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*.

Jean-Luc Godard, "Introduction a une veritable histoire du cinema," **Camera Obscura** 8-9-10 (1982): 74–87.
Jean-Luc Godard, **Godard on Godard** (New York: Da Capo, 1986).
Stephen Greenblatt, **Renaissance Self-Fashioning: From More to Shakespeare** (Chicago: University of Chicago Press, 1980).
Angelika Hurwicz, "Brecht's Work with Actors," in **Brecht as They Knew Him**, ed., Hubert Witt (New York: International, 1974).
Chuck Jones, **Chuck Amuck: The Life and Times of an Animated Cartoonist** (New York: Farrar, Straus and Giroux, 1989).
Chuck Jones, **Chuck Reducks: Drawing from the Fun Side of Life** (New York: Warner, 1996).
Hugh Kenner, **Chuck Jones: A Flurry of Drawings** (Berkeley: University of California Press, 1994).
Jacques Lacan, **Seminar XI: The Four Fundamental Concepts of Psychoanalysis** (New York: W. W. Norton, 1977).
Jacques Lacan, **Seminar VII: The Ethics of Psychoanalysis** (New York: W. W. Norton, 1992).
Jacques-Alain Miller, "The Drive is Speech," **UMBR(a) 1** (1997): 15–33.
Gerhard Richter, **Paintings** (Bolzano: Museum of Modern Art, 1996).

Parts of this essay were originally presented in July 1997 at morphe: nineteen97, a conference held at Deakin University in Australia, and in October 1997 at Recent Work: Architecture and the Politics of Advocacy and Identity, the **assemblage** conference held at the Columbia University. My thanks to the organizers of those events, and to The Graham Foundation for Advanced Studies in the Fine Arts, under whose largesse I have been exploring forms of attention in architecture.

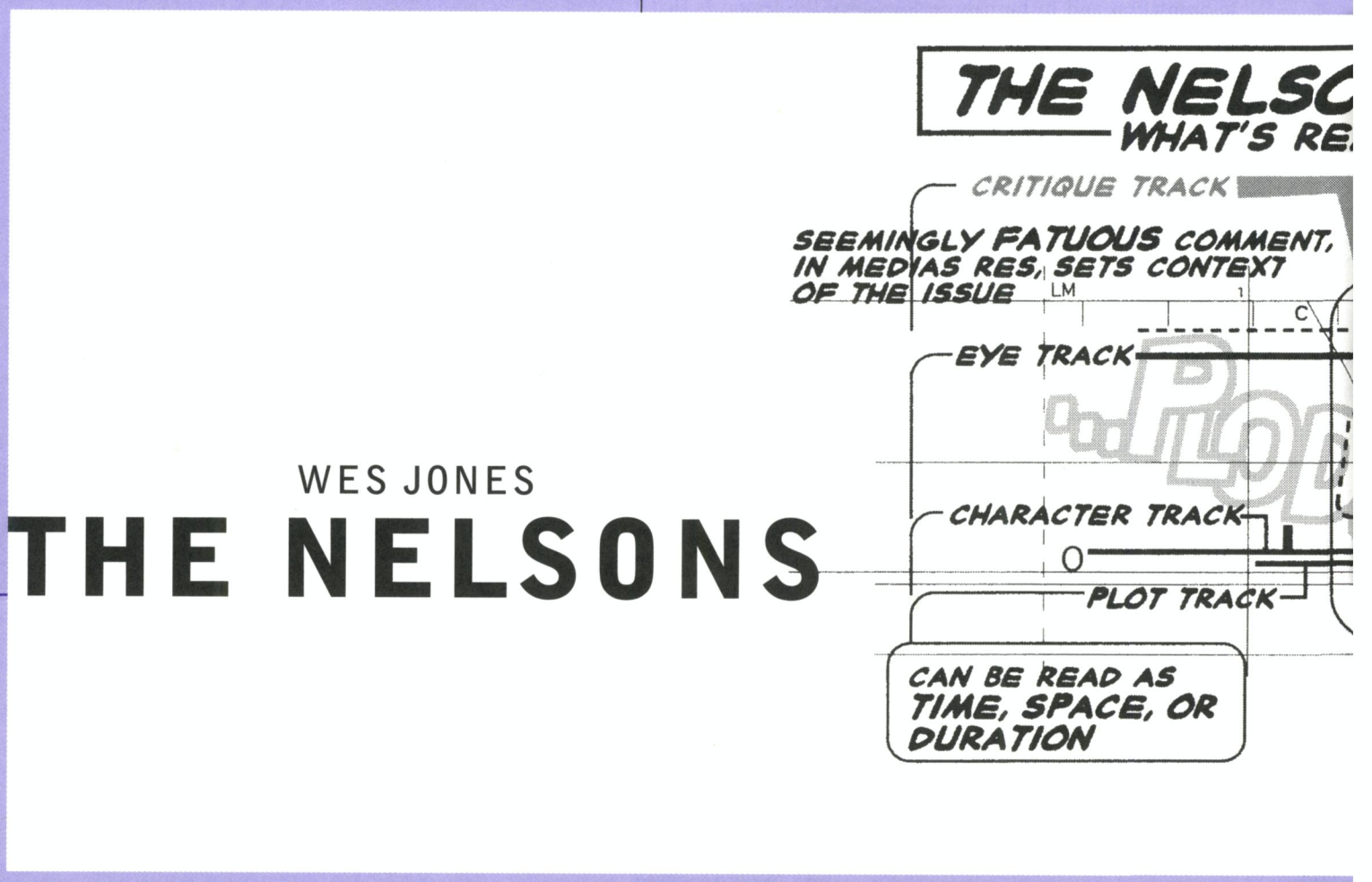
From Goethe then, we were supposed to have learned that diagrams do not themselves produce form (at least in no classical sense of this word) but rather that diagrams emit *formative and organizational influence*, shape-giving pressures that cannot help but be "embodied" in all subsequent states of the 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

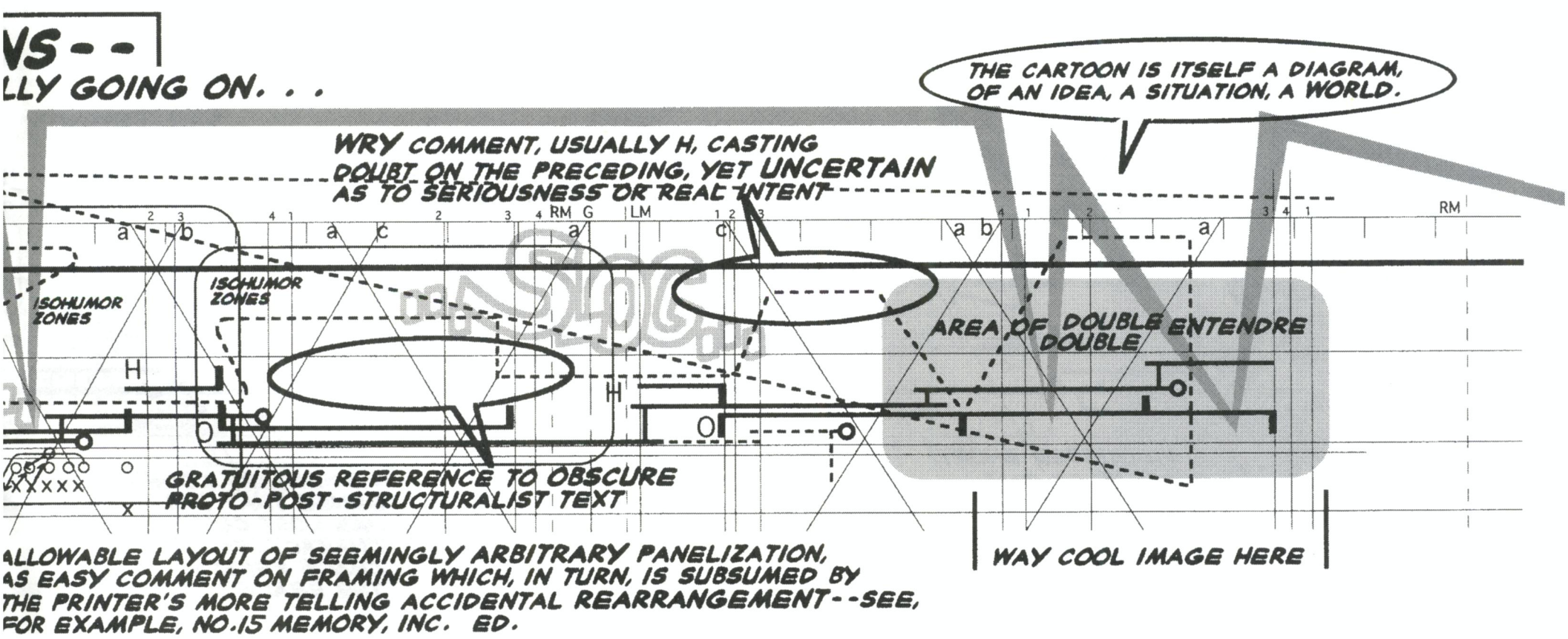


another. This obviously poses a whole new set of problems and possibilities for the theory of perception, and it certainly frees us from static, abstracting, and vision-based concepts of space. Somewhere along the line one has jettisoned both Newton and Kant, despite the fact that they served as the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



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.

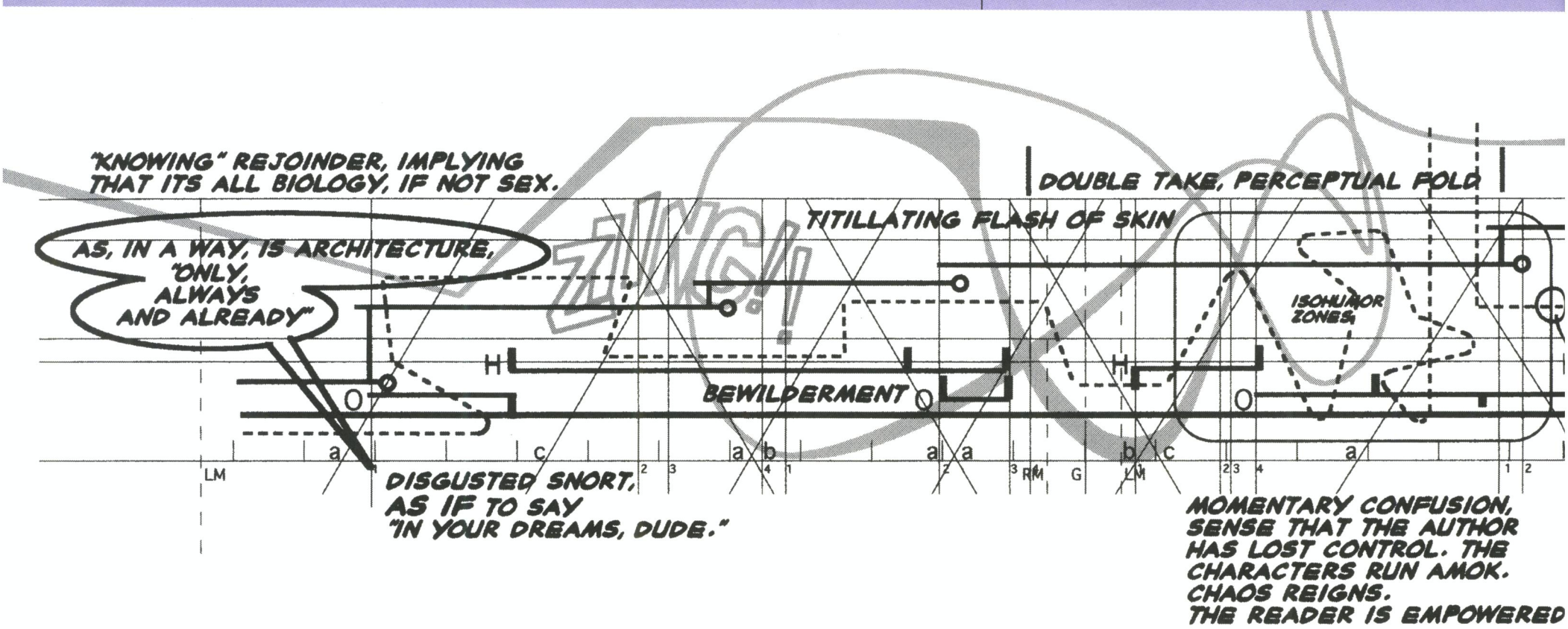
Cybernetics can be said to target three primary phenomena in the natural and the nonnatural world: integration, organization, and coordination. These phenomena undeniably exist in the world, but science has never been able to interrogate these phenomena in their customary numerical or "hard" terms. Philosophy 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



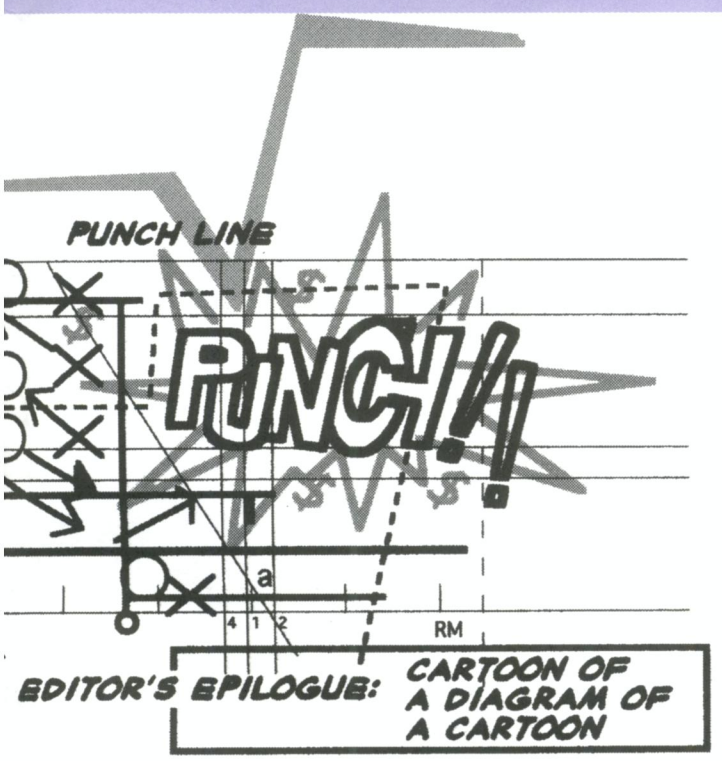
appearance in the world itself and the forces that manifest through such appearance. According to this ontology (developed primarily in Deleuze's *Difference and Repetition*), a critical distinction is maintained between two models of morphogenesis, two axes or models of appearance. On the one hand, 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.)