

“Notes on Abstraction”

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There were the greats, Euclids, etc., but today everyone must work at trying to interpret the riddle of technology. - Paul Virilio

The time has come to stop making sense -- to replace History with myriad exaggerated theories of post-, para-, quasi-, and super-. History has been defeated by the determinisms of market and numbers, by the processes of reification and abstraction. These form the great juggernaut of modernity that has destroyed History by absorbing it, by turning each of History's independent concepts to serve its own purpose. Another kind of response is then called for. Ideas that themselves change or dissipate as they are absorbed, that are formed with the presupposition that they will be subject to reification. Only a rear-guard action is possible, of guerilla ideas that can disappear back into the jungle of thought and re-emerge in other disguises, of fantastic, eccentric ideas that seem innocuous and are so admitted, unnoticed by the media-mechanism, of doubtful ideas that are not invested in their own truth and are thus not damaged when they are manipulated, or of nihilistic ideas that are dismissed for being too depressing.

It seems that “the war babies,” those born after 1937-38, were “born dead” -- to use a motto favored by the Hell's Angels. The philosophism of “reality” ended some time after the bombs were dropped on Hiroshima and Nagasaki and the ovens cooled down.¹

Marxian thought has always assumed that the breakdown of the pretenses of humanistic culture would yield a reality that was more responsive and coherent than that of humanistic illusionism. Yet behind the mask of humanism there exists not the truths of materialism but the nightmare scenarios of logic and determinism. There emerges a crystalline world responsive only to numerical imperatives, formal manipulation, and financial control. Consider the 200 or so general reservations agents at Pacific Southwest Airlines in San Diego. The airline warns its agents that they are subject to “computer-assisted productivity measurement and telephone monitoring.” Simply put, this means that the agents are electronically supervised from the moment they plug in their headsets to the moment they leave. They are expected to average 109 seconds a call, and 11 seconds between calls, during which time they catch up on paperwork. The computer also tracks break and lunch times. Agents are subject to demerits if they are “unplugged” for more than 12 minutes a shift.²

Capital has always spoken of itself as a culture of flux, premised on ideas of change, evolution, and development. But capital is, in fact, a universe of stasis, governed by immutable self-perpetuating principles that gradually but incessantly push back all other realities in a process of ever-increasing purification. Ironically, the universe of pure capital, characterized by the model, by numerological truth, and by abstract relations, is a kind of realization of idealist philosophy. But the world of essences turns out to be dominated not by Spirit, but by the commodity. The abstract world turns out to be not a utopia, but a site of alienation and banality.

This is perhaps the real meaning of American culture: the image of immigration over the

ocean, of travel over the plane of water. That voyage entailed a process of erasure by which, through passage over an abstract plane, the specificity of Europe could be disengaged, leaving the laws of capital to play themselves out unfettered.

This is not to say, however, that America is the future. On the contrary, Europe is today the true locale of science fiction. The evidence is all there: the cars are faster, products are more rationally designed, the financial markets function with greater suppleness. Even Europe as nostalgic site of authenticity bespeaks its science-fictional character, as if it were the continent that "time had forgotten." World War II brought about another kind of disjunction with the past.

Programs called "worms" are capable of altering a system's fundamental operations or shutting it down entirely. They delete specific portions of a computer's memory, thus creating a hole of missing information. Another type of software demon, called a "virus," instructs the host machine to summon its stored files. Each time the machine does so, the program copies itself onto the software. The computer's memory can soon turn into a mass of confusion.³

Use-value and exchange value. The idea of change in capitalism is premised on the idea that consciousness within capital can qualitatively change. Such change is embodied in the idea of a change from a society of use-value (where men were men and horses were horses) to a society of exchange-value, where illusion and manipulation are dominant. But when was this golden age of use-value? Is it not possible that use-value was an ideological invention of the Nineteenth Century? After all, the birth of modern capital in the Renaissance was based on trade in luxuries, in silk and in spices. It was based on the invention of bills of exchange. The first mass-produced objects were books.

The factories extend their flanks of fouler brick one after another, bare, with shutterless windows, like economic and colossal prisons. . . . And inside, lit by gas-jets and deafened by the uproar of their own labor, toil thousands of workmen, penned in, regimented, hands active, feet motionless, all day and everyday, mechanically serving their machines.⁴

As early as the Renaissance, certain structural features appear in capital that remain unchanged to the present day, while at the same time undergoing a continuous process of intensification. These devices are premised on the idea of the breakdown of existing limits of time and space, and replacing those limits with more malleable definitions. Paradigmatic of these devices was the invention of the bill of exchange, by which a merchant could buy or sell goods in one city by means of a note promising payment in another city at a later date. At the same time, corporations were first formed whose members were tied together by common business interests rather than by familial relationships. At this point also, transportation networks began to develop, with the emphasis on decreasing the time it took to travel or move goods from one place to another. The constant impetus has been to make time more easily manipulated, while specific spaces have become more interchangeable. The guiding principle has been to replace all other directives with the governing power of the market.

Should an American savage come to the Palais Royal, in half an hour he would be most beautifully attired and would have a richly furnished house, a carriage, many servants, twenty courses on the table, and, if he wished, a blooming *Lais* who each moment would die of love for him. Here are assembled all the remedies of boredom and all the sweet banes for spiritual and physical health, every method of swindling those with money and tormenting those without it, all means of enjoying and killing time. One could spend an entire life in the Palais Royal, and as in an enchanting dream, dying, say, "I have seen and known all."⁵

If capital is static, how then does one account for the appearance of change within capital? While capital's basic forces remain static and move towards establishing their pure hegemony, the economy of scales does change. As capital's domination becomes more and more complete, so does the level of alienation become intensified. The notion of a classical capitalism existing in the Seventeenth Century thus also comes under scrutiny. The idea of a classical capitalism would thereby become a completely purified capital of the future rather than a rudimentary capitalism of the past.

The biological model was not the most appropriate one for the history of things. Perhaps a system of metaphors drawn from physical science would have clothed the situation of art more adequately than the prevailing biological metaphors: especially if we are dealing in art with the transmission of some kind of energy; with impulses, generating centers, and relay points; with increments and losses in transit; with resistances and transformers in the circuit. In short, the language of electrodynamics might have served us better than the language of botany; and Michael Faraday might have been a better mentor than Linnaeus for the study of material culture.⁶

The appearance of change in capitalism is premised on two factors. First, increase in numerical scale produces a development in the character of institutions. Thus, a row of seventeenth-century houses in Amsterdam differs from Co-Op City in New York. Renaissance Florence differs from late Twentieth-Century Tokyo. The speed of the stagecoach differs from that of the Concorde. But structurally, each of these phenomena remains consistent with its predecessor. Secondly, each stage of technological and social development is based on a further step towards abstraction: a further severing of the ties between the goal to be achieved and material nature, a further tying of technology to the abstract reality of rational thought. Thus, to draw again from the example of transportation, one observes a progression from sailing ship, to steamer, to nuclear-powered submarine. In the development of money, one sees the progression from the precious-metal coin (bearing the likeness of the sovereign), to paper money (bearing the symbols of the state), to the plastic credit card (bearing the logo of the corporation).

Ed Debevic's is a zany 1950s diner where the cooks heap on the meatloaf, the waitresses wear saddle shoes and a brightly colored sign reads, "Ed's Chili Dog: The Cadillac of Chili Dogs." A half mile south stands Shaw's Crab House, a dimly lit seafood emporium reminiscent of the haunts that gangsters frequented in the 1940s. On the north side of town, Un Grand Cafe, with its brass fixtures and festive paintings, recreates the fin de siecle gaiety of a Paris bistro. Although very different, these colorful restaurants have two things in common: they usually have lines out the door, and they are owned by Richard Melman, an irreverent 44-year-old restaurant impresario. . . . To get the atmosphere right, Mr. Melman pens a description of each proposed restaurant as if it were a movie treatment. For Ed Debevic's, he wrote that the year was 1952, when teenagers were not yet wild and Elvis was not yet a giant. Ed, a fictional character, was Polish and opened up his diner after serving in Korea.⁷

This idea of progressive abstraction combined with progressive numerical increase might be characterized by the term hyperrealization. Hyperrealization is usually used to describe the jump between industrial culture (the real) and post-industrial culture (which is hyperreal). However, one can draw from that chain of events a sequence which more generally describes the progression of epochs within capital. Each era becomes a hyperrealization of the preceding era, which in turn is assigned the value of reality.

The process of hyperrealization is vividly seen in a single urban landscape -- such as that of New York. The walk-up row house is hyperrealized into the large elevator-serviced apartment building. The corridors, plumbing, and electric systems of the brownstone multiply and proliferate into new configurations reflecting new hyperrealities of population, economics, and technology. In a similar way, the office building is transfigured. Scale is transformed from the four- or five-story commercial building, to early skyscrapers like the Woolworth Building, to the World Trade Center, with its massive height and floor space. Materials change from wood, brick, and stone, to steel and glass, to synthetic plastic panels. The early office towers emphasized high-relief in their facades -- allowing natural light and shadow to play dramatically across their surfaces. In the post-war era, the curtain walls become flatter and flatter and more and more reflective and glossy. The passage of light is de-emphasized, while the interior of the building becomes visually hidden (by its reflective surface): on a symbolic level, as well, the office tower moves toward self-contained reality.

The use of this idea of hyperrealization is particularly helpful in the analysis of events in twentieth-century art. One may see Cubism as a hyperrealization of Cezanne, or Cezanne,

for that matter, as a hyperrealization of Courbet. Similarly, one can understand Abstract Expressionism as a hyperrealization of pre-war European modernism, or Frank Stella as a hyperrealization of Abstraction Expressionism. Each transition reflects a movement toward abstraction, in the social sense, from the previous norm. Thus, in each stage, form becomes both more empty and more generic. In certain cases, such as that of Abstract Expressionism, scale is even made to increase in a way that follows the increase in scale evident in the social landscape.

The modern conception of man as a machine is more economic than biological in its accent. It refers to the human robot rather than the human animal, and suggests an efficient control of the costly movements of the body, a submission to some external purpose indifferent to the individual. . . .8

Hyperrealization also offers a useful alternative to the polar concepts of influence and appropriation. If the idea of influence posits an historical, conscious relationship between one generation of artists and the next, and appropriation offers a denial of such ideas as historical hierarchies and the possibility of transformation, hyperrealization implies that cultural change does occur. However, such changes are beyond the historical will of the artist and are subject instead to the movement of conditions within the social. Hyperrealization would differ, moreover, from the psychoanalytic idea of the "strong misreading," which implies as a source of change an Oedipal struggle between one generation and the next. Hyperrealization suggests that, regardless of the possible existence of such Oedipal conflicts, generational change in culture is caused by extra-individual deterministic social forces.

Hyperrealization also helps explain the fixation with "The New" that is characteristic of this culture. It is sometimes said that The New is tied to the concept of originality. But The New is more profoundly linked (as is perhaps the cult of originality itself to the process of hyperrealization). The New represents the hyperrealized state of something that came before. Thus, consumer products are often labelled "New" to lend them the aura of hyperrealization. There are also periodically cultural movements entitled New or New Wave -- in music, dance, or literature (there is even a New Humanism). Such labels announce the arrival of a phenomenon that seeks to be seen as a hyperrealization of the previous cultural norm. The prefix pop- (as in pop-culture) functions in a similar way.

The perfect heroes and heroines of this myth of modernity were the petite bourgeoisie. They appeared in many ways to have no class to speak of, to be excluded from the bourgeoisie and the proletariat and yet to thrive on their lack of belonging. They were the shifters of class society, the connoisseurs of its edges and wastelands. Thus, they became for a time the alter egos of the avant-garde -- ironically treated, of course, laughed at and condescended to, but depended on for a point of insertion into a modern life.⁹

As the process of hyperrealization leads unceasingly to the closure of the system of capital, all the old organic categories begin to lose their meaning. The traditional dualities of life-and-death and male-and-female collapse into identities. There are today no longer any men or women, despite the seeming revival of those categories in the current decade. In fact, a figure like Sylvester Stallone is emphatically not male but only a generic sign for the idea of male, while Madonna is only a sequence of nostalgic representations of female. Likewise, the poles of life and death collapse into a state of non-life and non-death. No one either lives or dies. The possibility of life is negated by the imposition of mechanical time and by regimentation, both physical and temporal. Meanwhile, death is replaced by disappearance and is negated by the manipulation of time within the recording media.

In the visual arts, the era of the early 1970s believed itself to be a great flowering of post-capitalist culture. It believed that the commodity and its mind-set would be replaced by performance and by site-specific works. The artist would perform in real time, enacting an example of non-alienated work. The artist would play out the role of the free-subject, creating a model that would be emulated elsewhere in society. But the '70s represented not the flowering of a new consciousness, but rather the last incandescent expression of the old idealism of autonomy. After this, no time would be real, no labor would be living, no cultural expression would

be outside the commodity system.

The artists of the '70s abandoned living in the traditional urban neighborhoods and began to inhabit under-utilized manufacturing buildings in places like Soho in New York. In doing, they were rejecting all the problems of the established capitalistic urban order and were starting for themselves a new culture in these buildings where people had never before lived. Here, there would not longer be bourgeois apartments, but only open "spaces." Harmful commercial American food would be replaced by life-giving macrobiotic cooking. But this kind of "renovation," by which the commercial function of the old loft buildings was ignored and formally changed, was, in fact, a crucial factor in the modern city's transformation into its empty double. Suburbia, which had previously come to surround the old "modern" city from without, now began to take seed, like a virus from within, as these areas were turned into "bedroom communities."

[Howard Hughes] was the first one to close the empty circle, in the thirties, with his Lockhead Cyclone -- note that it wasn't a mystere or a Phantome, it was a cyclone. . . . He came back to the same spot, New York. Howard Hughes was the Lindbergh of the end of the world, a hero of post-modernism. After he invested enormously in aviation, he set up movie studios. He had a hand in everything that appeared at that time having to do with speed, the airplane, and the cinema. He tried to enjoy his omnipresence in the world. First, he lived by having several apartments all over the world, each decorated the same way. Every day he was served the same meal, brought the same paper at the same times. . . . Then the situation became unbearable and he ended up a technological monk in the desert of Las Vegas, without getting out of bed. He spent the last fifteen years of his life shut up in a hotel tower, watching films, always the same ones, especially an old American film on the life of men shut up in "Ice Station Zebra" in the North Pole. He saw it one-hundred sixty-four times.¹⁰

The consumer-credit corporation had acquired an investment banking and brokerage house. The needs of the brokerage house required that an extensive new computer facility be built. The corporation had originally planned to build the facility in the suburbs, where costs were lower, but a location was selected in the city after the city government had offered the corporation a site for free. The building was called the Financial Services Center. It was located next to a highway, for automotive access. Twin escalators ran up to a second-floor elevator landing. At night, car-service taxis would line up to take home late-working employees. But the computer center was also situated in an area of warehouse buildings that had been converted for residential use. Thus, "amenities" were required for the "community." Next to the building, which was a modern design, sheathed in prefabricated, textured concrete panels, in front of the parking area, a small park was built with lawns, nineteenth-century lampposts, and a wooden latticework pavilion supported by white neo-classical columns. Around the perimeter of the park were several tall metal poles, functional in design, without any historical decoration, on top of which were located video surveillance cameras, in beige enamel bullet-proof casings.

There is a certain collapsing of the poles of capital and labor. The CEO, nominally the corporate leader, is captive to the status of the corporation's profits and stock price. The company's stock may, in turn, be held by a variety of institutions including, perhaps, union pension funds, which are presumably representatives of labor. Likewise, for labor, as it is cast in the role of the consumer, there is a move toward the leveling of hierarchies. Andy Warhol said, "You can watch TV and see Coca-Cola, and you can know that the President drinks Coke, Liz Taylor drinks Coke, and just think, you can drink Coke, too."

There is also a certain breakdown in the hierarchies of work. The impetus to power is replaced by an impetus to glamour. As Warhol also explained in 1975 (before airline deregulation): Airline stewardesses have the best public image. . . . Their work is actually what the waitresses in Bickford's do, plus a few additional duties. . . . The difference is that airline stewardessing is a New World job that never had to contend with any class stigmas left over from the Old World peasant aristocracy syndrome." Most importantly, however, the heads of the system -- the 'captains of industry,' the producers of popular entertainment, and the political leaders -- no longer operate in a free field either. They too are prisoners of demo-

graphics, computer models, and market forces.

Life has been replaced by what Debord calls the “non-living.” This is the space of dead labor where life no longer follows its own course and becomes alienated from itself. The role of living is transferred onto the figure of the celebrity who plays out the idea of autonomy with its free field of action. Life becomes solely a media image. Archeologists believe that in Aztec society, specially chosen youthful members of the nobility were given a year of pampered life and then sacrificed for the satisfaction of the gods. But the practices of contemporary culture are no less savage. When a person becomes a media celebrity, his or her life is no less literally taken away. The celebrity’s organic time is put to use to create the generic image the media requires. The star “renounces all autonomous qualities in order to identify himself [or herself] with the general law of obedience to the course of things.”

The very idea of organic time is superseded and replaced by a mechanized, segmented, digital time (that corresponds to the space of this system). The standard of chronological measurement has become the fate of vibration of the quartz crystal. Living time is transferred onto the sequential, segmented, linear mediums of visual and audio recording. First, film replaces organic time with its strings of mechanically-timed sequential images. The videotape replaces film, further entrapping life into magnetically-encoded lines of information. In audio, as well, sound is first transferred onto the phonograph record where it is mechanically reproduced by means of the linear track of the stylus, then onto magnetic tape, and finally onto the audio disk, where a light beam reads digitally-encoded information. As the system is purified, it gains a para-spiritual quality: living sound becomes an alchemical amalgam of light-beams and numbers.

The same system that mediates life mediates death. The inscription of time onto these linear tracks allows it to be halted, repeated or altered at will. With film and television technology, a scene from London in the 1930s, for example, can be replayed at any time and any place. The “action” never dies, but it loses its specificity as to time and place. Warhol, in particular, understood this process. This is what led him to undertake the constant activity of photographing, taping, and filming. In so doing, he took it upon himself to re-enact the functioning of the media, its transformation of the organic moment into the media moment. It is nevertheless true that, for the time being, there is still some awareness of the organic death of the physical body. But this has become an event without meaning, an embarrassment. When possible, it is hoped that the bodies will just disappear, so as not to interfere with the reality of media time.

Life and death also lose their meaning as metaphors that describe culture. To speak of the death of modernism is to speak of an organic end in a culture in which the construct of the organic has become both dispersed and crystallized, in which endings are transformed into sequential continuities. Death is replaced by the process of hyperrealization. Classical art does not die. It is hyperrealized into modernism. Modernism, in each of its stages, is, in turn, hyperrealized into something else.

On the Sony, a two-dimensional space war faded behind a forest of mathematically generated forms, demonstrating the spatial possibilities of logarithmic spirals; cold blue military footage burned through, lab animals wired into test systems, helmets feeding into fire control circuits of tanks and war planes. Cyberspace . . . a graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data.¹¹

There are religious overtones to these occurrences. The numerical systems become in and of themselves the bearers of meaning in the culture. In this sense, there are three great religious centers in the United States: Los Angeles, which is the new eternal city, the new Rome of the media, and Las Vegas and Atlantic City, which are pilgrimage towns where the populace goes in quest of numerical truth. Los Angeles is the Rome of media representations. In Beverly Hills, the houses of the stars are laid out with all the frozen splendor of the palaces of cardinals in Baroque Rome. Throngs go to Universal Studios and Disneyland to pay homage to these shrines of media reality. Las Vegas and Atlantic City are the great sites of the vision

quest. With the timeless and placeless casinos, the populace tests itself against the pure numerical games. Here the metaphysical lessons are learned, portends reveal themselves, fates are sealed.

Get back in touch with yourself by getting into a Kohler Masterbath. Now your private world consists of six climate sensations (sauna, whirlpool, sun, steam, wind, and rain), each to be conjured or banished at will. Program your climate in advance or change it from moment to moment.¹²

Along with life and death and men and women, sexuality also ceases to be a factor. The '60s and '70s were not so much a period of sexual revolution as a last florescent display of the idea of sexuality before its collapse into the ecstasy of numbers. Foucault claimed the ancient regime was a society of blood where martial courage, the willingness to die in war, was the ruling passion. He claimed that bourgeois culture invented sexuality, with its emphasis on procreation, familial cohesion, and sensual pleasure. If the sexual era has an historically-determined beginning, it may also have an historically-determined end. Today, the passions of the flesh are replaced by more abstract obsessions. There is the eroticism of speed, of the automobile and the airplane; there is the eroticism of numbers, of the financial markets and the personal computer; and there is the eroticism of the media, of the Walkman and the color T.V..

What seemed to be an environmental expedient turned out to be the key to creating a new kind of internal world -- a theater that walled out all distractions and focused all attention on what the industry calls the "retail drama." Because it is cut off from the Earth's daily and seasonal rhythms, and because management demands that everything always looks new, the enclosed mall is timeless: because it is isolated from its surroundings everywhere, the mall is placeless. It is a malleable space in never-never land, linking the idea of shopping with the idea of entertainment.¹³

Throughout this century, artists have described the transformation of the organic body into the machine. Cubism, Futurism, and Duchamp (in *The Large Glass*) were all concerned with this eventuality. Robert Smithson's early work is obsessed with the same notion of flesh becoming armor, with organic appendages becoming riveted tubes. Warhol, of course, said that he wanted to be a machine. The conceptual artists took this one step further, making art that approximated machine processes. Hanne Darboven became a computer lost in its own calculations. Roman Opalka became a kind of human digital clock. Sol LeWitt anticipated computer program trading on Wall Street with program sculpture.

All this reflects the literal loss of the human body in this century. The human figure becomes the statistical figure. The production line substitutes mechanical motion for organic motion. In medicine, medical engineering replaces human organs with electro-mechanical ones. Pills, whose appearance always retains a purist geometric and coloristic symbolism, are ingested to change metabolic function or mood. Genetic engineering, of course, completes this process. Not only is the basis of life explained as numerologically encoded data, but life is then subject to techno-mechanical manipulation whereby the laws of production finally replace reproduction. Each human life becomes a statistic, demographically useful in determining government policy, marketing strategies, and insurance rates. Previously, it was only the worker whose body was subject to compromise by the machine. Today, the whole social body willingly subjects itself to the same regimentation. There are the disciplining stainless steel machines of the health club, the confined geometric spaces of the automobile, and the functionalism of the International Style.

Sol Yurick, in his book *Metatron*, has written of this system from a point of view that might be called a reverse-structuralism. According to Yurick, it is not ancient, natural archetypes that are influencing the present system. Rather, pure capital itself is a perfect formal archetype that one can see crudely played out in traditional power structures. Thus, the present represents a disclosure of the play of pure financial and electronic systems, no longer encumbered by traditional mythology and symbolism.

Despite the contribution of Baudrillard, it is important to note that the significance of Simulation is as a summary of the researches of the '60s and not as an original discovery in and of itself. Within the realm of criticism, Simulation is a synthesis of the Debordian Spectacle and the semiotic researches of Roland Barthes. But the precedents in the arts in the '60s are no less clear: The Beatles, after all, sang, "Strawberry Fields, nothing is real, nothing to get hung up about." Warhol said: "Nothing was ever a problem again, because a problem just meant a good tape, and when a problem transforms itself into a good tape it's not a problem anymore." The key contribution of Baudrillard is his detailed description of the functioning of a semiotic system without a referent.

The combination of darkness and enclosure of the gambling room and its subspaces makes for privacy, protection, concentration, and control. The intricate maze under the low ceiling never connects with outside light or outside space. This disorients the occupant in space and time. One loses track of where one is and when it is. Time is limitless, because the light of noon and midnight are exactly the same. Space is limitless, because the artificial light obscures rather than defines its boundaries.¹⁴

Progressively, all of the social is being transferred onto the electro-magnetic digital grids of the computer. From long-distance telephone service, to air-traffic control, to banking, the flow of all communications, movement, and resources is channelled through the digital circuits. The computer chip becomes a universal gateway through which everything must pass. With computer graphics and synthesized voices and music, computers even gain a hand in rebuilding specific reality according to their own digital rules.

It is not generally acknowledged to what extent each individual is tied to these grids of computer communication. But the telephone line is an endpoint in a huge electronic network that enmeshes the entire globe. More importantly, credit cards, which are replacing the relative autonomy of currency, tie huge segments of the population into a kind of slavery of computer debt. One is lured into the system with the promise of a "credit line," the ability of the "user" to spend the computer money any time and any place. But, if the payments are not made, a kind of passive wrath comes down on the user, who is banished from the system and the grids. That is to be left as helpless as an excommunicated Christian in the Middle Ages.

Thus the social is finally becoming the site of "pure abstraction." Each human being is no longer just a number, but is a collection of numbers, each of which ties him or her to a different matrix of information. There is the telephone number, the social security number, and the credit card number. The financial markets, those huge arenas of abstract warfare, have completely detached themselves from any relationship with the material world. Currencies float. National boundaries crumble. The markets come to be governed by technical factors, by computer-controlled trading. The hero of the marketplace is no longer the engineer, who is still engaged in practical technology, but rather the financial wizard, the "number cruncher," the manipulator of purely abstract forces.

On an experiential level as well, the social moves onto the grids of circulation, each one embedded in the next. Each day, the "suburbanite" moves from subdivision to car to office building. The traveller moves from the grid of the urban streets to the transcontinental network of superhighways to the global network of air travel and back again. Sensual pleasure is replaced by abstract pleasure. Food is replaced by ambience. Space is replaced by amenities.

The history of abstract art is a reflection of the history of this transformation. With Cezanne, the materiality of the object comes to a poignant end. In Cubism, the burgeoning commodity-culture of the new Twentieth Century, and its inhabitants are transformed into a gray world of abstract planes and vectors. With Mondrian, a decade later, any reference to specificity is gone and the world is described as an utopian grid of abstract flows and forces. If Mondrian emphasized the systematization in this situation, Abstract Expressionism reflects the alienation to which this system gives rise. Systemized space is revealed as emptied of meaning. This is the reality with which the empty spaces of Rothko, for example, are filled. Thus the

history of abstract art is the history of a real progression in the social. It is the history of the organization of the compartmentalized spaces and the formal systems that make up the abstract world.

Notes

1. Robert Smithson, "A Museum of Language in the Vicinity of Art," *Art International*, March 1968.
2. Harley Shaiken, "When the Computer Runs the Office," *The New York Times*, March 22, 1987.
3. Jamie Murphy, "A Threat from Malicious Software," *Time*, November 4, 1985.
4. Hippolyte Taine, *Notes on England*, 1859.
5. Karamin, *Letters*, 1790.
6. George Kubler, *The Shape of Time*, 1962.
7. Steven Greenhouse, "Eateries Aim to Entertain," *The New York Times*, August 21, 1986.
8. Meyer Schapiro, "The Nature of Abstract Art," *The Marxist Quarterly*, 1937.
9. T. J. Clark, *The Painting of Modern Life*, 1985.
10. Paul Virilio, *Pure War*, 1983.
11. William Gibson, *Neuromancer*, 1984.
12. Kohler magazine advertisement, 1987.
13. William Severini Kowinski, "Main Street in a Spaceship: The Covered Mall," *Smithsonian*, December 1986.
14. Robert Venturi, Denise Scott Brown, Steven Izenour, *Learning from Las Vegas*, 1972.