichotomy of strata and self-consistent aggregates as embodying a static typology: Neither meshworks nor strata occur in pure form, and more often than not we are confronted with mixtures and hybrids of the two. Beyond that, self-organizing, diagrammatic processes participate in the creation of strata (e.g., the rivers that sort the pebbles or the crystallizations of the percolating solution that cements them together), and sorted, homogenized elements can sometimes function as intercalary elements (here one can offer the Internet as an example, a true meshwork of networks made possible by the existence of homogeneous standards, such as those for HTMI.). Hence, it is better to picture this dichotomy as a continuum, characterized at one end by the most hierarchical, stratified structures and at the other end by pure, intense matter at its limit of destratification, that is, the plane of consistency. As Deleuze and Guattari put it:

> We cannot, however, content ourselves with a dualism between the plane of consistency and its diagrams and abstract machines on the one hand, and the strata and their programs and concrete assemblages on the other. Abstract machines do not exist only on the plane of consistency, upon which they develop diagrams; they are already present, enveloped or "encasted" in the strata in general. . . . Thus there are two complementary movements, one by which abstract machines work the strata and are constantly setting things loose, another by which they are effectively stratified, effectively captured by the strata. On the one hand, strata could never organize them-selves if they did not harness diagrammatic matters or functions and formalize them. . . . *On the other hand*, abstract machines would never be present, even on the strata, if they did not have the power or potentiality to extract and accelerate destratified particle-signs (the passage to the absolute).[12]



It should be clear by now that talk of the "stratification" of abstract machines is simply another way of discussing the actualization of the virtual, or in other words, that the theory of diagrams developed in *A Thousand Plateaus* was already present in Deleuze's early work. Indeed, I would go so far as to say that this theory was developed in greater detail in *Difference and Repetition*, and that it is this book that constitutes the main reservoir of conceptual resources needed to approach diagrammatic thinking. In the preface to the English edition, Deleuze calls *Difference and Repetition* the first book where he speaks in his own voice and asserts that everything else he had written (including his collaborations with

10 Ibid., 62–66.

11 Deleuze and Guattari, A Thousand Plateaus, 329.

12 Ibid., 144.

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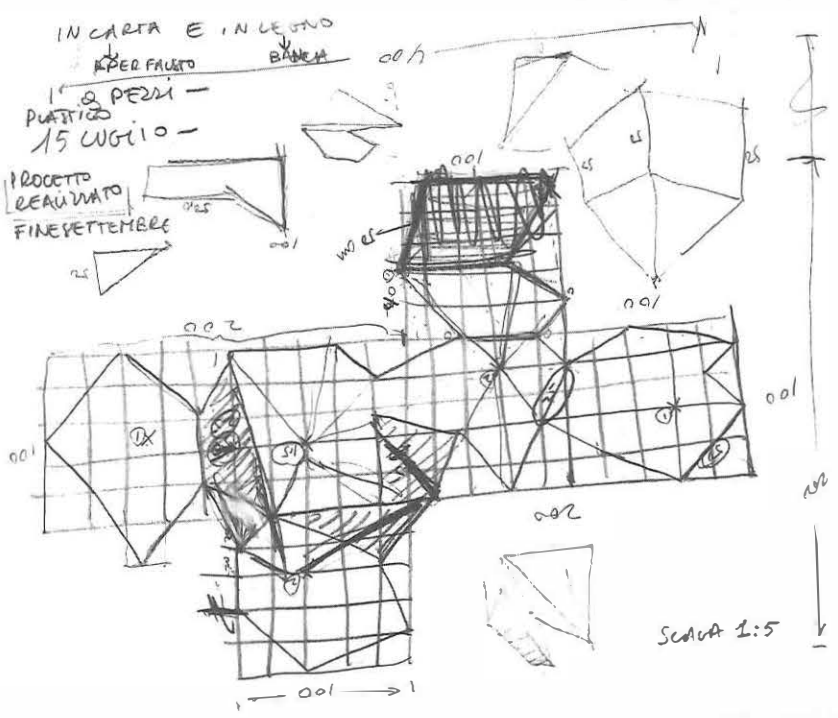
Guattari) leads back to this volume. Indeed, he speaks of chapter three of this book (where he presents his own "image of thought") as "the most necessary and the most concrete, and which serves to introduce subsequent books."[13] In this chapter, Deleuze proposes that thinking consists not in *problem-solving* (as most treatments of diagrams and diagrammatic reasoning suggest), but on the contrary, that given the real (though virtual) existence of problems in the world itself, true thinking consists in *problem-posing*, that is, in framing the right problems rather than solving them. It is only through skillful problem-posing that we can begin to think diagrammatically.

OF THE DIAGRAM IN ART

Christine Buci-Glucksman
Translated from the French by Josh Wise

23.34

"I draw on chance." It is in these terms that Duchamp enunciated the specificity and power of the diagram. That is, to bring about co-existence through drawing, the light lines of the aleatory, to harness the complex in all its possibilities in order to better grasp the "in-between" dimensions of reality. In contrast to retinal modernist abstraction, the diagram in art presupposes a "thin" abstraction composed of inflections and virtualities. We soon understand that the cognitive detour necessary to the development of **The Bride Stripped Bare by Her Bachelors, Even** required a digrammatic and cartographic abstraction: a space of projection and transfer which leaves the lone perspectival model in favor of a weightless, aerial space – that of the Bride. Such space, which finds its cold symbolism in the glass and the "mirror-like," is "the virtual as fourth dimension," as Duchamp put it. Schemas of body without flesh, bachelors reduced to simple deliveries, "in-betweens" and "operations"; do all of these aim to construct an "abtract machine" or modern Eros? Thanks to this transference [plan-transfert], the painting becomes "a Diagram of the Idea."



COURTESY THE ARTIST

Sol LeWitt, **Working Drawing for Complex Form**, c. 1988; Pencil on paper; 8.25 x 10". LeWitt Collection, Chester, Connecticut.

No diagram exists without the in-betweens necessary to an abstract machine, in which the points of separation and the convergences of lines and trajectories define a mental processing of figures and a modeling of the real. By operating through the construction of abstracts and analogical structures, the diagram recalls Wittgenstein's definition of the wiring diagram of a radio as a "bunch of lines." As Gilles Deleuze showed in his book devoted to Michel Foucault's disciplinary diagrams, the diagram is intimately linked with cartography: "A diagram is a map, or rather a superimposition of maps."[1]

Still, this diagrammatic cartography is most ambiguous. Indeed, the current movement away from a culture of objects toward a culture of networks and flux seems to blur the distinction between two conceptions of the diagram present in Deleuze's own work: the diagram as "relationship of forces," and the diagram as ideal and virtual, as paradigm of a new abstraction – a post-abstraction.[2]

To be certain, the diagram as "relationship of forces" implies an abstract machine that grids the social and engenders an "intersocial in the making." The diagram is unstable, formless, and fluctuating, always subject to "micro-movements," variations, and points of resistance. And yet this relationship of forces is virtual, that is to say, only manifest in its effects. The battles of micro-powers "modify the diagram" since every force carries a potential dependent upon its place in the diagram. The diagram is always a composite of the ordered and the aleatory, of place and nonplace. It is guided by a kind of causality that Deleuze borrowed from Spinoza: an immanent cause, internally expressive of its own effects.[3]

We find a slightly different version of the diagram in Deleuze's analysis of Francis Bacon's paintings. Here it is no longer an "intersocial" diagram. Using Bacon's own terms, Deleuze develops a theory of diagram as "an operating group of splotches, lines, and zones" in a painting. The diagram is at the threshold of painting as "chaos-germ." Better yet, "it is quite a chaos, a catastrophe, but also a germ of order and rhythm."[4] This dialectic of the aleatory and the ordered shifts toward the dialectic of the plan and of chaos in Deleuze and Guattari's **What is Philosophy?** Little remains of the diagram as material and rhythmic, as Paul Klee understod it; Klee never ceased his exploration of vectoral diagrams of dimension and form, as in his "atmospheric" paintings. Even while he helps to make painting "the analogical art par excellence," his art is not abstract as such. Deleuze opposes diagrammatic painting (Cézanne or Bacon) to "abstract" painting composed of codes and binaries.

As we can see, the question of the diagram, through its many roles in the sciences, architecture, and the arts, poses the more general question of the status of abstraction. In place of the "subtractive" understanding of abstraction, which opposes the abstract and the figurative, it would be useful to develop a newer extractive and projective conception of abstraction – Duchampian, if you will. The hazards of the diagram, of its fluctuations and retracings, are no accident. Rather, they are the formulation of a new type of mental imaging that I call "Icarian" in my **L'oeil cartographique de l'art**, devoted to the history of the map in art.[5] In constrast to the single, privileged viewpoint of the perspectival gaze, the Icarian gaze sees from above, much like the gaze between "site" and "nonsite" that Robert Smithson analyzed in **Aerial Art**, his project for the Dallas airport. Vision is antivision; architecture, disarchitecture; order, entropy. "Visibility is often marked by both menal and atmospheric turbidity."[6] As in New York architecture of the 1930s, **Aerial Art** injects time into space. But the time of **Aerial Art** is a nonorganic time in which the aesthetic is simply "the airport as idea." In the tradition of Duchamp, the displacement of vision introduces the diagram of the idea, a nonvisual, mental cartography composed of the conjunction and disjunction of fluid or suspended spaces. In this, the diagram resembles contemporary numerical maps which seem to realize Borges's dream of a map expanded to the scale of the territory.

13 Deleuze, Difference and Repetition, xvii.

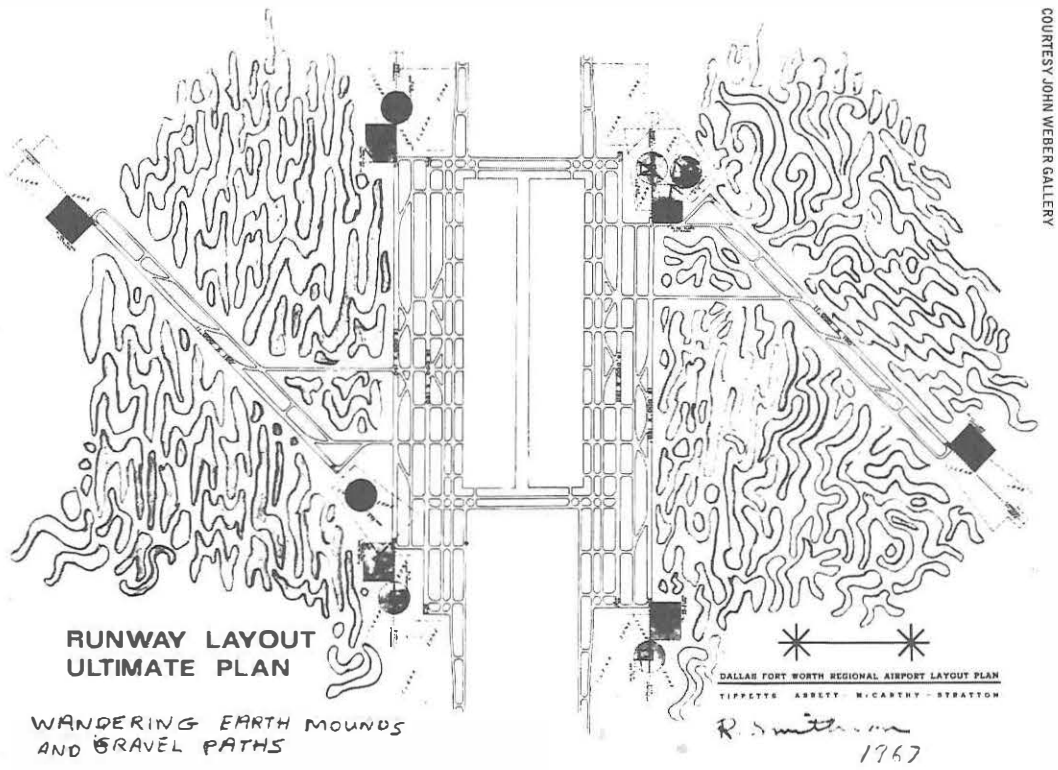
1 Gilles Deleuze, Foucault (Paris: Editions de Minuit, 1986), 51.
2 Ibid., 42.
3 Ibid., 44.
4 Gilles Deleuze, Francis Bacon: Logique de la Sensation, (Paris: Éditions de la Difference, 1981), 66.
5 I refer the reader to my book L'oeil cartographique de l'art (Paris: Galilee, 1998) where I reconstruct the history of the cartographic "eye," its geoaesthetic and its reality effect from the 16th century up to the contemporary cartorama. On this question, see my essay "Abstraction: from Marcel Duchamp to Cartography" in trans (New York: 1997) and the catalogue of the Linz and Bergen exhibitions, Atlas Mapping (Turia Kant, 1997).
6 Robert Smithson, The Collected Writings, ed. Jack Flan (Berkeley, University of California Press, 1996), 177.

More than an abstraction, the diagram is a field of resonances and virtualities, an abstract which explores an experimental thought of possibilities. Be it a diagram of knots, interlacings, combinatory or labyrinthine circuits, folds and unfoldings, the diagram is connected to a topological space in which interior and exterior, forward and back, empty and full, ordered and aleatory are inseparable. The diagram has haunted art from its beginnings to the present day. The clasps and labyrinths of Celtic art, the interlocking patterns of Islamic decoration, and Indian mandalas are all magical diagrams which express, through their infinite figures of divinity, different levels of a real at once sacred, cosmic, and architectural. But by the same token, we find a diagrammatic activity in the work of a painter such as Vermeer, whose grids were made by crossing strings attached to fixed points on a horizon line.

Just such a diagrammatic quality of drawing manifested itself widely during the 1960s, when the idea was at the core of artistic practice. I am thinking, obviously, of the combinatory and axiomatic structures of Sol Le Witt, such as the 192 drawings with numbered lines of the 1968 Wall Drawings. The combinatory activity here is Leibnizian because it refers to combination understood as a science of variations from lines or notations, identical yet diverse. Similarly, we find diagrams of logical and compositional structures that anticipate light in drawing. Between place and nonplace, the diagram is already a virtualizing operation, a "geographic" and topographic abstraction which constitutes a place. As Dan Flavin put it, "I have come to understand that for me drawing and diagramming are mainly what little it takes to record thought, however, to whatever use, whenever."[7] In giving form to thought, the diagram unites the finite and the infinite and organizes the power of a place in advance.

It is useful to conceive of the diagram following the tradition of Orseme or Leibniz and reworked by Deleuze in The Fold as an abstract of possibilities and not of forces. The diagram enacts a threefold structure: cutting actions, an abstract figuration, and an experience of thought which "folds" complexity in order to better "unfold it" on the plane of immanence. As Gilles Châtelet showed regarding diagrams in physical science, the diagram is an "allusive strategy" which "secularizes the invisible."[8] Any allusive strategy presupposes in-between spaces, a metaschematism where the object is objectile and the subject is subjectile. The diagram is an object which suggests something in the world by means of its components and their interrelationships, from a distance and angle that make the reference more or less explicit, like the geographic construction of "diagram blocks," for example, which are no more than the translation of the morphological map of the terrain into perspectival signs.

We can construct or program only by introducing or injecting intervals into a territory. At its limits, the "experience of thought brought to completion is a diagrammatic one."[9] Or, to put it differently, the diagram is an inflective ideality if "the inflection is an ideality or virtuality which only exists in the soul that envelops it."[10] Inflection as diagrrammatic model is thus the "pure event of the line," "an intrinsic singularity." The diagrammatic abstraction is first and foremost, since any geographical site implies a plurality of figures and possibilities. In this sense, drawing aims to "diagram a limitless space, free from possible inflection and anterior to the delimited space of fixed objects," as Bernard Cache shows in Earth Moves.[11] This anteriority reminds me of the allusion to the infinite in landscapes and in the Chinese and Japanese aesthetic, more evocative and discriminating than visual. Klee's Villes Flottantes [Floating Cities] and Cette étoile enseigne l'inflexion [This Star Teaches Inflection] come to mind as well. The abstraction of the landscape prior to landscape implements the oblique path of a spatial negativity, an entire art of line and interior rhythm.



COURTESY JOHN WEBER GALLERY

Robert Smithson, **Dallas-Fort Worth Regional Airport Layout Plan: Wandering Earth Mounds and Gravel Paths, 1967**; blueprint with collage and pencil; 15 1/2 x 11". Collection Estate of Robert Smithson.

Conceived thus, the diagram leaves the world of fixities and substances, of objects and essences. It is no longer simply a "play of forces" enclosed in an expressive structure, but rather a pure, operating abstraction formed of flux, networks, and projections. But this is still saying too little. For in essence, the diagram is taken up in the movement that goes from the place to the virtual, a movement in which it finds maximum and ideal expansiveness. The place does not carry the geographic fixity of the site. Indeed, it is a "locus," as Leibniz would put it: an intensive space reduced by perspectives and subject to floating, unattached zones. This is what many contemporary architects call the "between two" (Bernard Tschumi), the "in-between" or "interstitial" dimension (Cache), the "becoming clothing," or even the electronic, floating "postephemeral" (Toyo Ito). The diagram has been used so many times by art and architecture precisely because it reponds to the construction of liberated volumes, floating in Icarian weightlessness through an abstract architecture of possibility, in which heterogeneous and disjointed spaces are superimposed.

We can thus see that The Fold inaugurated a thinking of diagram different from that contained in Foucault. The diagrammatic activity is hereafter situated within a "geophilosophy," within a movement and between territory and deterritorialization that moves from territory to Earth and vice-versa. Otherwise, this Earth, the object of all cartographies, cannot be projected onto the plane of thought, onto the screen in nonfinite coordinates. As Deleuze put it, there are "infinite diagrammatic movements." Infinite in the strong sense, since it is always a matter of finding degrees of abstraction, a putting into space that calls forth "diagrams of the possible." The diagram temporalizes form by opening it to the aleatory, to complexity, even to suspense, and to what the Japanese call Mujo (impermanence) or Mitate (to see as). In

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7 Dan Flavin, Drawings, Diagrams and Prints (Fort Worth, Texas: Fort Worth Museum, 1975).

8 Gilles Châtelet, Les Enjeux de Mobile (Des travaux/Seuil) 33, 36, 267.

9 Ibid., 36. The experience of thought is "an experience of permutation of the places of nature and understanding," linked to the initial act of cutting away.

10 Gilles Deleuze, Le Pli, (Paris: Éditions de Minuit, 1981), 21.

11 Bernard Cache, Earth Moves, trans. Anne Boyman, ed. Michael Speaks (Cambridge, Massachusetts: MIT Press, 1995).

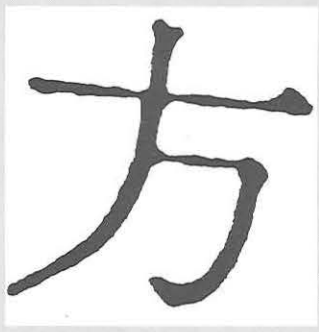
this "to see as" of the trajet such as that of the Zen gardens that inspire Richard Serra, the gaze is inseparable from the route [parcours] and from visual fluidity. Indeed, one could oppose a static spatiality of the finite object to a dynamic, temporalized spatiality in which the process is infinite. In the latter, the movement is one through the fluidity and disconnection of virtual space, through disjunctions, foldings, and unfoldings.

One, then, can clearly understand why contemporary painting would be fascinated by this diagrammatic and cartographic abstraction that is so different from pictorial modernism. Jackson Pollock derives from this inflective abstraction point-folds and tangled interlacings more than the ambivalent powers of the Euclidian grid. In essence, the new pictorial abstraction reinscribes the powers of the technological virtual into painting by creating heterogeneous spaces, multiple connections, disconnections, and undecidable zones. From Lydia Dona's diagrams of desire and war to Jonathan Lasker's chaotic knots to the inflections in ribbons and organico-artificial micro-beings by David Reed, the diagrammatic has seized upon an impure post-abstraction which seeks to grasp the world in an analogical manner. Likewise, urban, territorial, and sexual artifacts creep into the paintings, which become like plateaus composed of a thousand strata.

Such is the power of the diagram in art: to offer a model of abstraction that opens up an aesthetic of immanence and suspense, a "geoaesthetic" that offers all its force in Rilke's formulation, "We do nothing but pass like an exchange of breezes."

LINES OF WORK: NOTES ON DIAGRAMS

Andrew Benjamin



COURTESY THE ARTIST

Lines and diagrams would seem to be distinct. Even though the line may work within the diagram, each has its own specificity. On one level this distinction is clear. And yet, the distinction is held in place by an identifiable ground: the field of representation. There is a coincidence of a number of apparently distinct terms once representation determines particularity. This is not to suggest that line, diagram, plan, etc., are not different but rather that the ground of the difference is a pervasive sameness. Evidence of that sameness is the relatively unproblematic move from "modes of representation to the actual building."[1] One interesting consequence of this position is that it is only with the enforced abeyance of representation, understood as that which determines the field of their operation, that the real particularity of the diagram and the line would begin to emerge. The important point in light of this possibility that is not simply the problematic status of representation within architecture but that allowing representation centrality precludes any real consideration of actual particularity. Allowing for the identification of the specific will take place here in terms of tracing the consequences for the line and the diagram once the possibility of experimentation is introduced. A beginning can be made, therefore, by allowing representation a retained centrality – retained only in order to plot its limits – to confront the possibility of experimentation.

The opening question must be the following: Is there a link between the line and the diagram and the possibility of experimentation? The immediate answer must be that there is not. Lines and diagrams represent and therefore cannot sustain experimentation on their own terms. By definition a representation always refers to what it re-presents. This formulation entails that lines and diagrams are held in a relation where their identity and status is determined by what they are not. Moreover, the realization or instantiation of what they represent needs to be understood as a form of completion. Experimentation is precluded in regard to the work of lines and diagrams once they are articulated within the framework of representation and the envisaged necessity of forms of completion. Were a line or diagram to become an experimental site then – excluding the insistence of the pragmatic – it could no longer be a representation since it would have given up that determining hold in which identity is determined by a relation to an outside. Consequently, answering the opening question concerning the possible relation between lines, diagrams, and experimentation in the affirmative necessitates a reformulation of both line and diagram. In the place of the complete there must be the incomplete. The latter is not the mere negation of completion; in fact, another type of completion will have to emerge. The incomplete signals the possibility of the continual reworking and opening up of the line and diagram. The presence of the space of experimentation emerges when neither is taken as complete in itself. The abeyance of completion marks the limits of representation. And yet, the incomplete is not failure. Rather, it is the inscription of the reality of a productive negativity within the field opened by both the line and the diagram. These notes are an attempt to sketch some of the issues at work in such a possibility.[2]

CLOSING LINES

The line already marks a space; it marks it out by dividing and creating space. And yet, a line neither draws nor plots out of necessity. The diagram need neither present nor hold to the spatial possibilities of something other than itself. Nor, for that matter, do lines and diagrams exist as ends in themselves. There may be a possibility other than that demanded by the literal. Nonetheless, the history of the line as representing, as standing for, and thus as acting out is there at the posited origin of painting. The origin as a question should not be taken as bringing considerations of truth into play (as though there were a truth about the nature of the line that comes to show itself through a concern with the origin). Rather, the origin – the question of the origin – works to stage the emergence of different beginnings. Why, then, begin with the origin? The answer to the question is straightforward. However, the response does not lie in the demonstration that any origin is only ever putative and therefore not an origin at all. The *aporia* of the origin is not the issue. What is of interest is the conflict concerning the origin. Origins – and there will always be different and incompatible origins – stage different possibilities.

Pliny's account of the origin of painting explains the first mark in terms of the drawing of a line that holds as present – and thus will hold as present – that which is absent. While his text, as he indicates, is not directly concerned with the origin, he nonetheless suggests that there was little disagreement among the Greeks that painting "began with tracing an outline round a man's shadow" (*Natural History* XXXV. v.14). The drawing of the line as the origin of painting links the line to the work of representation. In addition, it opens up the way the line is more generally understood. Representation rather than being seen as an end itself, is more nuanced and is therefore more detailed. Representing, the activity of re-presentation, stages an opening articulated in terms of oppositions. The

1 This is a point argued with great clarity by Catherine Ingraham in Architecture and the Burdens of Linearity (New Haven, Connecticut: Yale University Press, 1998).

2 For further work in this area see my "L'informe quiz forte: Batallte, Deleuze and Architecture" in D: Columbia Documents of Architecture and Theory (1997) 6: 90–100.

opening is already there is Pliny's formulation. At the origin, between the shadow and the figure, there is an opening. One is not the other. The shadow marks the presence of what it is not. And yet, this opening has particularity since the shadow also posits a closure to the extent that the shadow is interpreted as the immediate presence of the one who cast the shadow. (The mediation here has to do with time. Allowing for, even suggesting, immediacy is, of course, the fantasy within representation. As fantasy, and thus as the mark of a certain desire, immediacy is already mediated.) The shadow differentiates itself, and yet the act of differentiation allows for an identification – perhaps a reidentification – of that which originally cast the shadow. With the absence of the one who cast the shadow the opening is then reinforced, while the closure is envisaged.

Closure, here, refers to the demands made by the incorporation of the line, diagram, etc., into the structure of representation. Within that structure a line marks both itself and what it is not. A diagram supposes a realization in which the envisaged object is what the diagram is taken to represent. Instantiation or realization would close the openings which are themselves already present if the line or diagram are taken to represent. Lines and diagrams, from this perspective, work within the interdependence of absence and closure.[3]

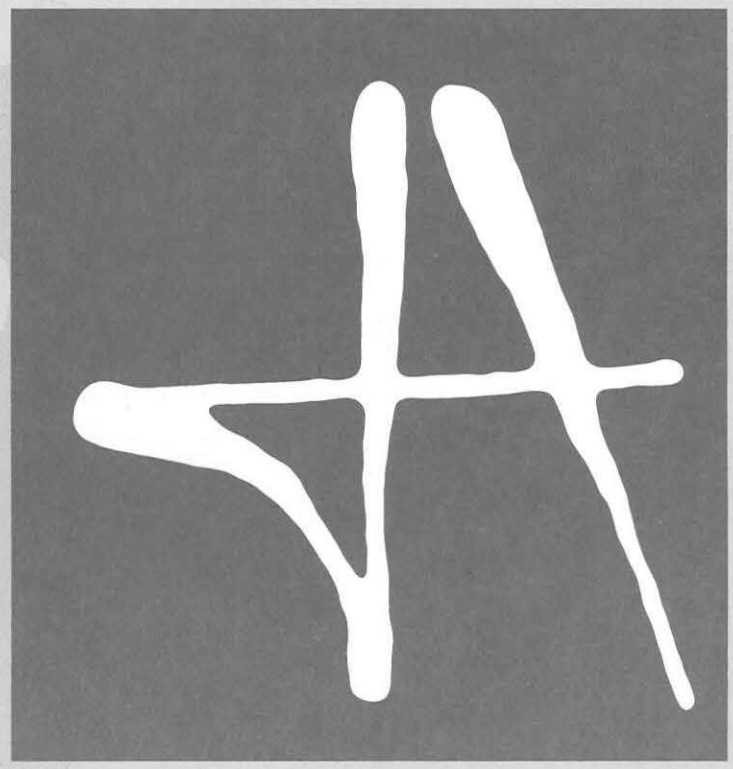
While absence predominates, the closure is still posited insofar as the line now tracing and marking the absent figure presents that figure and thus allows for its reidentification. With reidentification a closure is effected even though it is a closure tinged with loss precisely because it is impossible if thought as absolute. What this particular story of the origin stages, therefore, is a relationship between line and shadow in which there is an opening. The line endures holding a relation to the one who has gone. It is as though there is an inescapable doubling of loss. In more general terms, therefore, representation creates an opening for which a subsequent closure is also envisaged. Openings and closures are interarticulated with the enforcing work of absence (as always, it is an absence given to be overcome).

These openings occur in different sites. Each site involves the effective presence of a specific type of opposition. This particular form of opposition is characterized by its having been formulated in terms of a distance to be traversed (the oppositions both overlap and implicate each other). The oppositions presence/absence, model/real object, and plan/building, for example, instantiate a specific desire and thus specific forms of operation. The desire is the possibility that one side of the opposition holds and presents what the other side either is or will be.

At the origin of painting, the image of the one who is absent has to be the actual likeness of the absent one. The image has to stand for that which is not there. The image has to present it and therefore has to be its re-presentation. In the case of the model/real object opposition, the model will have to have become the real object. The plan becomes the building (thereby securing the position of model and plan as always other than the object but only after the event). Plan and model stand for what is absent but only on the condition that presence is possible. The dictates of representation are such that movement across the divide defines activity. Moreover, it defines the way either side of the opening is to be interpreted. In other words, representation determines the way both the line and its instantiation are to be understood. That this is the interpretive setup is evident from the predominant question stemming from the presence of the divide, a divide that has to be understood as the opening within representation and thus which also functions as the source of representation. The question that each opening sets into play concerns how the divide is to be crossed; how, that is, is the opening to be closed? This question is already marked by a form of necessity. Once the line or diagram is given with the structure of representation then this question is ineliminably present. It presents that version of the incomplete that is determined, again out of necessity, by the need or desire for completion. What cannot be sanctioned is the incomplete taken as an end in itself.

Responding to the demand for closure is, as has already been intimated, to turn the plan, drawing, model, or line into that which can only be explained within the structure of representation. It should not be forgotten that this structure allows for its own negative instance: namely, a series of drawings, models, plans, etc., whose interest is determined by the claim that they have purely presentational force. They could, for example, be taken as either fantastic possibilities or utopian projections. In both of these instances the fantasy or the futural projection would have been identified from within the structure of representation. They present re-presentation's other possibility: its impossibility. As such, undertakings of this type remain on one side of the opening. Gesturing to the impossibility of the realization of the desire for completion, they become representation's negative instance. Impossibility, within this formulation, is no more than the negative instance of possibility. One is defined in relation to the other. What this means is that the possibility of retrieving the line, of allowing the diagram another possibility, is not to be interpreted within the terms set by representation's positive or negative dimensions.

REPRESENTATION – MELANCHOLIC SPACES



Representation stages its own limits. In order to chart its limits it is of fundamental importance to allow representation to dictate both positive and negative in-stances. The reason for this importance is linked to the description, already given, of the divide that has to be crossed and which forms, from within the interpretive purview of representation, an integral part of an account of both the drawing and diagram. A plan marks out what is going to be present. This means that representation dictates that the plan or the diagram hold that absent presence in place. There is, therefore, a certain futurity inscribed in the existence of the plan or diagram. It is precisely this particular determination that is at work in the suggestion that the origin of painting is linked to the outline of that which is necessarily absent. Impossibility does not check representation; it is explained by it. Allowing for this particular formulation of the possibility of impossibility is to reiterate the work of absence and thus to delimit the plan or diagram as a melancholic space. Such an eventuality is the potential within representation.

3 Another history could be introduced at this point. In it the line would be directly incorporated into the history of geometry. It should not be thought, however, that the abstract line is necessarily distanced from the work of representation. For an important study showing how that relationship operates in the writings of Descartes see Claudia Brodsky Lacour, Lines of Thought (Durham, North Carolina: Duke University Press, 1996), 49–68.

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The introduction of melancholia here is intended to identify the way that representation demands a particular conception of that which demands completion. The demand of representation is inescapable. Moreover, it is precisely this demand that underlies what has already been identified as the coincidence of line, diagram, and plan within the determining structure of representation.

The place of absence and with it the forced retention of this melancholic place mark what can be described as the limit of representation. Limit here is not that which is problematic within representation; it is not representation's own *aporetic* possibilities. The identification of limits pertains to propriety and hence to what is proper to representation. Here, what is of primary concern is the opening and hence the link between line, drawing, and diagram and a pervading sense of absence. Absence signals the interpretive demand. As has already been intimated, what that means here is that the site of interpretation is marked by what it is not. This quality – the "what it is not" – needs to be linked to the future. The "what it is not" is connected to the "what it will be." Melancholia predominates in the precise sense that the site itself is marked by loss – at the present, for the future – even though the object of loss, what it is that has been lost, cannot be specified in its own terms (the lack of specificity has to do, for the most part, with the nature of the difference between the media in which the present and the future are staged).

This definition of the site– the determination of the site as given through loss – has a number of interrelated consequences. Two are central here. The first concerns the particularity of the line, drawing, plan, etc. Loss means that which lies in what it is not. The subsequent realization, be it reidentification or building, reinforces the ascription of loss. (If there were the time, a far more detailed examination of what is involved in any attempt to give greater particularity to what is designated by "subsequent realization" would have to be undertaken.) The second consequence concerns how the line or drawing is to be interpreted. These two consequences are related insofar as what arises with the second are the results of definitions that involve no more than simple negations. What has to be taken up – here in outline – is what emerges in the departure from this structure of negation. In the place of the enforcing hold of loss there is a conception of the incomplete understood not just as always already incomplete but as given within its own economy. Once the incomplete is viewed as a mark of production, the incomplete brings with it its own generative capacity. (As will be suggested, it is precisely this possibility that arises in the move from a formulation of the ontological in terms of stasis to a conception determined by the centrality of becoming. However, this conception of becoming has to be one that retains the movement to form. There cannot be pure process without the move to form. With mere becoming form is precluded and therefore its architecture is continually deferred. Allowing for form as interarticulated with movement and therefore with the centrality of becoming is the potential within Leibniz's theory of the monad.)

Rather than cross the divide, and thus rather than allow the desire to cross the divide and unify what would otherwise have been an opposition to determine the structure within which the line or diagram is to be understood, another possibility emerges. It arises to the extent that negation is fundamentally reworked in terms of the incomplete.

The distance being staged here is between a structure in which there is an envisaged movement from the presentation of what is yet to be, thereby defining that presentation as the representation of what it is not, and the subsequent realization or instantiation of that earlier representation. The yet-to-be comes to be completed. Within this setup, the site defined in terms of negation (and which allows for the ascription of melancholia precisely because it is defined in terms of loss) both envisages and demands its own subsequent negation. In other words, the incomplete demands to be completed; loss insists on its own overcoming. Allowing for the incomplete cannot be given within the opposition of incomplete and complete. The incomplete has to maintain itself as such. Maintaining here is necessarily interarticulated with production. It is this position that has to be developed.

LINES OF WORK

Representation is defined in terms of a certain conception of negation. Allusion has already been made to this conception in terms of the "what it is not." Within this formulation the diagram and the line are what they are because they allow for their instantiation in a form other than their own; they allow for a completion in a time (the future) that is not theirs. Having been completed – completed in the sense of having been instantiated – both the line and the diagram are necessarily devoid of possibilities. They lose their capacity for investigation or research and therefore their capacity to be the site of experimentation because they are precluded – the preclusion is the consequence of interpretation – from retaining a generative quality. This does not mean that the possibility of experimentation is linked to the incomplete, but that experimentation needs to allow what has been taken to be a representation to sustain a generative quality. With the strict operation of representation – moving as it must from the incomplete to the complete and thus from the present to the future – this quality is denied, because lines, diagrams, and plans are taken as demanding their own completion and thus of having been completed (again, it is essential to allow for the coincidence of plans, diagrams, and lines within representation). What predominates here is a conception of negation that is linked to its own overcoming through the act of completion (either real or envisaged). Neither the truth nor the viability of this setup comprise what is central here. Centrality has to be given to the demand for the act of completion. Realization precludes experimentation precisely because it is the mark of the act of completion; or at least that is the demand that is made.

There is a twofold movement at work here. Representation denies that either the line or the diagram could present possibilities resisting completion. Moreover, to the extent that either were allowed this capacity, then neither the line nor the diagram could be interpreted within the determinations given by the work of representation. How then does it become possible to account for the work of lines and the field of activity given by the diagram?

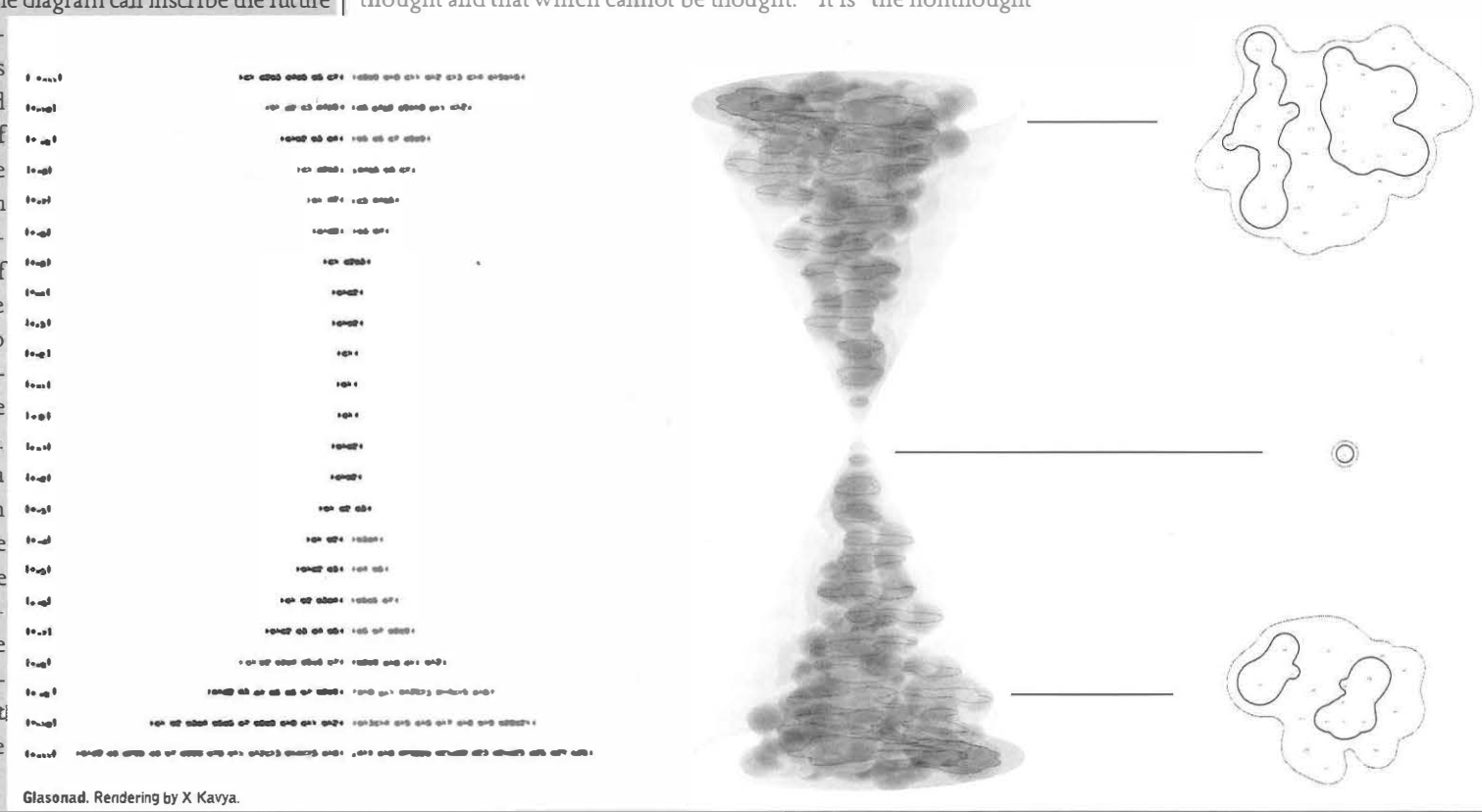
The term haunting the structure of representation, haunting it precisely because it defines its most essential determination, is melancholia. Representation is marked by loss. However, what is absent cannot be named as such; moreover, it cannot be readily identified. The desire of representation is for that which completes it and thus what is given in re-presentation is the lost object. Representation insists on a completion that cannot be identified as absolute. It is tempting to suggest, therefore, that it is always ruined in advance. Here melancholia works with the ruin of completed form. Taken as the defining term, loss restricts activity by limiting the range of work.

There is, however, another ruin. Neither ruined in advance nor the ruined form of what already stood. Beyond the strictures of the melancholic turn there is the ruin that yields form. It is not the ruin of form but the ruin that forms. This ruin that demands the abeyance of any problematics of loss is the diagram or the line once freed from the need to represent. Rather than open out by trying to stand

for what they are not, the line and diagram open up within themselves. Allowing for the continuity of this opening, allowing for the continuity of an opening resisting absolute finality and thus an enforcing completion, is to allow both line and diagram to take on the status of plural events.[4] Plurality here does not refer to mere semantic overdetermination. Rather, for the diagram or the line to take on this status they would become the site of an ontological irreducibility. They would, for example, articulate the determinations of the Leibnizian monad.

The monad always presents itself and can be perceived as such in a particular form at a particular time. Nonetheless, the monad is always more than this formal actuality. The "more," though, is not derived from links to the monad. On the contrary, it is internal to the monad itself. The monad "is" – is itself – in its continual opening up within itself. It plots and replots itself. It could not be described as the continuity of an opening without end unless there were the fundamental recognition that the monad is, at the same time, an endless opening always having a particular form. It is the copresence of continuity and discontinuity of form and the generation of form of instantiation and becoming. With the monad these terms are taken as coexisting and therefore are not mutually exclusive. Presentation is always an effect of an economy of production. As an economy – a production of endless completion opened by the effective presence of the incomplete – it allows the monad to become the diagram. With this move, one that in general terms is occasioned by the diagram having the ontological status of a plural event, it becomes the site of experimentation. The diagram is the place of a mapping and remapping in which finitude is always an effect of an ineliminable infinite.

Two points need to be made in conclusion. In the first instance, once freed from the need to represent, the line and the diagram work as ends in themselves. This is not intended to preclude pragmatic necessities. Rather it is to allow for the emergence of the diagram as a plotting of complexity – a complex of relations – that is always more than the addition of elements. The conception of complexity at work here is the moment of realization occasioned by the lines in question but which the lines cannot be taken as representing. At that moment the diagram emerges freed from its original need to present what is not there. What this means is that the diagram can inscribe the future into the present because that possibility is itself part of the present's own self-constitution. The second point opens up a further limit. If within the diagram, each line is are given a different weighting such that speed and time define the presence of the line – a geometry of movement rather than that of mere place – then the intersection of two lines, while appearing in any diagram as the intersection of those lines, will always have been more. The nature of the intersection as a staged irreducibility defined in terms of time and speed marks the impossibility of representation. The diagram works within itself allowing a continual reworking within the incorporation of different weightings. Diagrams and lines stage that work and therefore are able to be redefined in terms of lines of work.



Glasonad. Rendering by X Kavya.

4 I have tried to develop this term in a number of different places. See in particular The Plural Event (London: Routledge, 1992).

THE CONE OF IMMANENSCENDENCE . . .

Karl Chu

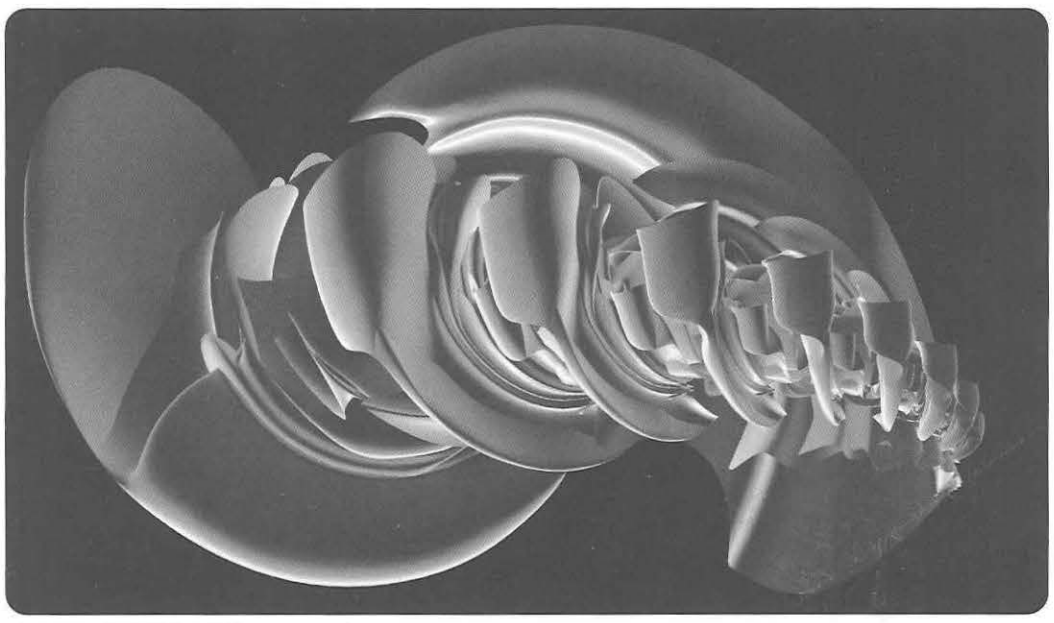
. . . *God has no sons.*

—Anonymous

Let this be yet another renewal of the plane of immanence by thinking of it as a leaf of the cone of immanenscendence. The plane of immanence holds a fundamental position in the philosophy of Gilles Deleuze and Félix Guattari (D/G), and a whole chapter is devoted to it in their book *What Is Philosophy?* The plane is conceived as neither a concept nor an object but as a necessary abstraction that establishes the plane of immanence as the invisible tablet upon which a host of interrelated concepts is actively played out to form a machinic philosophy of multiplicities. Not the least significant among these concepts is their notion of the diagram. A renewal of the image of the plane would therefore effect the image of diagrammatic features registered on the plane. The plane of immanence is an image of thought which is constituted by the construction of concepts, according to D/G. Concepts are events defined as concrete assemblages analogous to the configurations of a machine, whereas the plane is the abstract machine of the absolute horizon of events. D/G interpret diagrams as trackings of dynamic movements, while concepts function as intensive ordinates of these movements on the plane. Since concepts are tribes that populate the plane, it would necessitate a different image of the plane if it were to be occupied by some other entities such as monads with a different logic of construction and behavior. The plane of immanence is the plane par excellence that serves as the ground or planomenon upon which the infinite movements of thought, lines of flight, and rhizomatic formations are portrayed as diagrams or directions within the vector space of the plane "that rolls them up and unrolls them" in a single gesture that engulfs the One-All.

The plane of immanence therefore is an ontological construction of the possible spheres of being compressed onto a single plane of thought. D/G describe the plane as "that which must be thought and that which cannot be thought." It is "the nonthought

within thought," and "the most intimate within thought and yet the absolute outside – the not-external outside and the not-internal inside of thought." It is a supreme act of philosophy, according to D/G, to point out the nonthought within thought by showing that it is there. By also bringing into relief the necessity and difficulty of thinking about immanence without invoking the transcendent that would make the plane immanent to it, they have shown what thought can claim by right and the construction of the plane of immanence as an authentic image of its own making. Such is the nature and scope of the plane of immanence as delineated by D/G. The plane, however, resonates with the distant echo of the chaosmos proposed by Anaximander. In this pre–Socratic version, the cosmos is conceived as a self-organizing entity that engages in a perpetual revolution within itself while being suspended in a timeless and spaceless zone of eternity without genesis. Even though the plane of immanence is described as an abstract machine by D/G, the idea of a metagenetic basis for the emergence of possible worlds is withheld as a virtual reserve awaiting further explication.

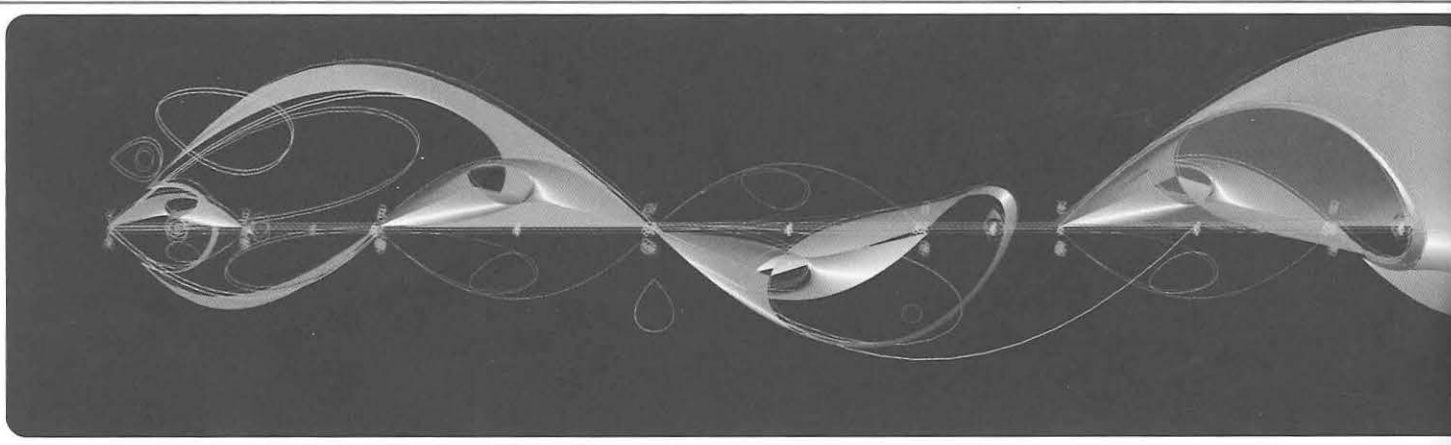


Phylogon. Rendering by X Kavya.

COURTESY THE ARTIST

To think the plane of immanence anew is to start from the unthought within its suppositions: prespace that is prior to any thought of being. It is anterior to any notions of presence or becoming, and it evokes an unconditioned sense of pure passivity that is more ancient than time itself. It is in this sense that the reality of prespace coincides with the nonthought within thought as that which cannot be thought. Otherwise, the plane of immanence is liable to be posited as a given somehow waiting to be appropriated by the advent of philosophy as its homecoming. Prespace, which can only be expressed in symbolic terms, is the black light that gives light to the light of being. Without depth or extension, it is the primordial nothingness that resides within the metaphysical point that is the absolute monad. Its nature can only be obliquely referred to as the One beyond being that is the cause of itself, an impossible designation due to the radical nature of alterity that is transcendent and unintelligible to all claims. It is neither the One nor the All; it is the supreme act of vacuum genesis. It is the convergence of transcendent cause into immanent cause through a primal catastrophe or singularity that projects an infinite substance or consistency to form the cone of immanenscendence while concealing the reality of prespace within the veil of nothingness at the very moment of its inception. Nothingness is the primordial effect or symptom of the ontological difference between prespace and the sudden explosive adventure of genesis that marks the announcement of the gift of being as the instantaneous occurrence of a bi-conditional directive: an emission that projects only through the simultaneous withdrawal of itself back into prespace. As a metaphysics of emanation, it channels out attributes of the absolute monad into the cone of immanenscendence through the process of generative condensations that subsequently crystallize into constellations of monads. The plane of immanence is an emergent phenomena out of this condensation, a phenomenal act that stages the becoming conscious of cosmic reason through the markings of the appearance of intelligence as a threshold in its passage toward the absolute. Its nature is essentially genetic to the extent that prespace withdraws itself in order to allow for the manifestation of possible worlds. Space-time is the extensive domain procured by the development of these primitive monads as they participate in the construction of the plane of immanence as a world unto itself.

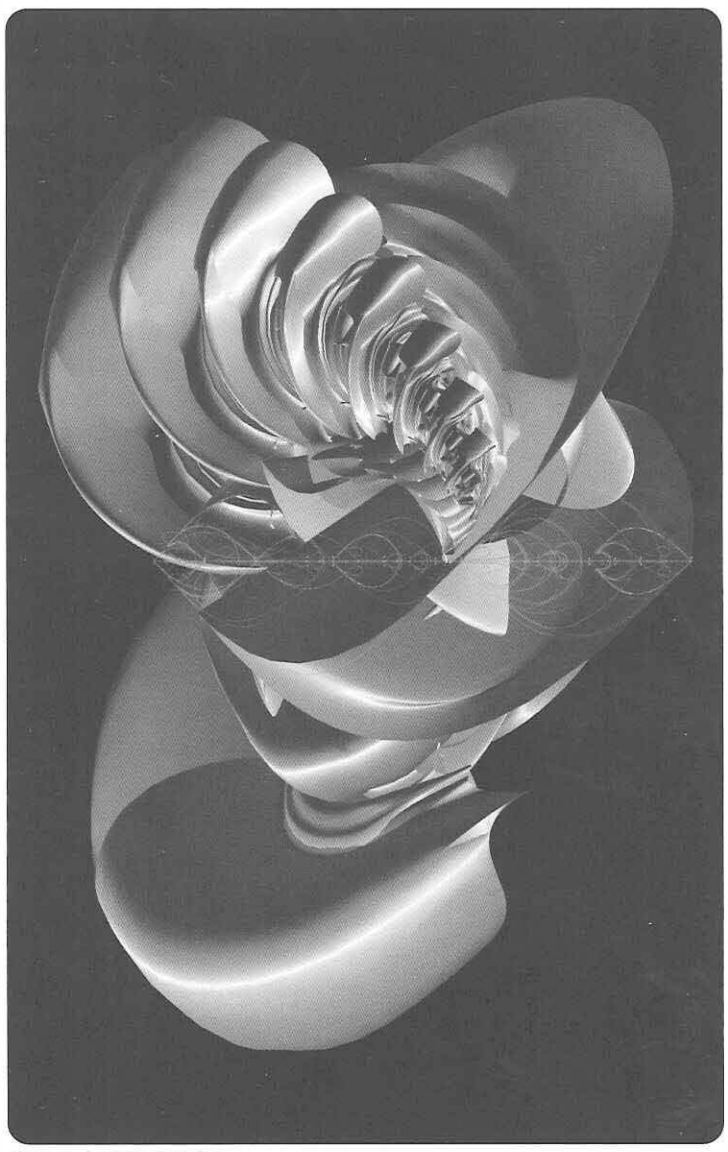
The cone of immanenscendence is the medium of substantiation, of the pyromaniac dissemination of the absolute infinite that knows no bound. Immanenscendence is neither ascendence nor descendence but explication of conditioned indetermination, or real potentiality, as Alfred North Whitehead would relate to it, into attributes and modes that give expression to a possible world out of an infinite number of possible worlds. Each world occupies a plane as the absolute plane of immanence that is immanent only to itself as an emergent singularity. From the standpoint of genesis, the plane is immanent to the cone since the cone, in Kantian terms, is a regulative totality that appeals to a transcendental illusion and, therefore, is outside the domain of possible experience. Based on whose experience? Even the substance of Spinoza is outside of empirical experience. Spinoza requires the claim of thought to embody substance as its constitutive mode of being, as well as of the world, and thereby making substance immanent to itself through a differentiation of attributes into modes. The plane of immanence is immanent to thought that conceives it, but the cone of emanation is the precondition which creates the possibility of thought itself. The cone is the object of contemplation that re-introduces the transcendent by making the plane immanent to the cone. How else can thought conceive of emergence out of a precondition, especially of itself, if not through the expression of modes that condense and crystallize into thought? Thought cannot simply be construed as the instrument of the cogito which engages in auto-affirmation of the self by bracketing the cogito away from the world, nor can it be so conceived as to be directed only toward external objects severed from its constitutive mechanisms of understanding. Thought is an emergent expression along the lines of *tele-kaustos* or reception of a preceding materiality that has become the other of thought within thought and which at once sustains thought while withholding itself from thought. Radical empiricism, on the other hand, refuses to take measure of that which is not available within concrete experience, and thus holds a skeptical relation to causality, transcendent or otherwise. To avoid the slide into dogmatic slumber, Kant was compelled to invent an exemplary idea of pure immanence, a transcendental unity of apperception within consciousness that provides the basis for a priori synthetic judgments. The cone of immanenscendence, however, is only transcendent to the extent that it is an inference that posits metaphysical realism to the cone, the Universal Abstract Machine of genesis, as the progeni-



tor of possible worlds independent of any observers. The image of the cone can only be inferred from the plane and the image of the plane inferred as a projection of the cone.

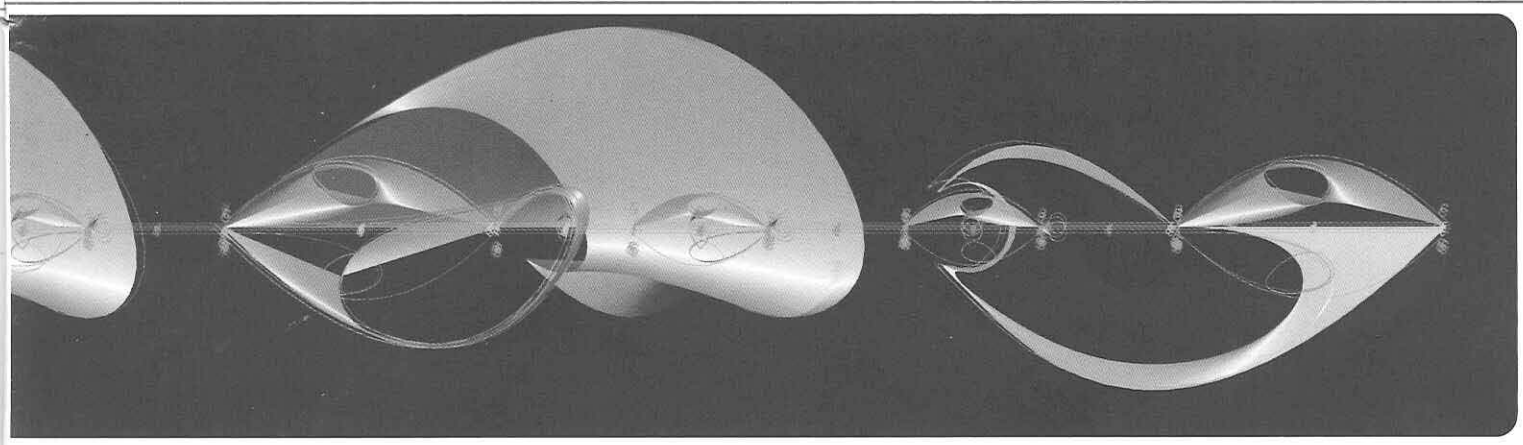
The plane of immanence is a fluxstratum that stages the monads of the world into a cohesive spectrum of dynamic correlations. The plane is neither an object nor a concept, as D/G have shown, but rather a nonobjective *planomenon* that is constituted by event-structures evolving on the plane. Each plane is a generative construction out of the anarchic milieu of chaos by monads based on the principle of combinatorial expansion. Monads, according to Leibniz, are microautomata propelled by metaphysical force, and they function as dynamically induced constructive agents rather than as morphing entities. Monadic regimes are created through massive autocatalytic reactions of microautomata percolating on the plane of immanence to form a hierarchical spectrum of reality structures through the embedding of lower dimensional structures in higher dimensional structures. Their collective heterogenesis gives rise to various emergent phenomena and phase transitions leading to the construction of higher-order entities and intelligent processes. However, when diagrams are interpreted only as dynamic flows or movements within a vector field, their behavior is limited to a form of diagrammatic dynamism or state transformative processes that merely transform states of affairs exogenously without issuing any novel entities or, in Whiteheadian terminology, *concrescence*. In and of themselves, they are incapable of generating emergent organisms because interacting entities are understood as the temporal and spatial change in the magnitudes of quantitative variables. Diagrams, conceived as state transformative processes, signal only the changes in position of singular points or elements within the vector space of the plane and not the construction of the plane itself. In dynamical constructivism, which is based on the monadic transformation of genotypes, the development of complex organizations or hyperstructures is achieved through the causal linkage between the internal structures of objects and the actions through which they participate in the construction of other objects as events. Without the logic of construction, it would no longer be possible to endogenously induce a motion in the combinatorial, albeit nomadic, space of possible objects or species. The plane of immanence, conceived from this angle, yields an implicate structure that takes on the function of a genetic machine that processes bits into a phylogeny of species and life forms. The same oscillation of hypercycles that resonates on the plane is mirrored and nested within specification regimes of each species. This is the inner pulse of every heartbeat that harbors a strange attractor as the soul of each species. Each attractor is an ambient ring with a knot topology and is dynamically linked to adjacent rings, thereby forming a pulsating fabric of reality that is the plane of immanence. The plane is immanent to itself only after the advent of life and of consciousness (a cogito) that has already begun to construct concepts of understanding, both of itself and of the world. Each plane is not only immanent to the machinic composition of concepts, or self-organizing schemata, but also immanent to the compulsions and computations of microautomata that co-evolve into a spectral fusion of hyperstructures within the plane.

It may seem to be paradoxical that the existence of the cone of immanenscendence is predicated by the very existence of the plane of immanence that is only immanent unto itself, however, each is a reason for the existence of the other. Since the plane is a projection of the cone, the two are essentially different aspects of the same reality. As such, the cause is already explicated in the effect and the effect implicated in the cause through an alternating mode of differentiation that engenders emergent cycles of possible worlds. There is a reciprocal nesting and complication of the plane with the cone in such a manner that the plane of immanence is a leaf, or "worldsheet" that evolves from the cone at a multitude of scalar and specification regimes of immanence. The vibrational modes of the worldsheet consequently impel the plane to twist and turn and fold the crystallized attributes of the cone into a multilayered torus with holes, thereby revolving the worldsheet into a toroidal vortex that converges at infinity. From this concentration of infinite density, it once again emits the cone of immanenscendence to form yet another recursive projection of the absolute horizon of events – a theater of the world that knows of its existence only from within the plane of immanence as a singularity. The worlds it projects and constructs are permeated by reflection spaces caught within crystallographic structures that recursively map onto themselves as reflections within the chromogenic patterns of the worldsheet. The plane with its virtual hyperplanes compressed into the plane of intelligence is a shining leaf of immanence that inevitably focalizes at the absolute infinite only to emit yet another cone of immanenscendence. Such is the audacity and nature of the cone of immanenscendence, which ceaselessly revolves and projects its substance into an infinity of attributes by generating conditions of possibility for the construction of the plane of immanence at every turn. Every emission is an ejection of a possible world that is different in every manner and in every way from every other possible world. The cone of immanenscendence together with the plane of immanence forms the reality engine or the Universal Abstract Machine of reality. The plane of immanence is the absolute state of affairs for a given world and the cone of immanenscendence is the cone of emission that projects an infinity of possible worlds.



Phylogon. Rendering by X Kavya.

Every construction of the plane is a projective inscription in the book of immanence. "Literature reveals what revelation destroys," remarked Maurice Blanchot. The inverse of literature is the recursive series of bits syntactically iterated by the Universal Turing Machine. The Church/Turing Thesis, which defines the limits of computability, both logical and physical, states that anything that is computable can be computed by the Universal Turing Machine. The Turing Principle, an extension of the thesis in its strongest version as reformulated by David Deutsch, claims that it is possible to build a virtual reality generator whose reper-



Phylogon. Rendering by X Kavya.

toire includes every physically possible environment. This principle, in conjunction with the eschatological thesis of the omega-point theory (first proposed by Frank Tipler and later reinterpreted by Deutsch from a computational standpoint), postulates an infinite number of computational steps made possible by an unlimited supply of energy near the moment of gravitational collapse. There, according to one of the current cosmological models, an infinite number of oscillations of the increase and decrease in deformation of the geometry of the universe (the three-dimensional analogue of the surface of an ellipsoid) would occur. Together, the Turing Principle and the omega-point theory provide the most provocative sustenance to the construction of a principle of sufficient reason for the virtual ontology of the plane of immanence.

"We never perform a computation, we just merely hitch a ride on the great Computation that is going on already," according to the computer scientist Tomasso Toffoli. The Universal Turing Machine therefore is an instrument of revelation. It is an instrument that discloses the deep embedded structures of reality through a recursive generation of bits, but leaves open the semiological dimension of meaning, which it is incapable of computing. It is an irony of the Turing Machine that it can write only under erasure in order to arrive at significance or logical depth. The cost it entails for the differential incarnation of form in bits, an immanent version of metempsychosis, is in the consequent production of entropic chaos and ignorance as it erases part of its memory in order to make room for further processing (except at the omega-point, where it finds itself with inexhaustible computational resource). Nonetheless, the space hollowed out by the Turing Machine along with the chaos it left behind is the space of metaphysical desire that is traversed by the poetics of literature. Even literature, in its eagerness to fill this space, partakes in the so-called "insane game of writing," an insight of Mallarmé, that opens up writing to writing and, in so doing, risks concealing the nonabsent absence that is the primordial space of inscription. The Turing Machine, with all its pretensions to inscribe the book of the world within bits even at the omega-point, not only fails to compute the space of literature but is also circumscribed by the mere fact of being physical. The laws of physics are constituted and fine-tuned in such a way that they could give rise to the Turing Machine which, in turn, can compute those very laws of which it is an expression. This is a self-consistent loop that presumes physical laws to be timeless eternal truths. However, if the universe represents maximum potential variety, it would not only generate the richest variety of organized forms but it would also allow for the laws of physics to evolve with the universe, thereby raising the question of the computational limits of the cosmos. Even in a universe with fixed laws, the domain of what is logically possible to compute extends beyond what is physically computable. That fact, though, does not even come close to addressing what is logically impossible to compute. Beyond that vast space of the logically non-computable, we don't have the slightest clue except through the glimmer of a plastic intuition which Spinoza describes as the thrid kind of knowledge that is the highest form of knowing. The book of the world is perpetually written and rewritten because of the absence of the Book. The cone of immanenscendence is the perpetual writing machine that emits and generates the plane of immanence as a page in the book of the absolute infinite. Let this be yet another renewal of the plane of immanence as a leaf from the cone of immanenscendence.

THE DIAGRAM AS TECHNIQUE OF EXISTENCE

Brian Massumi

I.

"We judge colors by the company they keep."[1] Colors are convivial. "A" color "is an alteration of a complete spectrum."[2] However lonely in appearance, a color is in the company of its kin – all its potential variations. The spectrum is the invisible background against which "a" color stands out. It is the ever-present virtual whole of each color apart.

II.

"I was in a totally white room. As I held the prism before my eyes, I expected, keeping Newtonian theory in mind, that the entire white wall would be fragmented into different colors, since the light returning to the eye would be seen shattered in just so many colored lights. But I was quite amazed that the white wall showing through the prism remained as white as before. Only where there was something dark did a more or less distinct color show. . . . It required little thought to recognize that *an edge was necessary to bring about color*. I immediately spoke out to myself, through instinct, that Newtonian theory was erroneous. . . . Everything unfolded itself before me bit by bit. I had placed a white sheet of glass upon a black background, looking at it through the prism from a given distance, thus representing the known spectrum and completing Newton's main experiment with the camera obscura. But a black sheet of glass atop a light, white ground also made a colored, and to a certain degree a gorgeous specter. Thus when light dissolves itself in just so many colors, then *darkness must also be viewed as dissolved in color*."[3]

The spectrum is convivial. It is always in the company of darkness. The range of achromatic variation forms a larger encompassing whole against which the spectrum appears. "Colour and illumination constitute . . . an indissoluble unity. . . . One illumination with its colours emerges from the other, and merges back into it; they are both indicators and bearers of each other."[4]

Bearers of each other, triggered into being by an edge. The convivial edge of emergence: one line indicating all, presenting the continuity of variation that is the shadowy background of existence. And at the same time effecting separation: the spectral distinction of what actually appears. Merging; emerging. Virtual; actual. One line.

III.

"There must be a continuity of changeable qualities. Of the continuity of intrinsic qualities of feeling we can now form but a feeble conception. The development of the human mind has practically extinguished all feelings, except a few sporadic kinds, sound, colors, smells, warmths, etc., which now appear to be disconnected and disparate. In the case of colors, there is a tridimensional spread of feelings [hue, saturation, brighmess]. Originally, all feelings may have been connected in the same way, and the presumption is that the number of dimensions was endless. For development essentially involves a limitation of possibilities. But given a number of dimensions of feeling, all possible varieties are obtainable by varying the intensities of the different elements. Accordingly, time logically supposes a continuous range of intensity in feeling. It follows, then, from the definition of continuity, that when any particular kind of feeling is present, an infinitesimal continuation of all feelings differing infinitesimally from that is present."[5]

1 Trevor Lamb and Janine Bourriau, eds., **Colour: Art and Science** (Cambridge, England: Cambridge University Press, 1995), 149.
2 Jonathan Westphal, **Colour: Some Philosophical Problems from Wittgenstein**, Aristotelian Society Series, vol. 7 (Oxford: Basil Blackwell, 1987), 84.
3 Johann Wolfgang von Goethe, "Confessions of a Color Enthusiast," in **The Journal of Color and Appearance** 1.3 (November/January 1972), 35.
4 David Katz, **The World of Colour** (London: Kegan, Paul, Trench, Trubner & Co., 1935), 294.
5 C.S. Peirce, **The Essential Peirce: Selected Philosophical Writings**, vol. 1, ed. Nathan Houser and Christian Kloesel (Bloomington: University of Indiana Press, 1992), 323–324.

COURTESY THE ARTIST

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The enveloping of color and illumination in one another extends through the senses, each one bearing and indicating all. Mutually enfolding: a many-dimensioned, virtual whole of feeling is enfolded in every actual appearance in any given sense mode. Synesthesia. A color, smell, or touch is an emergent limitation of the synaesthetic fold: its differentiation. A color, smell, or touch extinguishes the whole in its difference. And in the same stroke presents it: as the totality of its own potential variations. All the befores and afters it might be, instantaneously. The distinctness of each present perception is accompanied by a vague infinity of self-continuity. An integral synchrony of befores and afters. Unbeen, be-able. Timelike, logically prior to linear time. In the limits of the present. Wholly, virtually, vaguely. Differentially. Edging into existence.

IV.

"Let the clean blackboard be a sort of Diagram of the original vague potentiality, or at any rate of some early stage of its determination. . . . This blackboard is a continuum of two dimensions, while that which it stands for is a continuum of some indefinite multitude of dimensions. . . . I draw a chalk line on the board. This discontinuity is one of those brute acts by which alone the original vagueness could have made a step toward definiteness. There is a certain element of continuity in this line. Where did the continuity come from? It is nothing but the original continuity of the blackboard which makes everything upon it continuous. What I have really drawn there is an oval line. For this white chalk-mark is not a *line*, it is a plane figure in Euclid's sense – a *surface*, and the only line that is there is the line which forms the *limit* between the black surface and the white surface. This discontinuity can only be produced upon that blackboard by the reaction between two continuous surfaces into which it is separated, the white surface and the black surface. The white is a Firstness – a springing up of something new. But the boundary between the white is neither black, nor white, nor neither, nor both. It is the pairedness of the two. It is for the white the active Secondness of the black; for black the active Secondness of the white."[6]

Something new: First. And with it, simultaneously and indissociably, a Secondness: a visible separation of surfaces. The separation is across an insubstantial boundary, itself imperceptible. Pure edge. Neither black nor white. Not neither, not both. A virtual line.

An insubstantial boundary does not effectively enclose. Quite to the contrary, it "actively" connects that which it separates. The virtual line is the *activity of relation* of the black and the white: a reciprocal coming-Second. It embodies the event of that pairedness. The pure edge invisibly presents the immediacy of spatially and chromatically differentiated surfaces to each other. That immediacy is also an immediacy of forms. The virtual line is the event of the oval and the plane coming-together: their belonging to each other. As protofigures to each other's oscillating ground.

"Like the ovum of the universe segmented."[7]

A perceptible difference has emerged from vague potential. The continuity of the virtual whole of be-ability has fed forward onto the plane of actual being-different. As been, the whole presents itself twice. Once: in the concrete surface continuity of black and of white. Again: in the pure abstractness of the invisible line separating and connecting the surfaces.

Surfaced, continuity is on either side of a divide. It bifurcates into a perceptual contrast between copresent and disjunct elements. A "copresence of disjunct elements": the definition of space. The "integral synchrony" of mutually enfolded befores is supplemented by something planely spatialized. A spatiality is emerging from that spatiality's own potential timelikeness. It has unfolded as an after, its before almost left behind. Continuity is no longer entirely in self-continuity. It is divided, supplementarily, into a double difference-from: direct contrast, spatial and temporal.

The cosurfacing of the oval and plane does not entirely detach from the continuum of potential. The insubstantial boundary separating and connecting them retains the vagueness of the virtual whole: neither this nor that. Neither black nor white, neither plane nor oval. Rather, the pure activity of their relating. Reciprocally, in their spatial separation. Recursively, in a kind of instantaneous oscillation joining the disjunct in mutual Seconding. Actively, reciprocally, recursively. Eventfully: the boundary preserves an edge of timelikeness. The virtual line is the virtual whole as it edges, imperceptibly, into the actual. Timelike continuity is drawn out of itself, cutting into the actual, where it appears as pure edging: discontinuity in person. Unenclosing, the line is not a boundary in the usual sense. It is spatializing (its timelike cutting-in constitutes the simultaneity of the surfacing disjunction). But it is not in itself spatial. The virtual line is less an outline than a *limit*. It is the processual limit between the virtual and the actual, as one verges actively on the other. The "brute act" of the actual and the virtual relating. Drawing each other, to the verge of formal definition. Contrastive difference is protofigural: emergently ordered, insubstantially bounded.

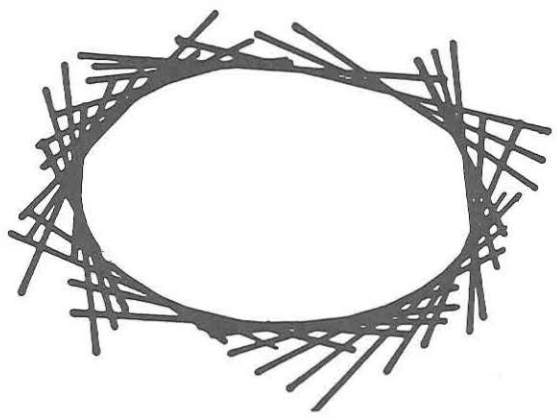
The defining limit of the protofigural is doubly an *openness*. On the level of actual being, it is the active reciprocity of differentiated forms to each other. Between that level and its be-ability, it is the openness of forms to their belonging-together, infinitely, continuously, indefinitely in potential.

The double openness is of relating.

"The line is the relation" (James, *Principles*, 2, 149).

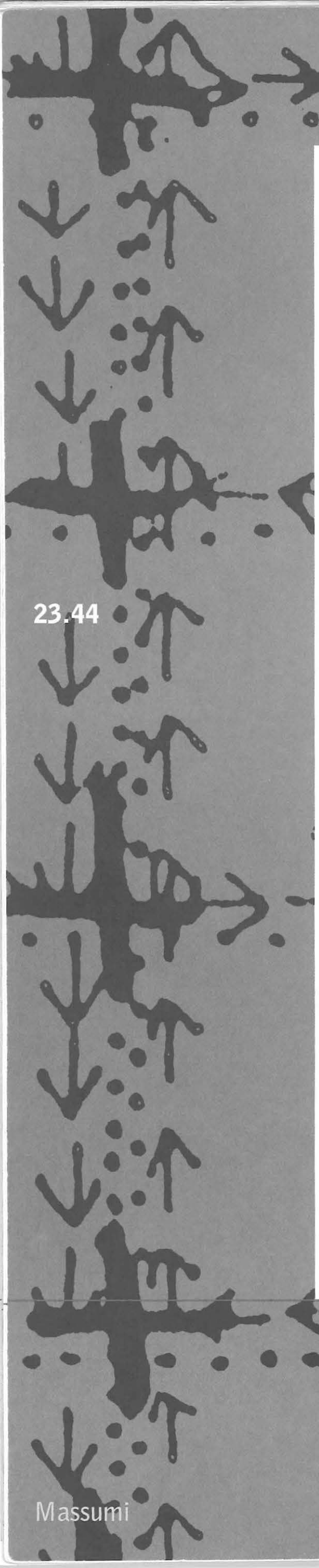
V.

Now multiply lines on the board, each succeeding mark intersecting the last at a set angle. A black oval now stands out distinctly against the white edging of the lines. Make the lines black ink and the background white paper. The effect is the same: a *figure* is distinctly visible. The proliferation of line-ovals has emerged from its own repetition into a super-oval.



The unity of the figure strikes the eye immediately, even though it is composed. It is a gestalt. Its figurative unity stands out from the multiplicity of its constituent marks. The edge has taken on a visible thickness. The line has propagated into an outline.

6 C.S. Peirce, **Reasoning and the Logic of Things** (Cambridge, Massachusetts: Harvard University Press, 1992), 261–262.
7 Ibid.



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The imperceptibility of each mark's virtual edge no longer presents itself, disappearing into the thick of boundaried vision. Separating more than it connects, the intervening boundary brings a palpable stillness to the figure it encloses. The reciprocity of black and white has settled into a *mediation* of surfaces that are qualitatively the same – white-inside separated from white-outside. The "activity" or eventfulness of the contrast is lost, along with its immediacy. What directly strikes the eye is no longer an invisible, yet vaguely palpable, oscillation evocative of infinite potential. Rather, it is the very stillness of the figure.

The stillness is distantly echoed, muted, in the white-outside. Mutual Secondness of black-Firstness and white-Firstness is replaced by muted subordination of white to white, same to mediated same. What comes with the edge is no longer a singularly direct, qualitative difference in perception, but an attribution of divergent *function* to sameness. The direct "pairedness" of pure, open contrast is replaced by an *opposition* of mediated sames as a function of perceptual closure. The white outside is limited to a passive backgrounding function for the inside's standing out. What remnant of activity is still palpable passes entirely to the side of the figure's standing. It is entirely spatialized. The edgy activity of relation no longer presents itself, only the stable disjunction of gestalt result. The oval appears to stand still in even stiller space, as if it had stepped out of time, even out of its own present. The still-standing figure stands for a species of eternity: a particular instance of a Platonic form.

The ovum of the universe as been. Hatched eternal.

Look closely, and you will still almost-see the invisible edge of each constituent mark. Use your imagination. Each mark is imperceptibly bounded by a virtual line. Thus the marks never effectively intersect. There are cracks between them. Since they do not intersect, they never actually form a boundary. Their iteration fractally multiplies the cracks, intensifying edginess. The unity of the figure is actually composed of a cross-proliferation of virtual cracks. The unity is abstract, superadded as a perceptual *bridge* across the cracking. The super-oval resulting from the bridging in-fill is not so much seen as *overseen*. Look closely and you will see the bridging, you will undersee the seething cracks. Activity, under-still. As the figure crumbles into the cracks it straddles, the background re-arises from its mute subordination. Whites and blacks re-become reciprocating protofigures to each other's oscillating ground, or grounding oscillation, their active contrast afloat in a deepening virtual abyss. Hatched eternity dissolves back into the still vaguely timelike spacing of precariously separated surfaces, mutually grounded in coflotation: reciprocally self-standing.

The fuller the unity of the figure, the more actualized the figure – the more multiply and intensely the virtual edges in upon it. The more passively the figure stands out in its unity – the more actively its multiplying constituents reciprocally self-stand. The undermining insistence of the virtual is a complementary and inverse movement to the actualization of the figure. The virtual is gestalted out of the picture by the same iterative process that fractals it in ever more deeply. Double articulation: of levels of protofigural activity and figurative annulment.

Double vision. Looking more or less closely, focusing more or less attentively, the eye oscillates between the annulment of the process and its activity. Flicker. Between fully hatched stability and continuing, cracked emergence. Flicker. Between the made and the making. Flicker. Between seeing the figurative stability and seeing the imperceptible float of figural potential. Flicker. The eye tires of the flicker. It habituates to bridge-level stability. The eye is the organ of habitual oversight.

The figure is a habitual inattention to the imperceptible in vision.

VI.

We have returned to double vision when we can say that "it is nonsense to talk of form perception." All the while acknowledging that the "nonsense" is directly and effectively seen. Or when we say that "the figure-ground phenomenon does not apply to the world." Even as we hang pictures on our walls. Or when we say "there is no special kind of perception called depth perception" because space itself "has nothing to do with perception." As we measure where the new sofa might go. Or when we say that "we perceive not time but processes."[8] Impatiently checking our watch.

When we say these things we are saying that form, figure/ground, depth, Euclidean space, and linear time are not foundations or containers of perception. Experience cannot be derived from them; it is they that are derived from experience. Experience cannot be contained by them; they are the contents. They are derivations of a more open process: superadditions of habit. Creatures of habit, not grounds of perception (which, as we have almost-seen, is actively self-standing).

This does not imply that we can turn completely away from formal stability. We still hang pictures. We can never, of course, literally see the imperceptible "ground" of potential over which the figure actually hangs. But then we cannot literally see the figure either. We see our fill. Vision is never literal, always figurative, in an outstandingly direct, overfull way. Acknowledging that does not concede potential and the virtual. For if we cannot see the imperceptible, we can sometimes see the flicker of the figure as it emerges from it. We can undersee the protofigural abyssing the figure. Seeing the figure's self-standing by underseeing it is as close as we come to glimpsing potential. We almost-see it, edgily side-perceive it, approaching the actual limit of vision.

VII.

How could we ever literally see a unitary form or figure when the light striking our eye is splintered into countless separate points by the rods and cones populating the retina? Fill in the gaps. How could we literally see a continuous surface-surround of space when our very own nose sunders our field of vision in two – not to mention the holes poked in both halves by the blind spot of each eye? Bridge it over. How could we see depth when our retinas are two-dimensional to begin with, even before what they register is poked, sundered, and splintered? Superadd it. We see unity of form in excess of our eyes.

What our eyes see, literally, is *edging*. Not only color, but space, time, figure/ground, and formal stability, in their reciprocal difference and on their respective levels, all emerge from the edge of illumination. For the simple reason that light scatters. Its scatter carries interference patterns, gaps, and gradients of intensity: lines of protofigural differentiation. This "ambient light array" is what literally strikes the eye (Gibson, 65–92). A chaos of vision. For not only does the array continually change, but a body is always moving: a complex coupling of two continual variations. Even more: the flicker almost-seen in emergent form is prefigured by jitter. "Nystagmus": the constant, involuntary microjerking of the eyeballs in their sockets. If the jerking stops, vision blanks out. Vision arises from the addition of random jitter to a complex coupling of two continual variations. How do unity of form, stability of spatial relation, constancy of color and brightness, and linearity of time derive from this impossibly complex,

8 Ibid.

chaotic condition? We already know the answer: by superadding to the seen.

The continual variation draws the protofigural lines of the ambient array across the gaps between the rods and cones, across the nose hole, and across the blind spots. The discontinuities are giddily bridged by a continuity of movement. The bridging does not yield a unified figure or stability of ground. It yields a complex of moving lines of light *continuing across* invisible abysses of darkness. Protobridges of continuity, self-standing, over a void of vision.

To get an emergent figure you need to add senses other than vision. In particular, touch and proprioception, the registering of the displacements of body parts relative to each other. Say a varying complex of light-lines comes to the eye with a change in proprioception. Intersensory conjunction: the first complex of moving light-lines segues into another. With the new complex comes a feeling from an outstretched hand: intersensory conjunction. Say the two intersensory conjunctions repeat. Next, their repetition is anticipated. Habit. The anticipation is recursive, since it arises retrospectively from an iteration of line crossings and conjunctions. Habit is the actual experience of a before-after, in a continuity of present conjunction. Of course there is also smell and hearing. A panoply of before-afters merge into and emerge out of each other, bearers one of the other, folded together by habit. The folding together composes an infinite continuum of potential conjunctions. A vague, unbounded virtual whole: the "ovum" of an experiential universe. "When any particular kind of feeling is present, an infinitesimal continuation of all feelings differing infinitesimally from that is present." "Development essentially involves a limitation" of that potential.

Say that on the level that limitatively develops, the two conjunctions just described will be experienced as seeing an edge (complex of light-lines), moving around it (proprioception), and touching something behind that was occluded but is now visible (new complex of light-lines). The new complex of light-lines is a second occlusion: there are still other things behind the thing behind. Focus on what the habituating eyes register: an edge, then an edge. After the habit has set in, the second edge will come with the first edge, in anticipation, before the movement around. It will *also* come after the movement. Double articulation: before-after. Of course, the second edge will come after the first differently than it preceded itself: with a touch and a proprioception. The before-after that is seen with the first edging is a simultaneous disjunction of surfaces: a germ of space. The anticipated coming-after is a germ of linear time. The self-difference of the second edge – the difference it encompasses between its coming after something else and its preceding itself – is the germ of its identity as an object: its predictability, or its sameness across its variations.

Experiments have verified that a "surface . . . being uncovered [is] seen to pre-exist before being revealed" (Gibson, 190). The *identity* of the object is seen. Again, with different emphasis: the identity of the object is *seen*. Identity is a recursive (before-after) unity added by habit to the sight of a simultaneous disjunctive difference. Identified, the edging associated with the object thickens into a stable contour. The light arrays habitually conjoined with the inside of the contour detach from the ambient array and come to be seen as the object's color. The color makes the object stand out, a visible figure gestalting its way into the brightness of being against a muted background onto which it casts its shadow. Form and depth emergent. The ovum of the universe segmented: into contrasting objects separated together in space and succeeding each other in time. "Of the continuity of feeling we can now form but a feeble conception."

When identity is seen, what is being seen is an anticipated touch conjoined with an anticipated proprioception conjoined with an anticipated second vision. The eye is functioning synesthetically to see the unseeable. To *oversee* touch, proprioception, and its own present. An anticipated touch, proprioception, or vision is a *potential* touch, proprioception, or vision. The overseen is unseen potential. The identity or simplicity of the resulting object has been limitatively extracted, or abstracted, from the complex chaos of vision. That chaos continues to be seen, feebly: underseen. It must continue, for the object to have something to reemerge from, as anticipated. Double vision: figurative or objective order out of iteration; and a continuing chaos of light. Vision oversees ordering abstraction by superadding habituated other-sense registerings to its own singular chaos.

The objective extraction of identity arises out of movement: coupling upon coupling of continual variation. Vision's synesthetic result stands on an oscillating kinesthetic "ground." Stability and order emerge from perceptual chaos, in the eye's passing from kinesthesia to synesthesia. Vision is the process of that passage from the giddiness of invisible, abyssal darkness to abstract oversight.

Each time eye-jitter draws an edge, a whole universe of potential abstractly appears to vision, and an objectivity is extracted from it. The edge is a synesthetic-kinesthetic relating of existential levels (actual and virtual or potential) and a separating out of objective identities (in time and space).

VIII.

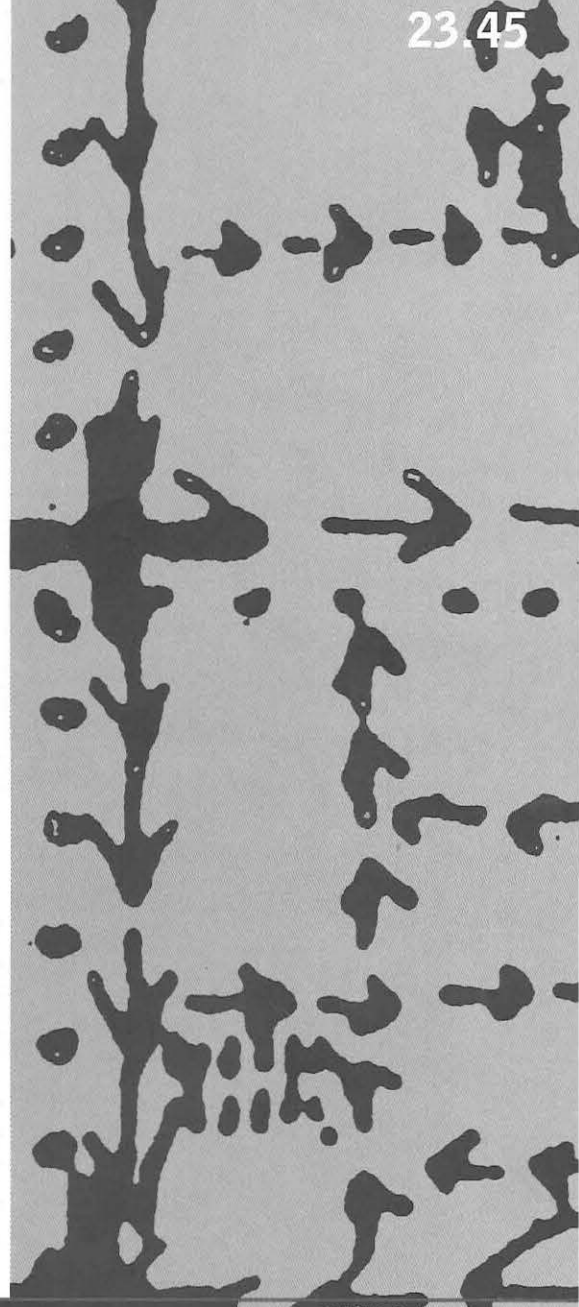
Draw a line on a piece of paper. The line repeats the edge. The line repeats the relating. "The line is the relating; see it and you see relation; feel it and you feel the relation."[9] You have opened a whole universe of protofigural relation. You have invoked the virtual. You have called the potential it enfolds into being. Nothing substantial comes of it. The potential is *only* felt (synesthetically-kinesthetically seen). But only felt is almost something. Which is quite enough for the being of the virtual. Any more and it would actualize.

Go for more. Draw more lines, until a geometric figure defines itself. You have figuratively closed the virtual world by selecting one from its infinity of felt potentials. You have limitatively actualized the virtual.

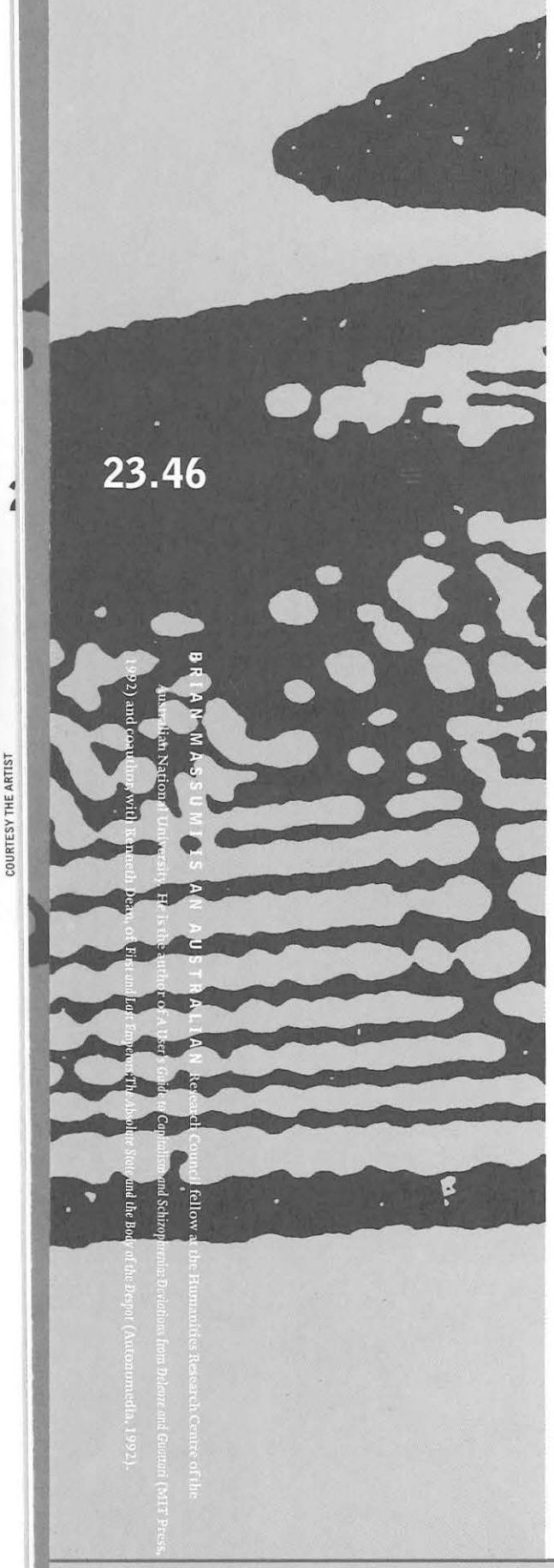
There is nothing to be done. Except to draw another line. And enclose its active potential in another figure.

At each repetition, you draw forth an infinite continuum of experiential potential, then deactivate it. You invoke active powers of existence, and enfeeble them. Renew, annul. Existential flicker.

The annulment of powers of existence is all the more enfeebling when more than one figure are laid side by side on a single page. The disjunctive germ-space of pure contrast, flickering with the timelikeness of each mark's virtual edge, disappears. The page is now a plane space of comparison. The identities of the outlined figures repeat each other, or fail to. Difference is no longer active. It is negativized as a "failure" to repeat. The contrast is now an oppositional difference: a planely separated either/or. Either/or is an opposition. An opposition is not a duality. Duality is the self-standing positivity of still-active contrast, pure unmediated "pairedness": the Secondness indissociable from the Firstness of a newness springing up. Either/or applies to the already-sprung:



9 James J. Gibson, **The Ecological Approach to Visual Perception** (Boston: Houghton Mifflin, 1979), 178, 66, 148, 3, 12.



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completed figures. Comparing them requires a mediation between their completions. For degrees of identity to be assessed, there must intervene an abstract notion of what the figures must repeat in order to qualify as repeating each other: a definitive idea, for example, of what ovals are, here and forever after. A standard . . . and the standard makes three. The mediating third term is ideal: purely overseen.[10] And overseeing: the correct selection. Activity has not entirely ceased. It is concentrated toward abstract oversight aimed at eliminating "failures." The space of comparison is a normative space of ideal Thirdness – triage – purified of visual chaos and of the synesthetic-kinesthetic vagueness of figural predefinition. The "forever after" of the ideal means that the selective ordering of Thirdness can be transposed from the surface space into time. Instead of laying two figures side by side on a single page, put one here on the page and project one into an indefinite future somewhere else. Take a cube, for example, and project it onto a plot of available land.

IX.

Architectural diagrams are conventionally thought of as occupying a space of comparison. Recently, the page has become a screen. Computer-assisted design draws a figure out of the ideal space of the architect's creativity and deposits it on the surface of the screen, then projects it into a built future. This use of the diagram is a normative modeling (no matter how "original" the figure).

All architectural design involves normative modeling. The completed diagram for a building meets standards imposed by client preference, cost effectiveness, zoning, and the architect's own stylistic preferences. The point is not to force a choice between the "either/or" of normative triage (oppositional difference) and the "both" of emerging potential (contrastive difference), or between either of these and the "not neither/not both" of the virtual line (pure difference). Making an either/or issue of opposition is just another way of enforcing opposition: paradox. Opposition returns in its own overcoming. Thus there can be no question of simply opposing or eliminating the mediated plane of figurative unity, or even normativity and ideality.

The virtual is also out of the question. It enters in – even into what it is not – regardless of the choice. Figurative unity and objective identity are a feed-forward of the continuity of the virtual whole, through line-surfacing to another level. The virtual always enters in, but is always qualitatively transformed into something actual. Unity and closure are not opposites of the virtual. They are its continuation on the level of its own annulment, figuratively transformed into a residue of itself. The virtual represents the necessity of that process: of the stilling definition of its seething existential vagueness. The transformative annulment of virtual's timelike "not neither/not both" is the completion of the figure toward the definitive existence of the object. We need objects. We also need linearity. It is a necessity of our own existence that the virtual's unmediated enfoldment of unbeen before-afters objectively unfold. And that it unfold, here and there, in a way that conforms to norms of shelter.

If the virtual necessarily figures in, then the diagrammatic choice operative in the architectural design process concerns the protofigural and the figurative. It does not bear on whether to have one or the other. The protofigural also always enters in (at every edge we see, with every mark we make). The choice bears on how to have both, how productively to affirm paradox. It is all a question of articulation, double articulation: how to play the belonging of the protofigural and the figurative to each other. This boils down to choosing how much to focus on the pure activity of the protofigural (the activity it takes up from the virtual whole in the person of the constitutive limit or virtual line). If the choice is made to focus in on the self-standing activity of the protofigural in the design process, then the next question is whether or how to signal it in the final product. This is the follow-up question of double vision: to what degree will those observing or entering the building be confronted with residue of the vagueness of the virtual? Will retentions of the protofigural make their vision synesthetically-kinesthetically edge out at strategic conjunctions? Will their bodies be jolted from habitual form perception? To what extent will they be delivered to the existential flicker that is, at any rate, the oscillating ground of all experience? To what effect? How much can a body tolerate flickered openness of being in a building if it conflicts, as it may well, with the enclosing norms of shelter?

The first diagrammatic question, that of double articulation, has received concerted attention from a number of contemporary architects. Grappling with that question involves inserting another phase of activity between the intention to build and the built result: between the origination of the design process and its end in a still-standing figure. The end-form of the building no longer flows in a straight, predictable line from intention to completion. Something cuts in. Protofigural activity comes between prefiguration and formal completion. It can have many avatars. Peirce's oval-line is just one image of it, useful for its relative simplicity. The marking of the "virtual line" doesn't have to resemble a line at all. In fact, in some ways it is better if it doesn't (the less it does, the less likely it will be confused with a visible figure or substantial form, the more likely it will be understood as a process). Greg Lynn's serial generation of self-transforming blobs is protofigural. As are Peter Eisenman's random acts of cut-and-fold, and Raggatt's low-tech blurring. The "mark" of the virtual can appear as a programmed proliferation of quasi-animate blobs, as an algorithm, or as a paper-shake on a photocopier (or as many other almost-somethings besides). The key is that an uncontrolled variation, an emergence untamed by normative standards, edges in between origin and end, and that this middling takes on a value of its own. If it does, the end result will be as much an extraction from that chanced activity of the between as the final realization of a design intent (much as the stability of vision is an extraction from its edging chaos). This gives the design process an experimental margin of autonomy. Architecture is endowed with a processual edge recalling the formative insubordination of the virtual line to the plane of its appearance. So if it is unrealistic, or at best paradoxical, for architecture to oppose, it can still be formatively insubordinate. If architecture has never quite lived up to its modern calling to be "radical" in the oppositional sense, it can at least say that it has learned to be experimental. Experimentation is the beginning of something radical, if that means the springing up of something new in the world.

How "radical" the experimentation is depends on whether something continues to spring, beyond the completion of the design project and even beyond architecture's disciplinary boundaries. It depends, in other words, on how the continuity of the virtual is fed forward, across the discontinuity of variational doses of chaos, into the intended form: as the building settles into the fabric of the everyday. This gets back to the question of double vision: how formativity, or the emergeability of form – its openness to itself as change – might live on, not entirely annulled, at the experiential edges of the finished form.

10 William James, Principles of Psychology, vol. 2 (New York: Dover, 1950), 149.

If the virtual line is the relating of figure to figure, form to form, object to object, as well as the relating of the edging-in of the virtual whole to its actual definition, of the protofigural to the figure, the formativity to the finished form, why can't ways be found to let it show or make it felt? If when the architect sees she sees relation, if when he feels he feels relation, why shouldn't those sheltered and even passing by be treated to a glimpse or brush of that flickering openness of being? If every time you make a mark, you have in some small way called forth an enfolded potential, if you have invoked the virtual, however faintly, why not let others build on that in their own lives after the design is "completed"? There are risks, because this involves asking others to live with a margin of quasi-animate incompletion and to put up with chaotic irruptions of generative vagueness in the most habit-ridden recesses of their lives. Such is the price of potential. Making explicit the feed-forward of the virtual is the risky gift of experiential potential. To the extent that architecture concerns itself with this, it is not a discipline. It extends into an ethos: an experienced ethic of inhabiting the given. The politics of architectural activity reenters at the ethological level, in how the givenness of inhabiting comes to be negotiated (in the double sense of "moved through by others" and "collectively modified").

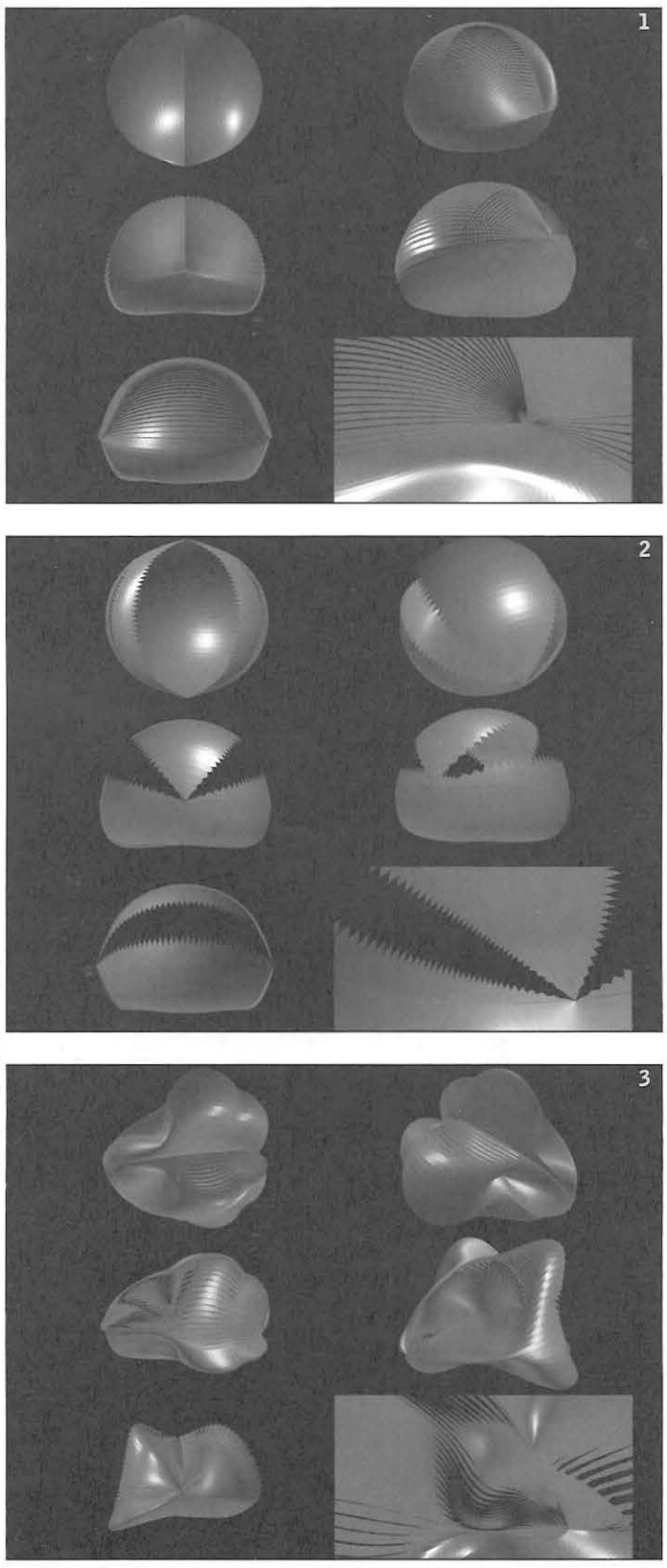
Grappling with the question of double architectural vision requires acknowledging that the diagram is a *technique of existence* and that design is always collective. Architecture will always benefit from the application of powers of formal analysis. But its basic medium is not geometry, or topology, or CAD, or design in general, or critique, or any other formalizable field. Its basic medium is the field of *experience*. As approached, collectively, convivially, from the edge of emergence where color, illumination, figure/ground, depth, space, and linear time mutually enfold and in the same stroke reciprocally differentiate onto respective levels of objective existence, bearers and indicators of each other. The mutual bearing on one another of these differentiating levels is the properly aesthetic aspect of architectural activity. The aesthetics of architecture is inseparable from its ethics. Because, as a collective technique of existence, the architect's professional activity rests on precisely the same oscillating ground as everyone's "natural" perception: the synesthetic-kinesthetic edge of experience. Design is as natural a function as stretching out a hand to an anticipated touch. Or (what amounts to the same thing) "natural" perceptual functioning is as diagrammatic and artificial as design. Experience makes a habit of over-reaching itself, continually superadding form-completion to the openness of experience – much as design makes a profession of it.

Make the over-reachings flicker, together. Come what may.

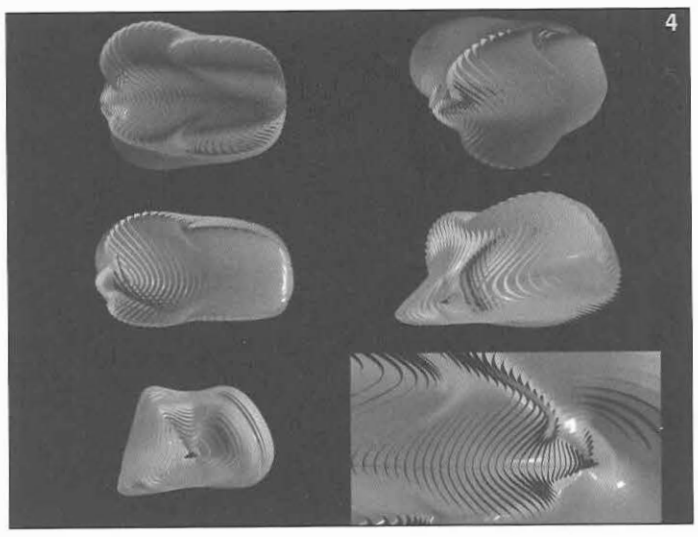
EMBRYOLOGICAL HOUSING

Greg Lynn

In the history of modern architecture, especially regarding housing, building has been conceived as an assembly of independent parts, or a kit. In this study, a surface of over 3,000 panels is networked so that a change in any individual panel (or "part") is transmitted throughout the whole, that is, throughout every other panel. A set of controlling points is organized across this surface so that groups of these generic panels can be effected to bud into more specific forms or what we call nodules. In every instance of this surface there is always a constant number of panels with a consistent relationship to their neighboring panels. In this way no element is ever added or subtracted. In addition, every element is inevitably mutated so that no two panels are ever the same in any single or multiple configuration. These panels, with their limits and tolerances of mutation, have been linked to fabrication techniques involving computer-controlled robotic processes. These include high-speed water jet cutting of metal and rubber, stereolithography resin prototyping through computer-controlled lasers, and three-axis CNC milling of wood composite board. In this way the limits and numerical constraints of computer controlled robots are also built into the software, giving the panels their limits of size and shape.



1–5 Variations of the surface showing the budding and elaboration of the surface in specific regions. This study includes a strategy of opening the surface without the punching or cutting of windows. Instead, openings are either "torn," generating a series of "shredded openings" in the surface, or the surface is "offset," generating a series of "louvered openings" in the surface.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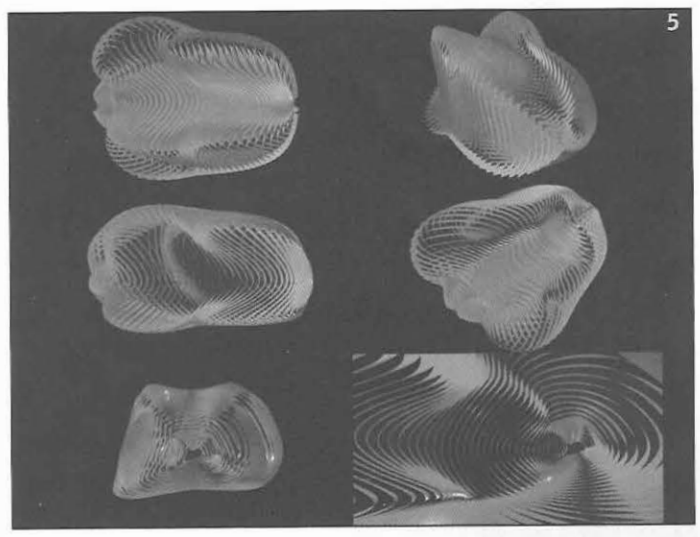
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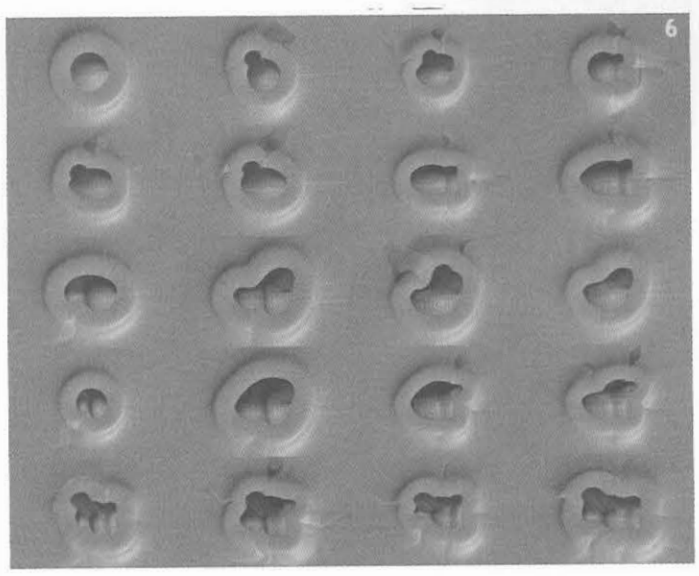
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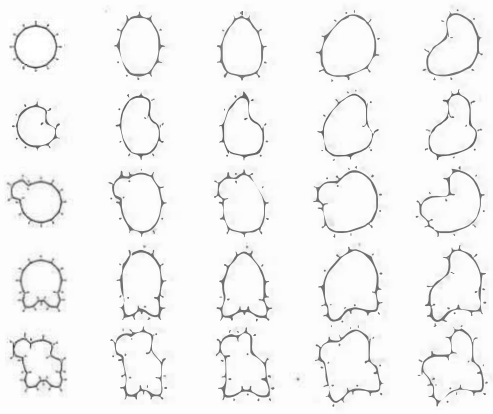
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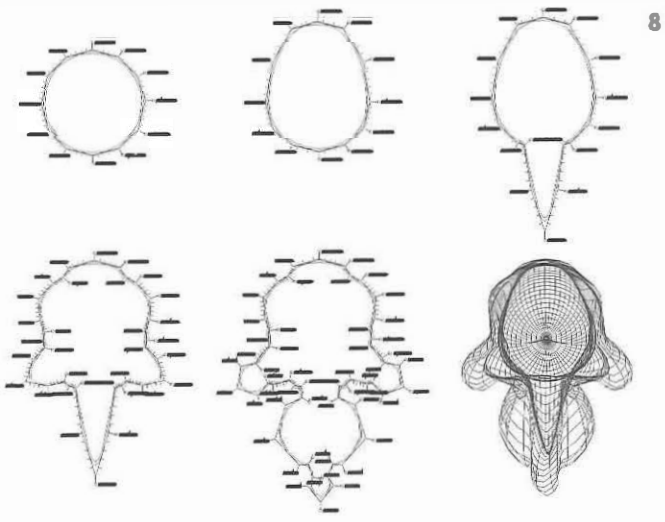
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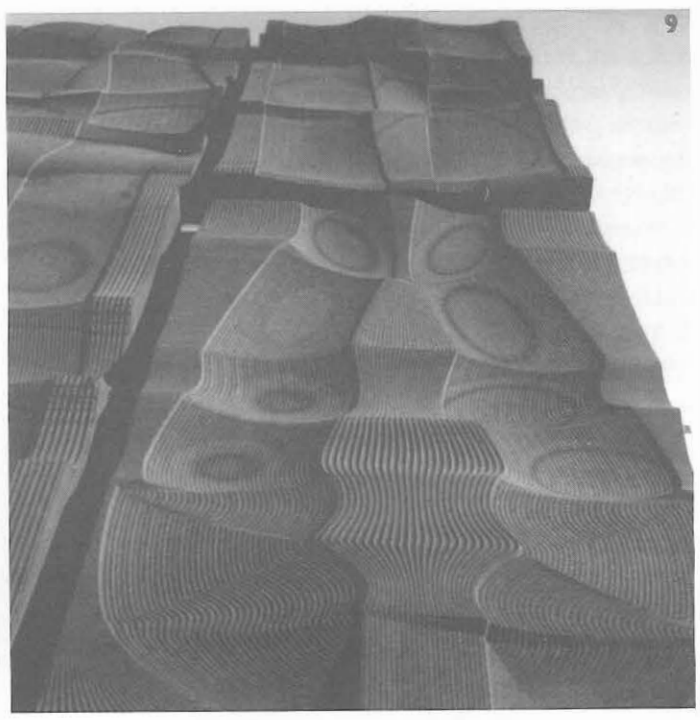
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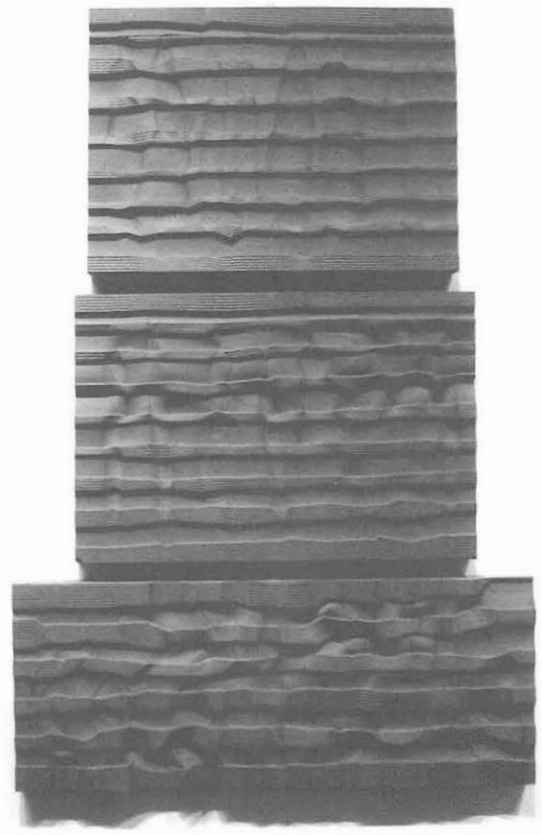
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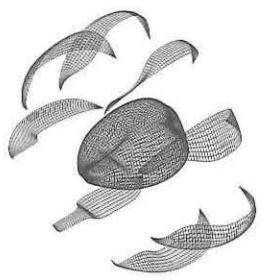
6 The surface envelopeswere connected with a landscapeso thatany alteration in the objectwas transmitted onto a ground surface. For instance, a dent or concavity in theenvelope generates a lift or plateau in the ground. In this way a deformation In the object has a corresponding effect on the field aroundit, facllitating openings, views, and circulation on a potential site.

7–8 This shows the hierarchy of controlling points used to shape the 3,000+ panels. A hierarchy of control points was used such that an increase in information involves the specification of each panel's position. A low level of specificity uses control points that interpolate the position of panels with fewer control points.



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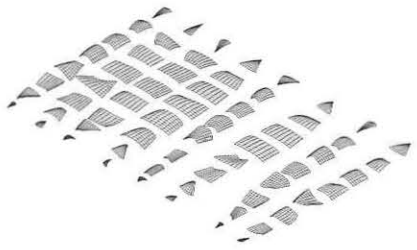

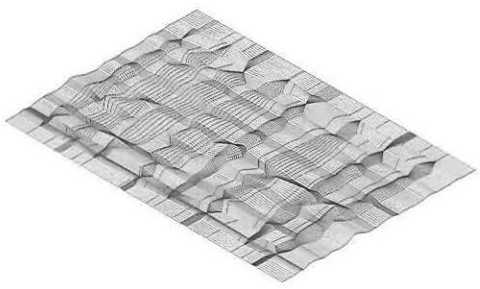

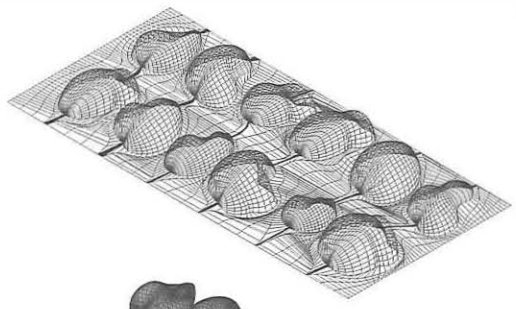

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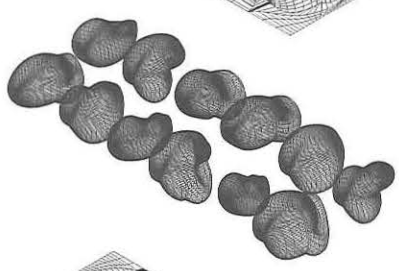

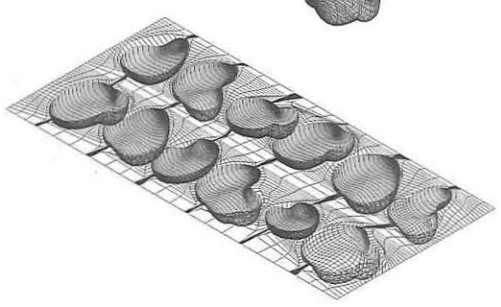

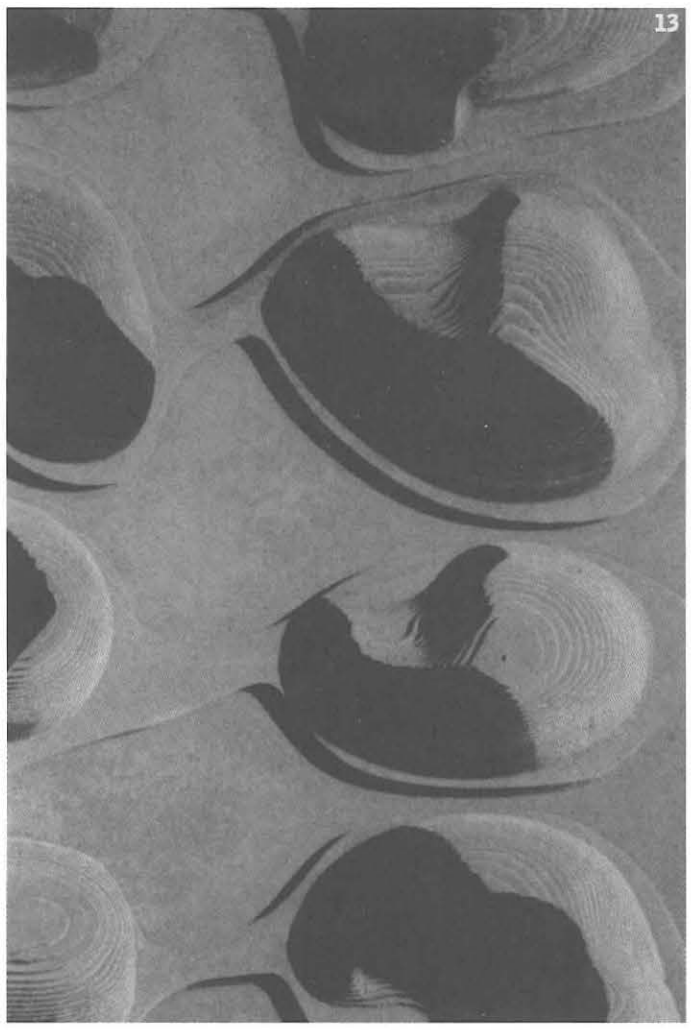

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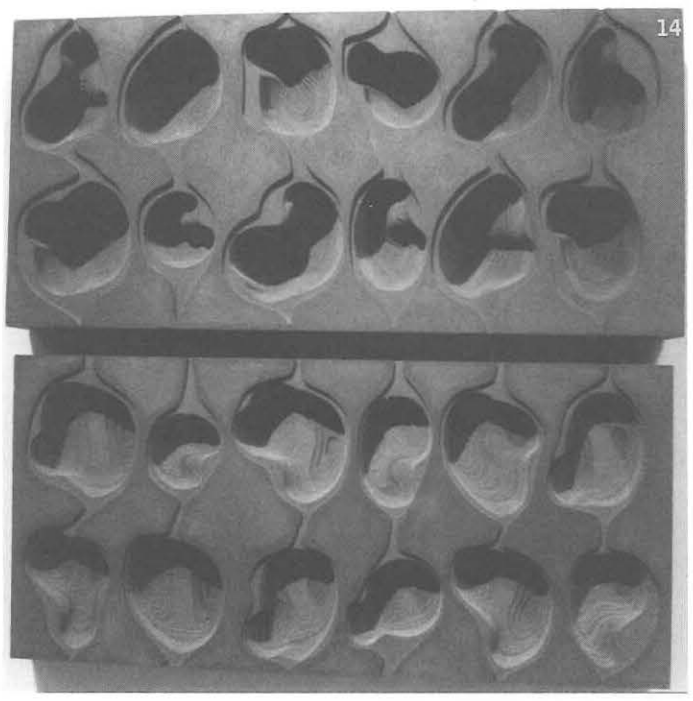

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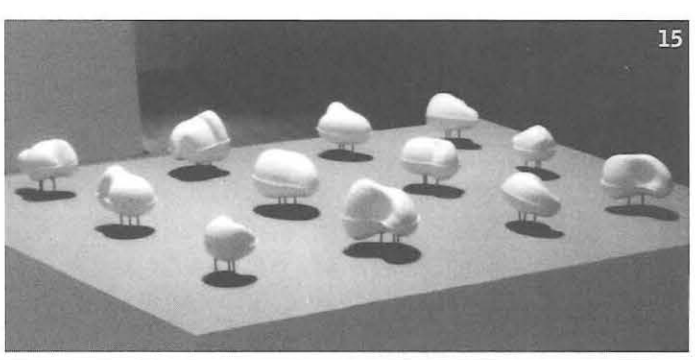

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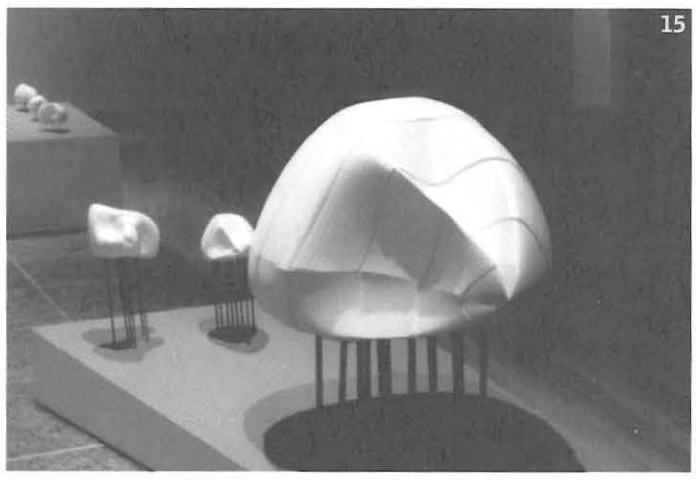
9–17 The surfaces were connected to computer-controlled milling and cutting machinery. Two techniques were used in this regard. Both involved splitting the panels into groups of eight peeled strips. The first technique (12–16) divided the eight peeled strips into eight curved panels or chips. These panels were then aligned so that their edges shared the same plane, and then all of the chips were connected into a single surface. This surface was then milled into a wooden panel that served as a formwork for casting. ABS plastic was then formed against these solids and the individual panels then cut out of the plastic and connected together to achieve the original shape. The second technique (9–11, 16–17) unfolded or flattened the eight peels into leaves that were then water jet cut from both rubber and steel. These steel leaves could then be bent so that all of the edges aligned and the original shape was achieved.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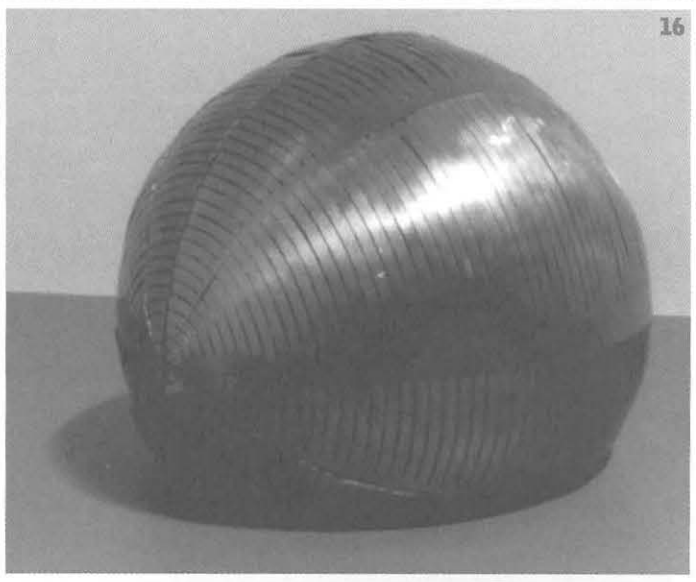
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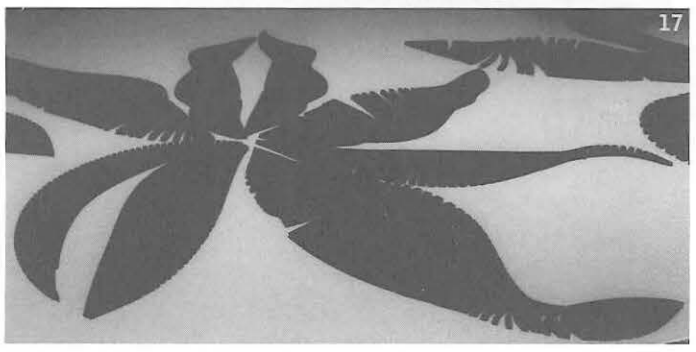
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MOTIVATIONS OF ANIMATION

Mark Rakatansky

Take Christopher Walken, for example:

"He has no time for The Method. He just turns up and does it. [Walken:] 'It boils down to: Can you act? Who cares what you think?'"[1] And: "He [Walken] pulls out his script and every word had a note on it about what he wanted to do."[2]

This is an example of something other than contradiction.

Notice Walken didn't say: "Who cares if you think?" (he had thought written on every word of his script). He said: "Who cares *what* you think?" Who cares what your preparation is if it doesn't make it into your performance? Who cares what your diagram is or what my diagram is if it doesn't make it into the act of your act or of my act, into the act of your design or of my design, in a way that is legible, perceptible?

It makes no *difference* whether you prepare for your role through Method Acting or any other form of diagrammatic preparation (such as notes on a script) unless it results in a performance that gives the appearance of being (complexly) motivated, of being (complexly) animated, of being more than just a diagrammatic sum of individual lines of script. More: because you find the differences, the differentials, of motive and animacy and gesture within (and between) those diagrammatic lines in order to translate, to bring forth, those differences that might make a difference in your performance.

"A difference that makes a difference": that was Bateson's definition of information (*Steps to an Ecology of Mind*, 453). I heard that expression often in the second year of my undergraduate education, attending what was to be the last year of Gregory Bateson's teaching. That expression and, along with many other expressions, this one: *the map is not the territory*, echoing and elaborating, as he often did, Alfred Korzybski's famous dictum.

Meaning: the fact that I cannot peel the words *Fresh Tagliatelle with Wild Mushrooms and Mint* off the surface of this menu (at this restaurant in the East Village I am sitting in right now, jotting down these lines while waiting for the check to arrive) and eat those lines of ink for my dinner. "The fact," in other words, in Bateson's words, "that a message, of whatever kind, does not consist of those objects that it denotes" – for which Bateson cites the example: "The word 'cat' cannot scratch us" (*Steps*, 180).

Ditto the diagram, as the dictionary states: "a graphic design that explains rather than represents: a drawing that shows arrangement and relations (as of parts to a whole, relative values, origins and development, chronological fluctuations, distribution)."

I started out this essay wanting to question certain kinds of diagrammatics, but let's just admit it: isn't every building a built diagram (from some plan, professionally inscribed or not)?[3] Isn't every kind of music, theater, and film a performed diagram (from some score or some script, transcribed or not)? Isn't every essay, every novel, every poem a written diagram (from some outline, jotted down or not)?

Everything is a transcription, everything is a translation, every artifact, every object begins as notional form as it makes its way to its representation as material form. How it might make its way there is what I want to begin to address here.

Here was my beginning, my first sentence in the very first draft of this essay: "The question is – is always – how to begin: begin your design: begin the design of your architecture or the design of your essay about architecture." You see, I started mixing things up, right from the very beginning, mixing up the object and some representation of the object, but the dictionary says the word *diagram* comes from the Greek *diagramma*, from the Greek *diagraphein* (*dia-* [through] + *graphein* [to write]), meaning *to mark out by lines*, so the marking and the writing of lines, the object and its representation, are already mixed up, at least in the dictionary, even before I arrive there on the page, or on screen, to make matters worse.

Which is what I did in that first draft of this essay: it's not *how* you begin – the how comes later – but *with what*? With what do you begin: what diagram, what outline, what motive, what do you have in your mind (or up your sleeve)? Then – here's the *how* – how does that diagram, that outline, that motive give the appearance of working its way through your beginnings and through to your ends and so into the objects of your design?

Any historical or recent urge in architecture to equate, to collapse the difference between, the map and the territory, to assert the diagrammatic map *as* the territory of architecture, will reveal,

1 Adam Higgenbotham, "Walken on the Wild Side" Premiere, UK edition (June 1996): 67.

2 Director Peter O'Fallon, quoted in Holly Millea, "Tall, Dark, and Ransom." Premiere (March 1998): 75.

3 For the operations and play of nonprofessional diagrams and plans in vernacular architecture, see, for example, Henry Glassie, Folk Housing in Middle Virginia (Knoxville: University of Tennessee Press, 1975).

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as Bateson noted, the naive desire to "get back to the absolute innocence of communication by means of pure mood-signs," like "the flag which men will die to save" (*Steps*, 183).

But: there are no pure signs of *any* sort, there is no absolute innocence in *any* communication, every explanation is a form of representation (even if not mimetic), every diagram is a representational form of some idea and some motivation toward that idea: nothing is unmediated, the map is not the territory.

But: it would be foolish and pointless and futile to insist on the absolute and unequivocal separation of the map from the territory, for at least four reasons:

First, the failure of old identities (or diagrams of identities) will not eradicate the recurring desire for new "stable" and "true" identities – and thus, in architecture, for new "stable" and "true" diagrams.

Second, there are certainly relations, between the map and the territory, which, as Bateson noted, are relations of difference:

> "What is it in the territory that gets onto the map?" We know the territory does not get onto the map. This is the central point about which we here are all agreed. Now, if the territory were uniform, nothing would get onto the map except the boundaries, which are points at which it ceases to be uniform against some larger matrix. What gets onto the map, in fact, is difference, be it a difference in altitude, a difference in vegetation, a difference in population structure, difference in surface, or whatever. Differences are the things that get onto a map. (*Steps*, 451)

Third, in aesthetic operations, it is *difference* that must be used to bring what is in the map back into the territory, because in aesthetic operations, to turn that dictionary definition around, a diagram is a representation in reverse. Aesthetic diagrams, in other words, are just as often made after-the-fact as prior-to-the-fact of the object. Either way, in the end, the object is always a representation, not of itself but of the diagrams, the outlines, the motives, the ideas – the ideas of certain "arrangements and relations," as said dictionary definition said, which the object then represents.

I am trying to say that no one is exempt from this condition of the translation between the diagram and the object, *whatever* your position on the use of diagrams, but that in this play that is your work it all depends on the quality of your translation, the quality of your performance.

To wit: Christopher Walken.

"The inner life of the characters is irrelevant . . . *except in so far as* it is expressed in their outward attitudes and actions" (*Brecht*, 123).

Drama theorist Martin Esslin's description of a Brechtian theory and practice of performance could stand for the performance of architecture as well, for architectural elements are always acting as characters within the architectural drama. This makes the resourcefulness, responsiveness, and expressiveness of the characters within both your map and your territory all the more important.

The map that is the name of the dish *Fresh Tagliatelle with Wild Mushrooms and Mint* (those inky lines, those graphic designs, that are those words on a page of a menu or on a page of a disciplinary journal), or the "inner" map that is the recipe for this dish, is of no interest to me (whether I am eating it at this restaurant or cooking it myself at home) *except in so far as* the ingredients and the operations performed on those ingredients accrue to a *greater* effect in the "outward" territory that is the dish, so as not to remain merely a diagram of a dish, so as not to remain merely a diagrammatic sum of those individual ingredient parts, which unfortunately remains the sum of my experience with this particular tagliatelle, even though the *New York Times* recommended it just the other day!

Thus: *the proof of the pudding is in the eating* – an expression that the actors of the Berliner Ensemble heard often from Bertolt Brecht, with respect to the act of developing a play from its initial conception through the diagrammatics of its script to its performance – attending, as they were, what were to be the last years of Brecht's directing.

And finally, the fourth and perhaps most important reason why it would be foolish and pointless and futile to insist on the absolute and unequivocal separation of the map from the territory is this: if, as Bateson noted, in that psychical condition designated as primary process "map and territory are equated" (because the primary process operates under the pleasure principle to speed gratification by collapsing difference), and if in that condition designated as secondary process map and territory "can be discriminated" (because the secondary process operates under the reality principle to manage gratification by asserting difference), then in the performance that is the act of play (animal play, child's play, grown-up play), map and territory are "both equated *and* discriminated" (*Steps*, 185).

In Jean-Luc Godard's film *King Lear*, for example, to the partially ironic imperative "Tell me Professor!" the partially ironic response is "Show . . . Show . . . Show, not Tell!" It is precisely both the showing and the telling that give Godard's work its "virtue and power," not by collapsing showing *and* telling together, but by treating showing and telling as two equal (representations of) realities through which relations are to be developed. There are few finer-grained and more deeply rendered moments of realism in cinema than the scenes of Burgess Meredith as father Lear and Molly Ringwald as daughter Cordelia, moments of fine-grained and deeply rendered *showing*, mimetic representation, which then are tactically put in relation with every manner of both coarse-grained showing (absurd scenes, ridiculous puns) *and* fine-grained and course-grained *telling* (inter-titles, complex manipulations of image and soundtrack). Here is an object that is constructed through the refusal to believe *either* that map and territory can be equated or that map and territory can remain discriminated, that refuses to believe in these *false* distinctions between realism and abstraction, between criticism and lyricism, between *mise-en-scène* and montage, and, yes, between tragedy and comedy. Godard:

> This is where the trouble begins. Is the cinema catalogued as a whole or as a part? If you make a Western, no psychology; if you make a love-story, no chases or flights; if you make a light comedy, no adventures; and if you have adventures, no character analysis. Woe onto me, since I have just made *La Femme Mariée*, a film where subjects are seen as objects, where pursuits by taxi alternate with ethnological interviews, where the spectacle of life finally mingles with its analysis: a film, in short, where cinema plays happily, delighted to be only what it is. (*Godard on Godard*, 208)

Samuel Beckett, Marguerite Duras, Max Frisch, Jamaica Kincaid, Gordon Lish, Grace Paley, Dennis Potter, Gerhard Richter, Kryzstof Wodiczko: just a few examples of those who produce work that plays happily between the map and the territory.

I guess that helps explain why most people are not all that interested in architecture – let's just admit it – compared to novels or movies or just about *any* other art form. You hardly need me to draw your attention to the fact that most people do not pay much attention to architecture.

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Because most architecture is not all that complexly rendered, you might say, in relation to what counts as complex (or even noticeable) rendering for most people.

Too diagrammatic, you might say.

Which brings me to what the editors e-mailed me to ask me to write about, which is animation and the animated diagram.

Cartoons, for example. An interest of mine. And pleasure. Like wild mushrooms.

So why is it then, that *still*, in a design review, whenever I want to suggest that a building might need to be worked more in relation to its concept, why is it that, *still*, I say: "It's a diagram of a building" or "It's a cartoon of a building"?

I am tired of discriminating myself from myself.

So let me now try to write it out as it seems to me *right now*: It's not that these buildings are cartoons that's the problem, it's that they're not engaging cartoons, not (complexly) animated enough (in form *and* in content).

It's not that all buildings begin as bubble diagrams that's the problem, it's that so many end there – whatever their styles and however embellished their details. It's the beginning-and-the-end problem, it's the means-and-the-ends problem, it's the translation problem. It's a question of whether the diagram is a means of exploring an idea or an end *in and of* itself. Fortunately there are a number of individuals struggling in architecture, art, film, graphics, writing, attempting to work on and with these problems today.

What in the process of design would resist such a simplistic translation, what differences and differentials are in the ingredients of architecture (of site, of program, of tectonics) and in the operations performed on those ingredients such that more complex interweavings of object *and* diagram, of territory *and* map, of discriminating and equating, of the spectacle of life *and* its analysis, might be possible?

This is where Chuck Jones, renowned animation director, can come in, can make an entrance of the stagings on these pages, along with his books *Chuck Amuck* (1989) and *Chuck Reducks* (1996), from which I will attempt to draw out some number of points, seven for now, more on some other occasion, for architectural consideration:

1. *Animation means to invoke life, not to imitate it* (*Reducks*, 268).

Chuck Jones summarizes his position with the preceding statement in *Chuck Reducks*, but in his earlier *Chuck Amuck* he goes to the dictionary first before concluding with the *same* point, and his dictionary says: "ANIMATE: [*Webster's*] From Latin, *animatus* – to invoke life, to make alive, to give life to, bring to life, to stimulate to action or creative effort" (*Amuck*, 180).

Like Jones, I would say that the only one of these definitions relevant to the process of architectural design is "to invoke life," not to imitate it. It's not possible to make architecture alive. It's not possible to give life to. Or bring to life. Or even to stimulate to action. Simulate yes, stimulate no – a simulation that might, in turn, cause a stimulation of the user. It's only possible to *invoke* the possibility of action or effort, the possibility of the performance of action or effort.

In other words, a building cannot move as a body moves, a building is not a body, needless to say. But, needless to say, given how dull, how unanimated, most buildings are, whatever considerations it takes to get a building animated – or at the other extreme, to obdurately, albeit futilely, *attempt* to resist any and all animation – could be worth the consideration.

And, anyway, isn't the art of animation animating what isn't?

Likewise, the art of art?

After all, a painting is just pigment on canvas, an essay just ink on a page.

Here's a story Chuck Jones tells in the 1991 documentary *Chuck Amuck: The Movie*: a little boy's father introduces him to the little boy with the following introduction: "This is the man who draws Bugs Bunny." The little boy, as Chuck Jones tells it, was furious: "He looked up, threw his lower lip out and said 'He does not *draw* Bugs Bunny! He draws pictures *of* Bugs Bunny!'" Jones comments approvingly: "And that to me is the whole *difference*. That's the whole point."

2. *Animation is not the art of drawings that move, but the art of movements that are drawn* (*Amuck*, 180).

In the book *Chuck Amuck*, Jones follows his dictionary definition of animate with the preceding quote from Norman McLaren, another renowned animation director. Not movement, but a series of representations of movement: this is as true with the older forms of celluloid animation as with the newer computerized, *vector-based* forms of animation.

Not movement but the invocation of movement, not gesture but the invocation of gesture, not motivation but the invocation of motivation. *Looney Tunes, Merrie Melodies*: it's all just lines, after all, lines drawn on a "cel," as animationists say, on celluloid, five or six thousand cels for a six-minute animated cartoon. There are no characters, there is no performance, only the invocation of characters, only the invocation of a performance.

Lines drawn on a cel, at least that was the old technology. Not entirely unlike this institutional office I am writing this in now at *this* moment, one of a set of cells all in a row, lines drawn using whatever technology was new or old at *that* moment, a plan "marked out by lines," *diagramma, diagraphein*, a bubble-diagram of a building with the bubble-lines turned into wall-lines, a built diagram showing "arrangements and relations." Except Chuck Jones's cels and Norman McLaren's cels do not just repeat, they iterate, they iterate to provide animation and movement in the characters as the characters respond to difference from cel to cel, whereas these office cells are drawn all the same, so the story (of this space, this social space) does not move.

No iteration, no animation – in the territory, that is, regardless how much (or even whether any) iteration is visible in those diagrams that make up the architectural map.

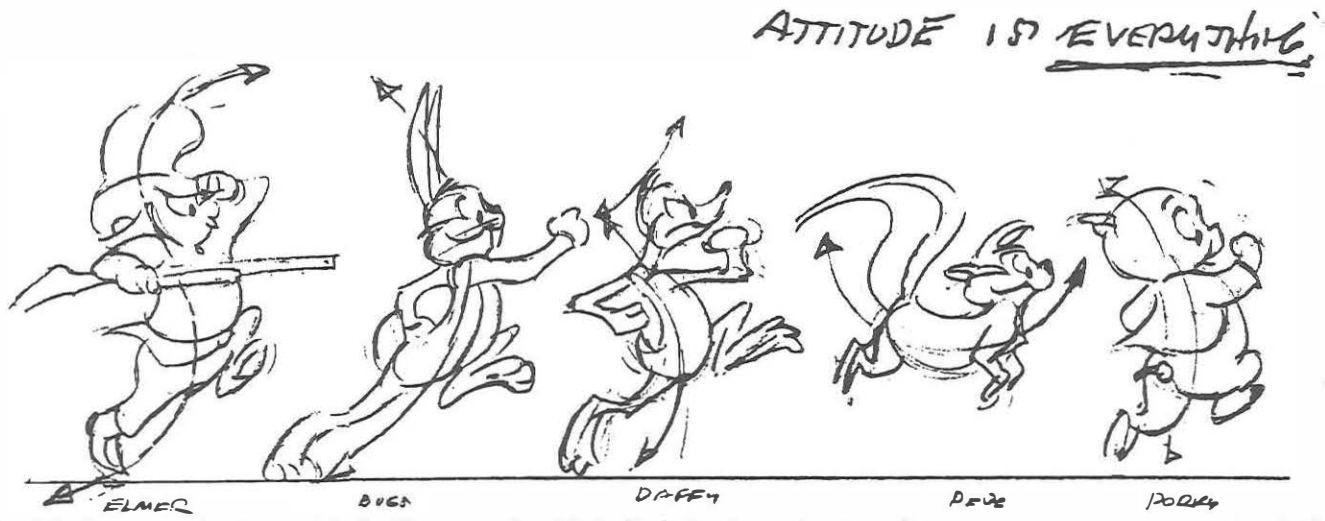
But the animation of life happens *in* the office space, with the *people*, not with the architecture, *right?*

So I've heard – from many surprisingly diverse and distinct quarters of this discipline. Well, it makes a good excuse anyway. How convenient it would be if someone else were responsible for the animation of the spaces we are supposed to be designing, and not us.

3. *Character always comes first, before the physical representation* (*Amuck*, 261).

"What we did at Warner Bros. is often called 'character animation,' but if one considers Webster, that is redundant" (*Amuck*, 180).

In other words: "We must have a clear idea of what our character is doing before we start to draw him" (*Reducks*, 120). That sentence follows the Norman MacLaren quote when Jones evokes it again in *Chuck Reducks*. It is Chuck Jones's explication of what those movements that are being drawn are being drawn *as* and *for*: not just abstract movements, but movements of characters, movements as characterizations: "For instance, when Daffy Duck plays



Robin Hood, we must be thoroughly familiar not only with Daffy himself but with how he would approach the role of Robin Hood. If Bugs Bunny played Robin Hood, it would be with a different manner, attitude, and body movement" (*Reducks*, 120).

In order to animate you have to have some "character" in mind first, you have to have some "arrangements and relations" within and between characters in your mind first. This is what Chuck Jones calls: *attitude*. That's the map, that's the diagram.

You can see right here in this parade of some of Chuck Jones's characters, Elmer Fudd and Bugs Bunny and Daffy Duck and Pepé Le Pew and Porky Pig, that these "arrangements and relations" are conveyed as internal differentials, let us call them vectors, that Jones has diagrammed for us here in his parade.

And you can see in this severely reduced diagram – that's redundant: isn't every diagram severely reduced? – that all of these characters, as a minimum requirement, have vectors going in two different directions. In other words, with two (or more) vectors, characters already have within them internal conflicts, internal differentiations, internal differentials, and that is the nature of their conflictual and differentiated and differential character, which is always in response to external conflicts, external differentiations, external differentials.

The common definition of a vector force is that it involves magnitude *and* direction, as opposed to a scalar force, which involves only magnitude. But in fact there is a third vectoral *dimension*, so to speak, to add to magnitude and direction, and that is the dimension of *sense*: "The word 'direction' used here is sometimes replaced by 'direction and sense' to denote the fact that a vector is an orientated line segment which points in a particular sense."[4] In that mappy space of pure mathematics, two dimensions are all that is necessary, but when a vector is used to analyze properties of this territorial and third-dimensional space that is our impure materialized world, it "requires," as this dictionary says in the first of the three definitions it enumerates under *vector*: "for its complete specification, a magnitude, direction, and sense."

A vector is thus not just a physical force: it is said to be "directed," to be "oriented," to have some "sense." This sense, this orientation, is its motive force. A vector is motivated, like a gesture is motivated (as all knowing actors know), as a relational complex of motivation, a dialogical motivation, not as a reflection or illustration of a single motive. A deeply rendered performance is precisely that which cannot be rendered as an enactment of a single, uniform, homogeneous, monovalent, pure motive – given that human beings are incapable of feeling only one emotional vector at any given time. The simultaneity and complexity of conflictual emotions is precisely what a deeply rendered performance enacts at every micro level of gesture and speech, revealing not a fixed character but a character in *the process* of acquiring form and sense. An actor or a director wanting to know the true and definitive motivation of a character misses the point, as does the stereotypical Method Acting query "what's my motivation?" as this is usually just longhand for "what's my motive?" – as if a single experience, a single motive, a single force, could define and explain the complexity of behavioral performance.

Motivation is always plural, as Gerhard Richter has said: "I have no motive, only motivation" (*Paintings*, 12), which is another way of saying, as Godard has: "We need to show that there is no model; there's only modeling" (*Introduction*, 95). Ditto: there is no map, there's only mapping. Ditto: there is no territory, there's only territorializing.

Or as Gilles Deleuze and Félix Guattari might have said it: there is no territory, there's only deterritorializing and, in turn, reterritorializing— de-coding the territory as certain mappings (*operating on certain vectors*), and then over-coding and re-inscribing these mappings back into the territory (*What is Philosophy?* 67–68).

That a vector is not just force but has some "sense" that may be operated on should not be too surprising, considering that "vector," as this dictionary says, comes from the Latin *vectus*, meaning "carrier," meaning "to convey" ("to impart or communicate either directly by clear statement or indirectly by suggestion, implication, gesture, attitude, behavior, or appearance").

Which leads us to the second of these three dictionary definitions for vector: "an agent capable of transmitting a pathogen from one organism to another." You could say that a vector thus acts both as a force and as a conduit, but it would be more accurate to say that if a vector acts as a force of sense, it is because it is a conduit of sense. The vectorial force of architecture is the means for the social and cultural force of architecture – the social and cultural transmission and infection of architecture – whose systems of sense exemplify the capillary action of Michel Foucault's "micro-technologies of power": the "circulation of effects of power through progressively finer channels, gaining access to individuals themselves, to their bodies, their gestures and all their daily actions" (*Power/Knowledge*, 151–52).

One trick for architecture to learn to play might be this: how to acknowledge and make legible, *in the object*, the inevitable cultural and ideological transmission of architecture while showing its potential to reconfigure that transmission – simultaneously showing that every act of transmission, like every act of character, is always a form of configuration, and that every act of configuration (or reconfiguration) is a form of transmission. This is

4 Richmond B. McQuistan, Scalar and Vector Fields: A Physical Interpretation (New York: Wiley & Sons, 1965), 2. It is Jason Vigneri-Beane who reminded me of the importance of addressing the difference between the scalar and the vector.

the sort of simultaneity of transmission and reconfiguration that Angelika Hurwicz, one of those Berliner Ensemble actors, spoke of when she spoke of Brecht's characterizations: "He demonstrates persons as products of the conditions in which they live, and capable of change through the circumstances which they experience" ("Brecht's Work," 133).

This simultaneity is what (a) character is, whether that form of character is revealed as a person or as an architectural element.

4. *If you start with character, you probably will end up with good drawings. If you start out with drawings, you will almost certainly end up with limited characters, caught in the matrix of your limited drawings. . . . For identity, you do not draw differently, you think differently* (*Reducks*, 268).

Here are just a few of the characters that will be coming soon or sooner to a building near you: Door, Wall, Window, Ceiling, Floor, Cabinet, Signage.

Or pick another category of character, if you prefer: Lobby, Meeting Room, Working Room, Eating Room, Sleeping Room – Rooms and Rooms and Rooms and Rooms.

There are many characters in any given project, and each character contains many characters or, rather, many (diverse and conflictual) characterizations. In other words, there is no (fixed) character, there's only characterizing. Only character – only identity – in process.

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5. *Our characters are based on individual personalities, their anatomy abstracted only in the most general way from their prototypes – rabbits, ducks, cats, canaries, etc. . . What they looked like grew in each case from our discovery of who they were. Then and only then could their movements and voices uniquely demonstrate each of these personalities* (*Amuck*, 261–62).

Jones's point is particularly relevant to architecture here. Say, for example, you were to consider using any of the architectural characters mentioned in the previous section, then one way you might consider using them would be, first, to consider their personalities through their anatomy – their social, psychological, and physical anatomy – abstracted, say, *only in the most general way* from their conventional or normative "types" – because that is more or less what we all do anyway, sooner or later in the design process – and then, second, what you design these characters to look like – for that particular project – *could* grow and develop in each case from your discovery of who they were. The important point is that the architectural character is not just predetermined and then repeated, but rather that the character is discovered through the responsive iteration of its multiple characteristics throughout the project.

I say abstracted only in the most general way, because even though Chuck Jones says he animates "'realistically' . . . compared to the . . . 'abstractions' of some of the so-called avant-garde animators," he goes on to demonstrate how dissimilar Daffy is from a normal duck, how Bugs's movements and gestures bear surprisingly little resemblance to a conventional rabbit, how the only thing Porky shares with a pig is its tail.

And yet: Daffy is (and remains) a duck, Bugs is (and remains) a bunny, Porky is (and remains) a pig. That remaining is necessary for the exploration of character.

"With Bugs, Daffy, etc., we invented our own anatomical structures," Jones says in *Chuck Amuck* – but of course this is not true: what Jones did was to *adopt* and *adapt* comparative zoological anatomy, but he finishes his sentence with a statement that is quite true – "and were faithful to them" (*Amuck*, 261).

Faithfulness: "We are dealing in shapes, shapes with individual characteristics, variations on a common anatomical structure . . . individual personalities, so that in the same circumstance they react in different ways. . . . If you want believability in your characters, you must have visual consistency. In animation, each character must move according to its own anatomical limitations: Daffy Duck must move with Daffy Duck's anatomy, Donald Duck with Donald Duck's structure" (*Reducks*, 131, 267).

Believability: "One principle he learned is that believability is more important than realism" (*Chuck Jones: A Flurry of Drawings*, 62). That might be some film director or film critic speaking of Christopher Walken, but actually it is the literary critic Hugh Kenner speaking of Chuck Jones. Jones himself says: "We must all start with the believable. This is the essence of our craft. All drama, all comedy, all artistry stems from the believable, which gives us as solid a rock as anyone could ask from which to seek humor: variations on the believable – that is the essence of all humor" (*Amuck*, 261).

Believability, Visual Consistency, Faithfulness to Anatomy: these principles do not constitute a reduction of variation but, on the contrary, allow for that proliferation of variation – variations on and in the believable – that is the character.

If a proliferation of variation is what a character is, that is because, as Mikhail Bakhtin has said: "A man never coincides with himself. One cannot apply to him the formula of identity A=A" (*Problems of Dostoevsky's Poetics*, 59). Which accounts for the variation within character, as Max Frisch has said: "The individual is a sum of various possibilities, not an unlimited sum, but one which goes beyond his [specific] biography. Only the variations reveal the common centre."[5]

There is no Daffy, no Donald, no Lear, no Cordelia, no Christopher Walken, no you, no me. There is no definitive common center, only some set of common intersections, no true and stable self, no true identity or map or diagram to be revealed, there are only the variations – the way you see that character on the screen or in a book, or, say, you or me in life, respond in various ways to various situations – that *retroactively* suggests some character, some you, some me, some map, some diagram.

If you look at what is called the model sheet or the character sheet for any Looney Tune character, say Daffy, you will see that there is no single Daffy, no Daffy qua Daffy, no Daffy Ding-an-sich, there is only a series of Daffys, a series of Daffy responses, gestural and verbal.

Only: It's-mine!-All-mine!-I'm-rich!-I'm-wealthy!-I'm-comfortably-well-off! Daffy and Slight-pause-whilst-I-adjust-my-accouterments Daffy and Now-then-we'll-just-see-who's-boss-in-this-bailiwick Daffy and It-isn't-as-though-I-haven't-lived-up-to-my-contract-Goodneth-knows-I've-done-that Daffy and That-sir-is-an-unmitigated-frabication!-It's-wabbit-season! Daffy and I-say-it's-duck-season-and-I-say-Fire! Daffy and I'll-start-it-this-time! Daffy and Okay-this-time-You-start-it! Daffy and You're-dethpicable! Daffy.

And out of those multiplicitous characterizations, you create the character: Daffy.

So given that there is no character, only characterizing, then how could you abstract the "anatomy" of one of those architectural characters I mentioned in the previous section?

This is where the editors of this special issue can make another entrance on these stagings, because when the editors e-mailed me, they e-mailed me the following statement: "The way the diagram operates that distinguishes it from an icon, inspiration, or *objet trouvé* is related to the difference between representational and instrumental techniques. An image becomes a diagram only when you instrument it toward organizational effects."

5 Quoted in Michael Butler, The Novels of Max Frisch (London: Oswald Wolff, 1976), 149.

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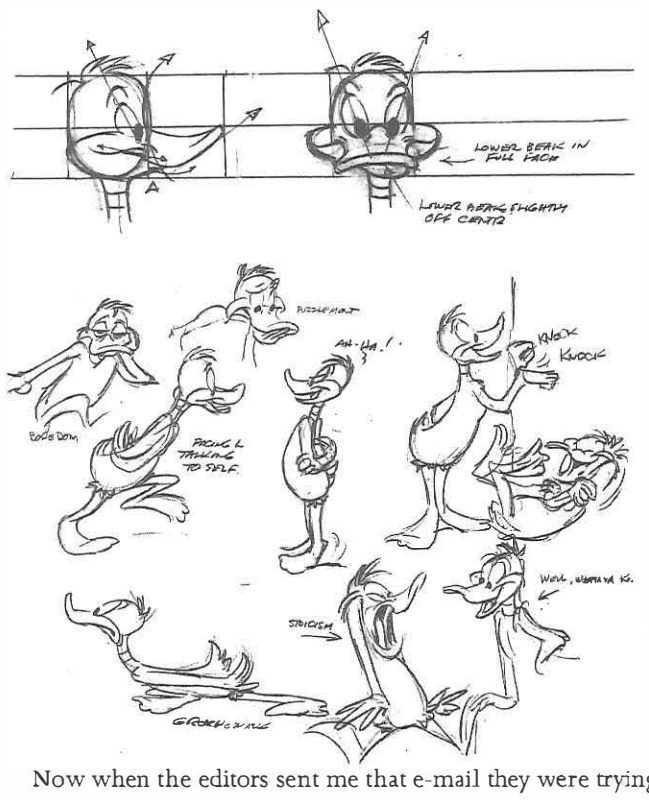

Now when the editors sent me that e-mail they were trying to discriminate the diagram from the image, and you already know I have been trying to discriminate and equate the diagram and the image, but this is where the editors can help with the question of how you might abstract an image like an architectural character: by deterritorializing and reterritorializing the image or the *objet trouvé* or character, by instrumentalizing it toward organizational effects (as they would say it), by operating on its organizational effects (as I would say it).

Thus: the diagram is not imported to the image (or the object), the diagram is exported from the image (or the object). It is found already at work metonymically in or around the image or the *objet trouvé* or the character, and drawn forth. But then, it should be said: the image (the character) does *not* become a diagram, what the image (the character) *does* is to reveal its own diagrammatics. Diagrammatics that will only be recognizable by virtue of how they are drawn forth in the act of responding to internal and external forces.

6. *We are left to ponder, oh, the reluctance of Being to succumb to Mutability* (Flurry, 67).

But why worry about believability, visual consistency, faithfulness to anatomy, anyway? Or characters, even? Animation is *great* because *anything* can transform in anything *else*, a character can become *anything* at all, *right*?

Or so it's said, at least in some cyber circles. Oh, that dreamy talk again. On the contrary: what the art of animation and the art of art reveal is the possibility, but also the difficulty, of transformation in the struggle of and for identity – a struggle not in order to transform into something *else*, but in order to find the differential characterizations, the differential transformations, from within (the) character.

Transformation is easy. It is not difficult, say, for a handrail to change into a bench or a coat rail, or, say, a counter to turn into a dish rack, or, say, a shelf to turn into a table, nothing could be easier really, it's only a question of what you get for this labor, what you get out of it, what relations can be drawn out of such transformations.

As in montage: a juxtaposition does not a relationship make – so, too, in animation: a transformation does not a relationship make.

If you want to maintain the productive tension of the transformation, in a way that would articulate difference *and* relation, then that transformation should resist being too smooth, too easy, because then it will not be legible as to what transformed into what. And why. And how.

But, given that, what is particularly instructive in animation is the "amazing, elastic play" that the film director Sergei Eisenstein notes:

> With surprise – necks elongate.
> With panicked running – legs stretch.
> With fright – not only the character trembles, but a wavering line runs along the contour of its drawn image. . .
> For if, in terror, the neck of a horse or cow stretches, then the representation itself of the skin will stretch, but not . . . the contour of the drawing of the skin, as an independent element! . . .
> And only after the contour of the neck elongates beyond the possible limits of the neck – does it become a comical embodiment . . . (*Eisenstein on Disney*, 57).

This amazing, elastic play is due to a limit of physical identity already having been established and then *temporarily* elongated, extended, *in relation to, in comparison to*, that limit. This limit, of course, is not just the limit of that physical identity but the limit of that set of cultural identities that circulates around that physical identity. What is enacted, in other words, is the *temporary* dissolution of the object and its representation. "The comicality here," Eisenstein notes, "stems from the fact that any representation exists in two ways: as a set of lines" – *the map* – "and as the image that arises from them" – *the territory* (Eisenstein, 57).

Eisenstein used the example of a clock to further illustrate this principle: if the relation between "the graphic drawing of numerals and hands on a clock face, and an image of the time of day that comes from their specific combination" is "normally . . . indissoluble," then "in a comical construction there is . . . dissection, but of a special type: the perception of them as independent of" – *as discriminated from* – "each other, *and simulanteously as* belonging together" – *as being equated to* each other (Eisenstein, 57–58).

This productive tension is maintained by simultaneously establishing *and* exceeding a particular identity. In order to work, in order for the transformation of identity to be perceivable as a transformation, this transformation has to be developed in relation to, within range of, that identity, that *identifiable* identity:

> Tex [Avery, Jones's mentor] showed us that we could go beyond rationality. At a time when we were learning to animate and realizing that respect for anatomy is vital for believability, Tex showed us that a character can come out of that anatomy very briefly for a violent, distorted reaction. However, the distortion can't continue for long, or . . . credibility is gone. (*Reducks*, 98)

This is one of Chuck Jones's principal points: "Our characters achieve believability *because* of their limitations" (*Amuck*, 263).

Your architectural characters, your architecture: by their limits shall you know them. The limits, say, of their mutability, which will give you the very possibility of enacting what might be perceivable as that which has mutated.

Here's Hugh Kenner's example, from his discussion of the differentials of Wile E. Coyote's fall from whatever edge of whatever cliff Coyote was falling off of in his forever failing pursuit of the Road Runner:

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> Wile E.'s torso drops away, leaving a stressed face atop the stretched-out neck. Two seconds later the contracted neck snaps the face down out of sight, leaving two long ears. When those in turn vanish we are left to ponder – oh, the reluctance of Being to succumb to Mutability. (*Flurry*, 67)

What a wonderful line: "When those in turn vanish we are left to ponder – oh, the reluctance of Being to succumb to Mutability." But, actually, it's not just the reluctance we are left to ponder, it's the reluctance *and* the possibility, the necessity, the difficulty, the inevitability, of Being to succumb to Mutability.

This play between reluctance and inevitability, between being equated to and being discriminated from, between establishing and exceeding identity leads us to Jacques Lacan and to anamorphosis, the principles of which Lacan first discussed in his seminar of 1959–1960: "It is any kind of construction that is made in such a way that by means of an optical transposition a certain form that wasn't visible at first sight transforms itself into a readable image. The pleasure is found in seeing its emergence from an indecipherable form" (*Ethics*, 135). And returned to again in his seminar of 1964, where he seemed to emphasize just the reverse, focusing then on: "the pleasure of obtaining not the restoration of the world, but the distortion . . . of the image . . . and I will dwell, as on some delicious game, on this method that makes anything appear at will in a particular stretching" (*Concepts*, 87).

Both of these pleasures – the pleasure of finding the readable image in the indecipherable form and the pleasure of its distortion – are already implied, as the historian Stephen Greenblatt has noted, in the etymology of anamorphosis, which "suggests a back-and-forth movement, a constant forming and re-forming" (*Renaissance Self-Fashioning*, 23).

A constant de-forming and re-forming: a constant deterritorializing and reterritorializing.

This possibility of a constant de-forming and re-forming in architecture, this possibility of an anamorphic architecture, is perhaps better exemplified not by a single painterly image, but by an example from music, say, John Coltrane's "sampling and scratching" in his various versions of "My Favorite Things," which not only show how you can find radical abstraction from within the figural, but even more radically: just how close the abstract is to the figural, say a note or a pitch or an octave or a beat away, in other words, how instantaneously the indecipherable form of abstraction is ready to snap for us into the readable image of figuration.

Hip hop may be an even better musical example here. Say you sample and scratch a line something along the lines of: "ch . . . ch . . . ch . . . chec . . . chec . . . check it . . . check it . . . ch . . . ch . . . check it ooouuuuuttt." This is not some uniformly graduated transformation or deformation, this is an anamorphic play with a very figural phrase, one that maintains the set of diverse but specific connotations of the phrase, while at the same time revealing the entirely abstract sonic tectonics of its construction. If it were all abstract – if it were: "uh . . . uh . . . uh . . . uhuh . . . uhuh . . . uhuhh uh . . . uhuhh uh . . . uh . .. uh . . . uhuhh uh uuuhhhhhhhh" – there would be *no* transformation, not even an orgasmic one, which would require quite a different array of sounds (which anyway are not an abstract set of sounds, but already and conventionally have assumed the figuration of the "orgasm-sound").

If those particular abstract sounds hold none of the tension of that anamorphized "check it OUT," well that is due to the fact that when sampled, or stretched, what is lacking in the abstract uhuhh uh sounds is the way *sense* might be held in suspension. This holding in suspension of both form *and* sense is the anamorphic act, and it is the means by which Lacan links anamorphosis to those techniques of suspension that are found in (courtly) love – and in tragedy and in comedy – wherein the relation between action and desire is held within various states of suspension.

Further, what anamorphosis and animation point to in this play is the pointlessness anyway of making such absolute distinctions between, say, the abstract and the figural – precisely by keeping the categories of abstraction and figuration *in suspension*, in process, precisely by *neither* allowing for the instant gratification of these categories as fixed or stable, *nor* the displacement of the one category by the other:

> This also allows us to approach a little closer to the unanswered question on the ends of art: is the end of art imitation or non-imitation? Does art imitate what it represents? If you begin by posing the question in those terms, you are already caught in the trap, and there is no way out of remaining in the impasse in which we find ourselves between figurative and so-called abstract art. . . .
>
> That's a trap one must not enter. Of course, works of art imitate the objects they represent, but their end is certainly not to represent them. In offering the imitation of an object, they make something different out of that object. Thus they only pretend to imitate. The object is established in a certain relationship to the Thing and is intended to encircle and to render both present and absent. (*Ethics*, 141)

In the end, anamorphosis can either be an end *in and of* itself – say, a kind of cute party trick – or a means: "At issue, in an analogical or anamorphic form, is the effort to point once again to the fact that what we seek in the illusion is something in which the illusion as such in some way transcends itself, destroys itself, by demonstrating that it is only there as a signifier" (*Ethics*, 136). In other words, by showing that the image, the picture, as Lacan said, is "what any picture is, a trap for the gaze," but showing it to us in a way that shows us: "that, as subjects, we are literally called into the picture, are represented here as caught" (*Concepts*, 89, 92).

We are already entangled, here, between the map and the territory, in the picture, in the object.

But then the question is: how can architecture be animated so as to cause us to recognize our own entanglements, as it responds to us, and we to it, in our various differentials of characterization? This is how we might recognize ourselves – as already called into our own pictures – in the enactment of our entanglements.[6]

7. *All of our characters are recognizable, not only by their personal characteristics, but by how they express these characteristics in response to conflict or love or any adversarial situation* (*Amuck*, 263).

What is wrong with this statement in *Chuck Amuck*, Jones goes on to correct seven years later with the following statement in *Chuck Reducks*: "It's not what or where a character is, nor the circumstances under which he finds himself that determines who he is. It is only how in a unique way he responds to that environment and those circumstances which identify him as an individual" (*Reducks*, 268).

In other words, there is no personality, no map, of a character in the film or in the architectural space. The only thing you can see is the

6 The idea of an aesthetic objectenacting entanglements in order to make its "readers" enact their own entanglements is developed by Stanley Fish in Surprised by Sin: The Reader in Paradise Lost (Berkeley: University of California Press, 1971).

7 All the voices for almost all of the classic Looney Tunes characters (including Elmer and Bugs and Daffy and Pepé and Porky) were enacted by Mel Blanc, whose job description was "Vocal Characterizations."

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character's responsiveness to various conditions. The only thing you can see of the map is that which is inscribed in that part of the territory that you do see, as Christopher Walken indicated, because you never see the territory whole in the way you can look over the entire map, the entire diagram, you just see bits and pieces. Only these bits and pieces of responsiveness, these bits and pieces of entanglement, give you the character – or more precisely: it is only these bits and pieces from which you will attempt, *retroactively*, to construct some character.

Here is Theodor Adorno's beautiful quote about vectors: "Beauty is either the resultant of force vectors or it is nothing at all" ("Functionalism Today," 41). But I would say, perhaps less beautifully, that forces are most strongly represented as the result of representations of forces in *responsiveness* (and thus in process and in transformation), and not as an end-resultant, not as a summing up. "The subject is neither a result," Alain Badiou has said, "nor an origin. It is the *local* status of the procedure, a configuration that exceeds the situation" ("On a Finally Objectless Subject," 27).

Like watching a kickoff return for a touchdown in a football game: all the tension and drama of the kick returner's gestures would be eviscerated if the forces were reduced to the resultant that is merely the run; that is, if all the relational forces at work in the responsive gestures of the run – the other team trying to tackle the runner, his own team blocking the other team or getting in his way, the near out-of-bounds at the sideline, the final sprint to the goal line – were entirely erased from view, so that the only thing one would see would be some *resultant* wacky dance in some abstract space by some helmeted nutcase with a big number on his shirt.

This is why it is important to avoid the mere direct expression(ism) of forces as resultants, lest we as designers become, say, glorified traffic engineers instrumentally calcifying *maps* of circulation flows – *as* if those maps of flows were the socially and psychologically complex territory that is the circulation of individuals through institutionalized spaces. Rather, architecture might gesture relationally to these forces, inferring forces as well as expressing forces, which is a way, to shift the association yet again, back to music, of being simultaneously on *and* off the beat, developing a syncopation of beats, a syncopation of (responses to) forces.

Both materializing the map and not materializing (but alluding to) the map, happily playing between the map and the territory.

In animation and in human performance the lesson is that these vectors of characterization are expressed not as some general movements, not with some general shapes, but as physical and vocal characterizations,[7] as gestures in relation and in response, as gestic movements of complex motivation between desire and drive – action being that which is suspended not just between various desires, but between desire and drive: between that which the character desires and that which the character does not desire, but nevertheless is compulsively driven to do (this is the Lacanian notion of drive): "Daffy rushes in and fears to thread at the same time" (Amuck, 239).

This brings me finally to the third of the three dictionary definitions for vector: "a behavioral field of force toward or away from the performance of various acts; broadly: drive." So it should not come as too much of a surprise if in his discussion of the Lacanian notion of drive, Jacques-Alain Miller speaks not only of forces toward and away from the performance of various acts, not only of conflict and love and other adversarial situations, but speaks of these situations by speaking of vectors:

> It is for this reason that, in this seminar [Encore], Lacan places right away, at the side of jouissance, its Other, namely love – which, on the contrary, is itself representable, by a vector that goes from one point to the other. And, we won't even hesitate to bring the vector of return, which we find in a fundamental cell on Lacan's graph. His entire graph is constructed on these departures and returns. ("The Drive is Speech," 20)

It is these departures and returns that motivate, that animate, our character.

Well, that's my cue. Time to depart. There's more but there's always more. These last two sections on anamorphosis and vectorial responsiveness have taken me to the point where these departures and returns are the differential vectors, the differential motives, of our character, of our architectural characters. What is left to discuss is how motives might be developed into motivic improvisations, how points might be developed through a process of counterpoint. For this I will need to have Chuck Jones and Hugh Kenner and Tex Avery return, along with, say, John Coltrane and Public Enemy. And Glenn Gould.

Another time then: another interest, another pleasure.

Another me then. And then, well, another you.

THE GENEALOGY OF MODELS: THE HAMMER AND THE SONG

Sanford Kwinter

Design methodology today seems to want nothing more than a clearer and more complete view of the relationship between diagram and worldly concreteness. The role that the concept of diagram is now playing in our attempts to theorize material reality in the late 20th century is not so different from the way the concept of the "schema" was used by Kant to theorize Newtonian reality in the late 18th century. Both seek to serve as synthetic explanatory devices (though they are no less real for that) that open up a space through which a perceptible reality may be related to the formal system that organizes it, whether this latter is a priori or a posteriori as in the Kantian/Humian version.

Yet another great thinker of the same era who must not be left out of consideration is Goethe. Goethe, it may be argued, was the first to have rejected the (apodictic) Kantian-Newtonian model in favor of the modern *genetic* interpretation of form. With respect to the form problem, in other words, Goethe placed his wager on the side of *development*, lodging the explanatory device in the space of abstract interactions taking place over time, so that form was always moving and represented only a visible, frozen section through a more fundamental organizing logic that itself could be intuited, analytically described, but never actually held in the hands. Goethe is the father of the modern concept of diagram insofar as he insisted on *formation* as the locus of explanation, not simple appearance. This ecological approach can be found in all of Goethe's work on Natural Philosophy and on intuition, but it is most explicitly elaborated in his scientific writings, especially those on botanical subjects. A central feature of these inquiries was his research into the "Ur-forms," a deeply misunderstood concept today that in fact probably represents the first cybernetic theory of form since the pre–Socratics and the atomists. Goethe is also rightly credited with having invented the term *morphology*.

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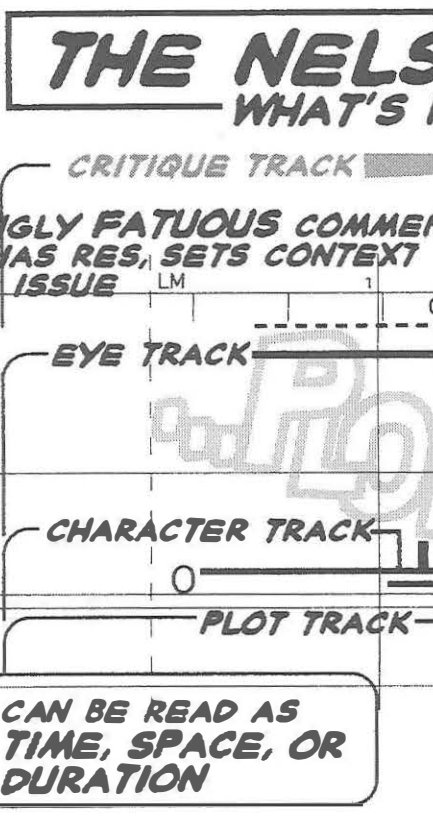
From Goethe then, we were supposed to have learned that diagrams do not themselves produce form (at least in no classical sense of this word) but rather that diagrams emit *formative and organizational influence*, shape-giving pressures that cannot help but be "embodied" in all subsequent states of the given region of concrete reality upon which they act. This activity represents a very complex play of hybridization and creolization, because every component of what I am calling concrete reality is itself the expression of many previous diagrams that have only temporarily been resolved (or "tested," as in an experiment) and lodged in form. The view of reality that I have always tried to foster in design (and which I imagine I am drawing from Nietzsche) is precisely one in which the play of form is seen as a perpetual communication of moduluses or impetuses – generating centers – the very thing that we seem today to be agreeing to call diagrams. Form, or world, one might say, is but the concrete residue of the incessant commerce and conversation (or *strife*, to use the Greek term) between diagrams. These diagrams I would claim are fundamentally geometric in nature, though the word *geometry* here refers to the modern, non–Euclidean or "rubber sheet" variety that deals with *transitions* and their logic. Though the word *topology* tends to be bandied about today like a twopenny shibboleth, it does, from the long view, appear to represent a mass address of the new, emerging "epistemology." Diagrams are active, and the view that sees them as mere blueprints to be translated or reproduced is outdated. The diagram is the engine of novelty, good as well as ill.

Even though Kantianism may have appeared to have triumphed historically over naturalism and romanticism, this was not altogether the case. The relations between perception, concept, and reality (or "nature") became the central problems of modernist and post–Enlightenment philosophy, and while Kant's system dominated debate right into the 20th century, many creative revisions and refinements were made to accommodate the new realities and knowledges of the modern century. The Kantian "schema," as I argued above, represented a profoundly new type of concept, but one which was capable of undergoing substantial interpretive adaptation. Some of the best known and most impressive examples of this type of development can be found in the work of early century neo–Kantian aestheticians such as in the "symbolic form" theories of Ernst Cassirer and Erwin Panofsky. Indeed it is these same general relationships that have recently been developed by Gilles Deleuze and Félix Guattari, specifically the relations between the "concept" and the "percept" in *What is Philosophy?*, albeit no longer here at all in a Kantian vein.

For Kant, the world of experience, to put it briefly, was divided into a "material" and a "formal" component. Material referred to sense-qualities found on the side of the object, of the world, or, in the Kantian jargon, of the "manifold." The formal domain, that which we are interested in when we want to understand the genealogy of the diagram, belongs on the side of the perceiving mind or agent; it refers to an a priori organization – this is Kant's Newtonian absoluteness speaking – a kind of engram or partitioning algorithm that lets sense experience – matter – enter into relation with itself to form higher level meanings and unities. (This may well be the proto-origin of 20th-century gestalt theory as well.) The formal, however, appears on the side of the subjective, it corresponds to the a priori schema which on its own is hollow and must be filled in with data acquired from outside through the senses. For Kant, each term of the pair is inseparable from the other: subject and object, perception and reality, schema and senses. Otherwise the world would simply collapse into shapeless abstraction or into a senseless kaleidoscopic scattering. It was the task of the 20th-century neo–Kantians, and it is our task as well, to *topologize* the field of the encounter of each pair of terms.

The neo–Kantian biologist Jakob Johann von Uexküll played an important role in achieving this when he invented the concept of the *Umwelt*, that broader ecology of features and cues in the external world with which every nervous system is linked through communicative circuits. The early Panofsky, on the other hand, showed how perspective played such a diagrammatic role in the formation of a cognitive, technological, and aesthetic gestalt, and Cassirer developed his theory of symbolic form, which again posits the operation of a generative, topologizing diagram that engenders both subject and object in any given context.

The term *topology* is used here not only to introduce the shifting, connected meshwork in which form and matter play out their alternating struggle and their dance, but also to insist that the diagram not be understood as a *reduction* of the manifold but rather as a contraction, or, to use the medieval term, a *complication* of reality. This is important because once complicated or enfolded, every worldly thing harbors within itself the perpetual capacity to *explicate* or unfold. The diagram – or what one can now call the *topologized schema* – represents the plastic aspect of reality: subject and object not only partially merge and overlap, but can virtually masquerade as one



WES JONES

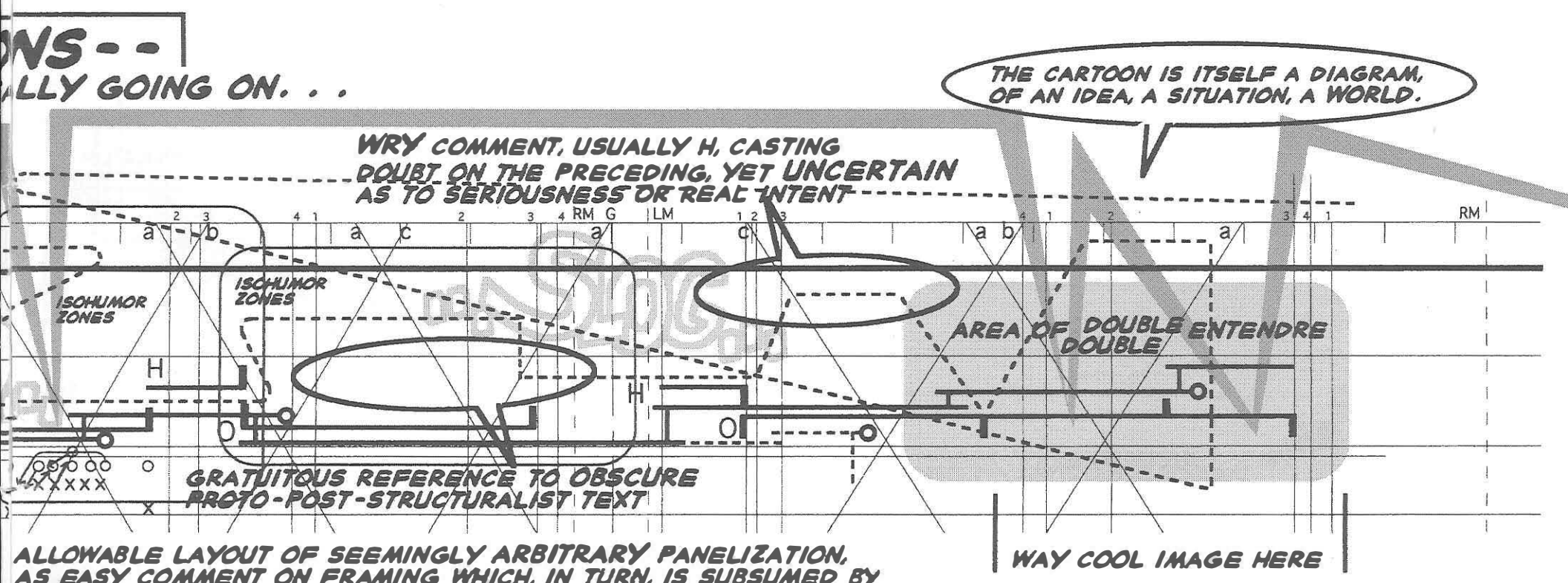
THE NELSONS

another. This obviously poses a whole new set of problems and possibilities for the theory of perception, and it certainly frees us from static, abstracting, and vision-based concepts of space. Somewhere along the line one has jettisoned both Newton and Kant, despite the fact that they served as the primary ladders to our modern position.

So what is our modern position? Clearly the notion of the diagram that Brian Boigon and I developed in our "Five Appliances for the Alphabetical City" article of 1989 was derived directly from Foucault's development of the notion in *Discipline and Punish* and in the first volume of the *History of Sexuality* (*les dispositifs*), and at the time we were happy to do so without adding a great deal to it. I am not sure that more has been added to it since, except for the marvelous elaborations of Deleuze, though these are still only that: elaborations of the Foucaldian theme. It is worth pointing out though that the diagram concept functions in Foucault's prison book as if it were itself, *a diagram*. In other words, it functions as an embedded entity, separate yet indissociable from the concrete work-event (the book and the system of concepts known as *Surveiller et punir*) that it animates and in which it resides. So how then do you isolate a diagram from the concrete events it generates? This is where Deleuze has made his contribution to the problem, by identifying the diagram with a class of phenomena that he calls abstract machines.

Abstract machines are precisely what they claim to be: abstract because they are conceptually and ontologically distinct from material reality, yet they are fully functioning machines, that is, they are agencies of assemblage, organization, and deployment. Reality, to speak a bit reductively, is comprised both of matter and the organization of that raw matter into deployable objects or complexes. The argument, stated simply, is as follows: to every organized entity there corresponds a micro-regime of forces that endows it with its general shape and program. Every object is a composition of forces, and the *compositional event* is the work or expression of an abstract machine. What I call the "conductivity hypothesis" is a major component of some recent mathematical work, particulary by René Thom and some "experimental" or computer-algorithm-based mathematicians, as well as work in the biological sciences. It states that abstract machines, or organized shaping forces, or micro-morphological regimes, are themselves part of larger assemblages, larger abstract machines *through which they communicate* as if across a single continuum. Events in one place transmit their effects and successes to other places, and indeed to other scales. This is not a new phlogiston or ether theory, but rather, is entirely in keeping with the modern theory of fields. Fields are one of the models with which scientists explain the incidents of influence that we are here agreeing by convention to call diagrams. There arise particular problems, of course, when one is careless in developing models to explain how remote events, or events separated in time rather than space, are related (such as in the work of Rupert Sheldrake), but history is full of provocative non-metaphysical models to explain such phemomena as well. I bring all of this into the equation because I like to claim that what we are dealing with here is simultaneously a new type of materialism (as Foucault called it, "un materialisme de l'incorporel") and a kind of enlightened neo-vitalism. It calls for a new epistemology of action and event, and sees forms and things as mere chimeras of these underlying diagrammatic processes. Politics must become the politics of the diagram and history must be seen as the history of diagrammatic *life*, not merely of the forms it threw up.

Approaching the incorporeal is one of the major challenges of contemporary design practice. There were times – more innocent times, to be sure – when this was done with very little self-consciousness and with sweeping brilliance; one thinks of the work of Moholy-Nagy, the constructivists, certain filmmakers, from Eisenstein to Kubrick, of Buckminster Fuller, Robert Smithson, the aesthetico-philosophical urbanist movements of the late 1950s and '60s, etc. These practitioners seemed instinctively to understand their role as intermediaries, and they had a clear intuition of the interstitial space that they had to occupy in order to *become diagrammatists*. I often make the argument to my students that this space is the space at once of synthesis, integration, *and* catastrophe, it is the space from which forms are launched and filtered, not made. In biology one is quite at ease discussing the distinct domains of genotype (where data is encoded in a four-letter language of rudimentary instructions) and phenotype (the marvelously rich world of novel shapes and their concatenations) and, with a bit more strain, of an intermediary space that links the two and where regulatory processes guide the first into the second. It would already be something for designers to adopt a "mechanistic genetic" position and conceive of a genotypic diagrammatism as underlying all phenotypic or formal expression. And yet, we must insist that the diagram lies nowhere else but in the space between the two, in the wild field of cybernetic interactions (what Deleuze, after Bergson, has called *actualisation*), regulatory pressures and channels, and control loops. Once again then, one misunderstands the diagram when one conceives of it as a template rather than as a flow.



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This is where the problem of diagrammatism takes on its postwar configuration. After World War II there was an extraordinary increase in the belief and application of science and engineering to everyday life, which brought along an increasing application of invisible material logics to explain and generate reality. It would be simplistic to point it out without supplying a much longer argument and explanation, but the advent of controlled nuclear processes, microwave and radar signal processing, industrial applications of synthetic chemistry, ballistics, and cryptology were almost entirely made possible by both theoretical and practical advances in information science. Industrial societies became increasingly saturated with these new embedded logics and the corresponding motor habits that they produced, but they became subjugated by them *invisibly*, according to what one could call a "subtle coup." The diagram is today very usefully understood as informational. At present the sciences of cybernetics and information are giving us the most useful understanding of the dynamic, algorithmic nature of diagrams.

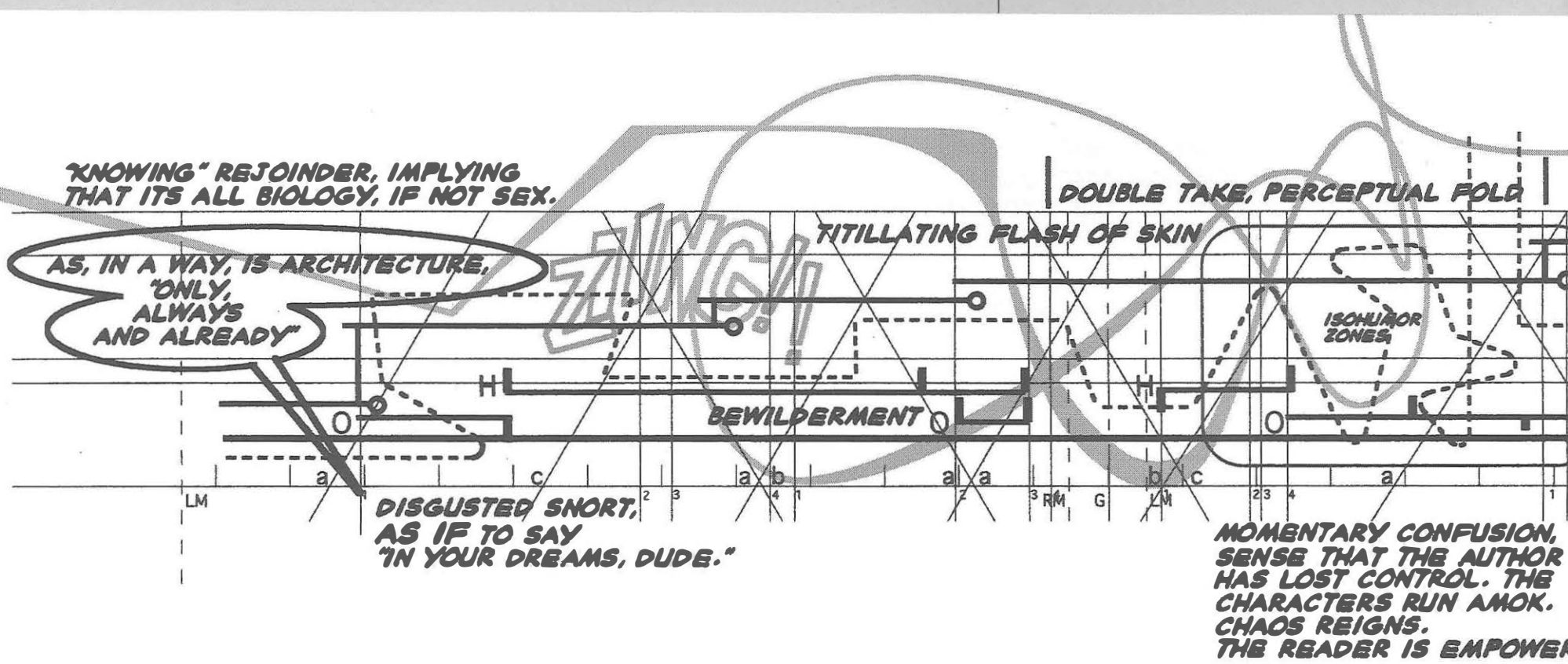
Cybernetics can be said to target three primary phenomena in the natural and the nonnatural world: integration, organization, and coordination. These phenomena undeniably exist in the world, but science has never been able to interrogate these phenomena in their customary numerical or "hard" terms. Philosophy has always needed to step in, along with some makeshift methods in the social sciences and, occasionally, aesthetics. When we inquire into the nature and activity of the diagram today we are really asking: "When something appears, what agencies are responsible for giving this particular shape to this particular appearance?" One modern information science, complexity theory, or dynamical systems theory, is seeking to reconfigure the answer to this question by positing the perpetual interaction of moving, evolving systems: one invisible (the diagram) and one visible (the real).

The primary phenomena studied by the new sciences are actually visible to, or intuitable by, a living observer, but not to a nonliving one, say to a camera or a measuring device. Take, for example, the phenomenon of integration: What is it? Where is it located? To explain the problem I will simplify it greatly by limiting it to a figure/ground example. An active ground, one can say, poses a continual threat to the figure upon or within it unless that figure (1) is itself active and flexible, (2) is in continual communication with the ground through feedback loops moving in both directions, and (3) constitutes within itself a system of even greater density of correlations and exchanges so that it can throw up a boundary of order, or a discontinuity between itself and the world that surrounds it. The figure both *integrates* its surroundings the way a lens focuses and intensifies ambient light, but it also integrates the differential events in the ambient environment (the changes) which function as a kind of motor for it, a thermodynamic potential to be tapped.

Next would be the phenomenon of *organization*. Organization played a central role in the life sciences in the 1920s and '30s and then again in the 1960s to address the philosophical impasses that still carried over from the older mechanist-vitalist debates of the 19th century. The task of the organization concept was to explain differentiation, dissymmetry, and specialization in the development of a form, because in the 1920s most scientists were already abandoning the idea of a direct readout theory of the diagram. Organization relies on the notion of *pattern*, it attempts to explain how pattern can arise uniquely through internal controls and how these control factors themselves are sustained, how they take on a direction, how they assume the appearance of autonomy, or life. The concept of organization targets primarily the emergence of sequenced events as the source of developmental mechanics and formal stability. These were exactly the questions that Foucault was asking about history at an institutional and discursive level, but it had not occurred to him that his method of analysis was already drawing on this paradigm through the work of his teacher Georges Canguilhem. In any case, if organization explains differentiation (novelty) and stability (persistence in being), then the third term I am positing – *coordination* – explains how things actually move, how they "transition" smoothly, even gracefully between a great variety of states, how they emit temporal, rhythmic morphologies or coherent *behaviors*.

Now integration, organization, and coordination are each abstract nouns without demonstrable correlates in the physical or chemical world. Yet this does not mean that they are immaterial – far from it! – only that they are *incorporeal*. Their materiality quite simply is not manifested in space but rather in time. It is in time, I would argue, where the diagram operates.

These three phenomena that I have identified with cybernetic or complexity models can all be grouped under a larger rubric or continuum that Henri Bergson referred to as that of "duration." Cybernetics is the science of the materialism – or the materialization – of time. There is a lot of discussion today around the problem of virtuality, and not only in the trivial sense in which one talks about objects in synthetic sensory environments. In Bergsonian and Deleuzian ontology virtuality plays an important role in explaining the problem of



appearance in the world itself and the forces that manifest through such appearance. According to this ontology (developed primarily in Deleuze's *Difference and Repetition*), a critical distinction is maintained between two models of morphogenesis, two axes or models of appearance. On the one hand, there is the Possible→Real axis and, on the other, the axis of the Virtual→Actual. Of course to speak of a Bergsonian-Deleuzian ontology in the first place is to presuppose a set of common principles in the two systems. I will suggest just two here: the idea that Being is the expression of a fundamental mobility and, second, that there are two types of difference – those that appear in space and those that appear in time – but that only the type that appears in time is *real*.

What exists around us is actual. But according to what template or diagram does this expressed world come? According to the Possible→Real (hylomorphic) model, everything real would be the expression of a Possible that preceded it, which was identical to it, and which was fully pre-given. Reality according to this model is a mere selection of images that has been prepared in advance. This is the type of pseudo- or mechanistic diagrammatism that is still prevalent today but which one wishes to avoid. An intervening principle – that of selection – guarantees that not every possible version of reality will appear, but rather only one; while another process – limitation – assures that the process of realization/expression will take place in successive stages rather than all at once. This latter principle (limitation) might appear to constitute a time principle, though in fact it does so only in the most mechanical, external, and abstract sense: reality would be nothing but a picture of possibility *repeated* (this is the bad repetition, the pseudo-diagram), and the world of possibility would be nothing more than an unchanging storehouse of images existing from time immemorial. The world here is always already formed and given in advance, a dead mechanical object. Bergson believed this to be the fundamental fallacy of Western metaphysics: the idea that there exists a "realm of possibility" underlying the world of actuality. His so-called "ontologization" of the virtual belongs to his project of freeing the diagram and its dynamo of becoming from this metaphysical basis, indeed, to establishing a neo-materialist basis for time.

Now the virtual, we are told, is real, even if it is not yet actual. (Diagrams are real but incorporeal.) What does this mean? It means that the virtual is related to the actual, not by a transposition – a becoming real – but by a *transformation* through integration, organization, and coordination. Let me explain. The virtual is real because it exists in this reality *as a free difference*, not yet combined with other differences and lodged into a salient form. Virtual is linked to actual through a developmental passage from one state to another, one in which the free difference is incarnated or assembled. It passes from one moment-event in order to emerge later – differently, uniquely – within another. (Think of a winning lottery ticket and how useless it would be to copy it.) The actual does not resemble the virtual (as the real did the possible); its rule is rather one of difference, innovation, or creation. Actualization is differentiation, because it occurs in time and with time. Every moment represents a successive individuation-differentiation of matter from the state which preceded it (every moment a unique lottery ticket). Actualization is the free movement, the capture and the *materialization* of difference. Reality becomes a flow – an irreducible actualizing duration that inflects, combines, and separates – that leaves nothing untransformed.

Every thing is given, and arrives, in time. Its qualities, its affects, and its structure may be apprehended in space, but in adopting this posture we are already breaking the world into abstractions. In time, and only in time, do matter and world reveal themselves. In other words, time is real.

To acknowledge that the world is the product of actualization processes – the exfoliation of diagrams – is to acknowledge that time, on its own, is both productive and concrete. It does not follow that this set of notions necessarily leads to an untenable or naive vitalism. As Bergson said, "Reality makes or remakes itself, but it is never something made." This clear rejection of any external agency in the unfolding of things is unambiguous evidence that Bergson was more of a "neo-" vitalist than a classical, or metaphysical, vitalist of the 19th-century type. In other words, Bergson was a thinker of *immanent*, rather than transcendent causes. This means his system sought to explain reality in the same terms in which reality is given, without having recourse to "extra" principles that come, like divine endowments, from outside the real itself. Thus the ultimate question, from an ontological perspective, would seem to be, "Why is the universe creative, rather than not, and why is it so despite the high cost of creation (negentropy)?" But of course this question is already neo-vitalist before we have even begun. It is so for the simple reason that we presuppose that the universe is driven, that it moves, integrates – that it is alive. Indeed, it is not even necessary to posit aliveness – merely the qualities of drivenness, movement, and integration, three of the primary tenets of form theory in the life sciences.

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It has been claimed by one complexity theorist that "all complexity moves toward biology," and this is no trivial assertion. Indeed complexity is the movement toward biology (some might say toward emergent intelligence, though forms of intelligence are around us everywhere, which is why we postulate the concept of the diagram as a regulatory or generative mechanism). It marks the transition where communication, control, and pattern formation – in a single phrase, relationships of information – take over in an organized substrate from relationships of energy. Historically, this movement – the emergence of what I like to refer to as a "bio-logic" – began with the 19th century's science of heat (thermodynamics) as the study of ineluctable transitions (cold to hot, order to disorder, difference to homogeneity) and the theory of evolution (the homogenous and simple to the differentiated and the complex). The life sciences could not fully emerge on an independent basis until a theoretical-mathematical basis could be provided for them. Physics itself had to become an "information" science before biology could emerge gradually to supplant it. (This history goes from Boltzmann's statistical theory of gases to the postwar era's elaborations by Norbert Weiner, Claude Shannon, Alan Turing, and John von Neumann.) This view of history makes it very difficult to accept today's common view that sees "informatics" as a new or independent development in the history of ideas and aesthetics, as a putative "third stage" following and supplanting the physics model and the biology model. What I call *the bio-logic* is the informational paradigm par excellence. To speak about "invisible" architectures and informational networks, to invoke "dematerialization" processes in their support is to misunderstand the problem. It is to mistake the incorporeal for the immaterial and to mistake the virtual for the phantom real.

Informational architectures have been at the heart of American aesthetics since the 1960s – Robert Smithson is one important example – but the advent of electronic gadgetry and the emergence of an overdeveloped communications infrastructure have not changed the fundamental problem one iota. Our problem today remains one of freeing ourselves from the impoverishments of mechanism – and indeed of the many fashionable "neo-mechanisms" – wherever they emerge, through the actualization or incarnation of "free" or invisible difference, that is, of virtuality. We can do this only through the relentless invention of techniques whose task is to materialize the incorporeal by embedding everything in the flow of time.

In time everything is related, and it is to this multiplicity of relations and their shifting and mobile nature, and to their peculiar, and incompletely theorized, unfolding within the imperturbable unity of a medium (time, duration) to which the study of complexity – or, as Bergson called it, the *science* of intuition – responds. I believe that architecture plays a privileged role here – or at least that it could and ought to play such a role – in bringing these processes of organization, integration, and coordination to the foreground not only of public and cultural appearance, but to the more subtle arena of experience itself, to the place where the time of things and the time of the body are one, to the space of intuition. Through the materialization of actualization, architecture has the capacity to free the imagination from three-dimensional experience, to free it from the contemporary curse of so-called "invisible processes" and hidden diagrams and to show us that processes and events, the ones that give form to our world and our lives, have shapes of their own.

In many mainstream areas of research today, new concepts and tools are emerging whose purpose is specifically to emancipate thought from the clichés of reductionism (from classical science and numerical explanation). These target macroscopic, hybrid, and global phenomena, and they conceive of them as open systems in continual metabolic turmoil and exchange. They grasp material phenomena through their qualities (or else they posit statistical and probabilistic distributions in order to numericalize them), because that is primarily what they are: organizations of *effects*, not quantities. The real world is always a world of effects (events), not quantities, though clearly some of our narrowest thinkers have forgotten that this is the case. These developments may well be returning us to some sort of archaic or anti-rationalist point of view but I do not believe that this is necessarily a bad development; at worst it presents a new set of dangers and pitfalls to thought, and at best, new possibilities for thought and life.

Qualities are very dense, embedded, and complex entities. They once so overpowered perception and the imagination that the mind was continually beaten back into superstitious postures. The modern, rationalizing mind thus set out to organize the world so that it could become apprehensible to, and manipulable by, rational operations. Today those operations have begun to approach the point of radically diminishing returns. Our lives and our world have been desiccated by numbers and so the mysteries of the qualitative world are necessarily beginning to recapture attention. The difference is that today we have a scaffold of mental technologies with which to investigate the qualitative world in a relatively systematic manner. Though there is little danger of falling back into the old types of religion and superstition, we will undoubtedly begin to tolerate in serious discourse a great deal more in the way of ideas and models and worldviews as we begin to ween ourselves from the centuries-long tyrrany of merely reproducible facts. This is no doubt why the diagram issue is becoming preeminent today: it represents a fresh approach to knowledge, the idea that geometry has a truth that cannot always be reduced to algebraic expression. Forces exist, and can be explained, even if they cannot be rigorously predicted. The classical prediction criterion of truth hid this fact, and much of reality, from our purview. Designers were crippled by this exclusion, and were left either to tinker in the sandbox of "styles" or else in the rarified and bodiless realm of hyperrationalist abstractions. Both of these represent sad academicisms, and the movement today toward the world of the real does not constitute an anti-intellectualism. Rather, it is a revival of archaic materialist thought.

The question arises as to whether the diagram is scientific and explanatory or literary and illocutionary (provoking acts not based on verifiable truth functions). One would hope that no single or definitive answer will ever be furnished. Clearly both functions are necessary, for each is necessary to protect us from the excesses of the other, and only the joint action of both together, in turn and in oscillation, can assure us the mobility of thought and action to sustain our own political apparatus in the face of a very fluid and labile enemy. The diagram gives us the power to program historical becoming, as well as to hack the programs currently in place. Diagrams must be conceived as songs as well as hammers. Truth after all, is a function of will, not facts.

(This essay is based on an interview conducted for *OASE* magazine, Holland, 1997, by Wouter Dean and Udo Garritzmann.)