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# Signs Under Stress

**Paul Bains, *The Primacy of Semiosis: An Ontology of Relations*. Toronto: University of Toronto Press, 2006.**

By Kane X. Faucher

In the perpetual dance of signs, semiosis is generally regarded by followers of C. S. Peirce as occupying the role of "thirdness" — meaning that the relationship between object, sign, and interpretant exist as a non-mental mode that cannot be reduced to a binary and self-enclosed relational circuit between two subjects. Bains' bold move, bolstered by his careful reading of Poinsot, Deely, Uexküll, and Deleuze, is to grant semiosis primacy. Rather than to rely on a cross-referencing system in a Peircean tri-relative formulation, Bains positions semiosis above "the dance" of signs as a means of explaining how external relations - requisite for understanding the circumspect and elusive aspect of interbeing — are possible. Semiosis has long been the proverbial "elephant in the room"; it exists, yet hitherto no verifiable and fully satisfactory account has been given to form an explanatory bridge between semiosis and its multitude of effects. Bains, in reassessing the much-neglected work of Thomist John Poinsot, offers us a plausible account for the way in which semiosis can work without defaulting to Baudrillard's extreme position that signs and their relations exclude the real by ignoring the ambivalence of the sign. Indeed, the semiotic "grid" is under stress. The problem is not that the failure of discovering an ultimate signified will cause signifier overrun (as per Derrida's assertion), but that the relations themselves are antecedent to the consideration of signification.

Jakobson says that there is a unity of the perceptible *signans* and the ideatic *signatum*, and that this unity contains within it all relationships of a semiotic variety. This, however, is an unsatisfactory explanation for incorporeal events without lodging such an event (the "greening of the tree") into the body as a kind of subsidiary attribute, reducing the relationship of the *signans* to the *signatum* as a single referent.

Against the view that external relations are subordinate to mere symptoms of internal relations, we can turn to Galen who made symptoms a "case" and not the entire regulatory structure of his semiology. Galen draws from the original *semeion* as a means of interpreting bodily phenomena not directly observable by the senses (see *Tegni*). Although Galenic semiology is indexed to the domain of medicine, and despite corrupted translations by Gerard of Cremona and Italian scholasticism (most notably Jacopo da Forlí), symptomatology occupies a space within and not above signs, or the *signum*. Galen is, for the likely purposes of directing his work according to the economy of his subject, silent on the relation of sign to signified, although the special use of it as nuanced from the Greek term may be implied with some difficulty in his discussion of complexiones and temperament. The reason as to why we would invite Galen into this discussion of Bains' promotion of external relations is due to the gestural move Galen seems to make in understanding signs as actually signs of relations themselves. It is this rudimentary merger of a study of signs and natural philosophy in Galen that is carried forward with more exacting precision in John Poinsot's insistence on not separating culture and nature since both are intricately woven courtesy of the relations of signs.

Bains ingeniously explores the exteriority of relations with keen comparative attention and a delicacy in composing the architecture of his argument. Resisting the strong magnetic pull of the eternally vacillating dispute between realism and idealism, a double individuation of the relation and the term positioned to explain it takes place. He patiently outlines the "back-story" of the unbridled "new image of thought" in the furrow between realism and idealism, navigating the difficult and "repugnant" terrain of interbeing, the unthinkable. With semiosis as the primary conduit, it is not enough to rely on model or picture-thinking to explain our relationship to and in the environment. Bains effectively wants to posit that the semiosphere has its origin in what Deleuze will call the virtual. The primacy Bains accords semiosis should not be regarded as a mere syncopation of Peircean themes, but as a radical reappraisal of semiotics that breaks the vicious circle of signs.

Fixed ideas, belonging to that class of metaphysics that renders relations subsidiary attributes, are but tokens employed in the non-fecund adventurism of idealism's claim over determining the meaning structures that constitutes existence and experience. At the other end, realism's attempt to marshal the objects of sense as the unobstructed material conduit to intelligibility also condemns relations to a slavish role. Both of these perspectives can only abut what is genuinely primary: the constitutive and antecedent framework of relations that underwrite all semiotic exchanges. What is at stake is the vascular intensity of relations that cannot be conveniently buried inside their terms without risking a bereft nominalism, thereby opening up the space of ontology to consider how inter-being is possible. Bains deftly organizes his study of an intense "logic of relations," so frequently referred and yet so commonly overlooked, which forms the keynote that may account for the actions of signs without appealing to ideality or reality working at cross-purposes.

In order to give proper credence to Bains' exploration, it is necessary to indulge a kind of suspense of semiotic prejudice. This means accepting for the sake of argument a univocity of being that is both the constitutive and expressive aspect of all beings. As well, the reader is asked to consider that relations are inherently primary instances in the domain of interaction for every being, and that these relations occupy a centrality of "betweenness" that suffices to explain that the "subject" is always an "interbeing" with its multiple threads of relations to many other like beings. The subject is not a mind-dependent or mind-independent wholeness, but rather is constructed by the web of relations it has with other subjects, environments, and objects. However, Bains is not advancing some anarchic or relativist viewpoint where beings in the world bob "meaninglessly" within a mere kludge or mosaic of disconnected and arbitrarily linked sign systems. Instead, the relations themselves provide for the mobility

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## Table of Contents

Signs Under Stress 1 - 3
By Kane X. Faucher

A POST-STRUCTURALIST HY[I]M[N] 3 - 4
By William Whitla

Natural Born Cyborgs 4 - 8
By Scott Pound

ANT Theory Today 9 - 11
By Kristina Marcellus

Loitering in Disneyland 12
By Judy Anderson and Jonathan Kahana

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of interaction at every level of the analysis of language. These relations and their interactive effect on meaning structures renders meaning not "meaningless" but rather voluminous in their multiplicity (thereby avoiding the dichotomous trap of siding with the One and the Many). What is novel in this study is not so much an innovative program, but rather the way the author weaves together the seemingly disparate programs of Deely and Deleuze (in collaboration with Guattari) in a way that brings the theme of relations themselves to clarity. The arrangement of elements such as a logic of sense, the *Umwelt*, autopoiesis, and the grievously overlooked account of Poinsot operate to ground an interconnected foundation from which semiosis may supplant the traditional way of thinking of semiotic relations. As well, where Deleuze and Guattari give scant clues as to what a logic of external relations would look like, Bains modestly attempts to further their thought by drawing certain conclusions by giving keen focus to what they mean by indirect discourse being the first determination of language.

For Deleuze and Guattari, language is not a code (the prevailing view of critical theory), nor can we define the domains of linguistics such as syntactics and semantics by excluding pragmatics. Most importantly, language and speech acts cannot be considered independently since this would be to dismiss the act of language (and acts are the inevitable result of relations) in search of some objective criteria by which to understand language. The subject, which is furnished by its perceptual apparatus, and is engaged in its bracketed worlds that in fact intercalate and interact, is never a given. The subject can only, as Deleuze and Guattari say, construct itself and enunciate the order-word so that all speech acts are indirect speech acts. For this to be viable in the ears of linguists, the story of semiotics needs to be rewritten without the prejudicial separation between what is studied and what is occurring since this artificially imports a division that is both too abstract and not abstract enough.

Bains leaves himself open to a few questions, but these questions are inherent to the subject itself and that perhaps not even this study has the capacity to fully resolve. What may be missing, but pardonable given the tight scope of this project, is a tarrying with the threshold event of ecstasis that girds the acts of autopoiesis to explain how the generation of signs as a product of external relations leads to thought standing outside itself without falling into mere objectivity. This ecstasis should not be read in a Heideggerean manner, but more on the order of Deleuze's univocity that raises the "clamour of being." One may wonder if it would be possible to "backtrack" the result of an external relation (the sign) to its first enunciation without imposing some kind of chicane historicity upon the event that would force autopoiesis out of its autonomous state. The codetermination of beings and their world occurs by way of a perpetual productive generation of its component parts, guaranteed by their relations; however, what could be inserted at this juncture would be a form of ecstasis nuanced by a Nietzschean perpetually generative form of poiesis that will resist falling back into mere constructivism that would over-privilege experience as the source of knowledge rather than the interaction of function and structure. The risk of constructivism looms much larger than a more easily dispelled charge of relativism in the works of Maturana and Varela — two thinkers Bains draws from in his excursus on autopoiesis. Arguably, the charge of constructivism in an autopoietic theory of relations could be considered a somewhat facile reading of autopoietic theory, but it is not entirely immune. Autopoiesis is an operationally closed system where all the components produced service the structure without releasing anything from its boundaries. So, for example, any external inputs to an autonomous system result in the maintenance and auto-generation of that system. There are no outputs, but rather reflexive networks of relations which is ideal for grounding a system of ecology reminiscent of viewing nature (for example) as a "web" of inter-linking parts that are co-sustainable by a series of perpetual tensions. The benefit of incorporating autopoiesis in a theory of external relations would be in the provision of semiosis as a kind of vitalist principle for the way language operates. As well, it assists in describing the functional circle of the *Umwelt* in demonstrating how the models of our meaning operate within bracketed environmental circumstances. In an appeal to sociocultural thought, overly semiotic systems are regarded as non-autonomous, and so autopoiesis rescues signs by insisting on the relations of signs in their use in actual communities. And so, the wellspring of semiosis could be further finessed by an appeal to ecstasis, and autopoiesis could further define how these components interact according to their tendencies to do so, i.e., by way of the *conatus* of relations. This *conatus* cannot be set aside in defining how these components are organized. Whether *conatus* operates at the heart of semiosis would require an extension of the study Bains has bequeathed to us.

We will not assert that Bains is complicit with the phenomenology of language despite his use of certain phenomenological terms. There is no rallying around the notion of intersubjectivity, and hence no disregard for the inherent social processes that generate the proliferation of signs and govern their usage in a case-by-case scenario that is always in development. Moreover, intersubjectivity is, in semiotic terms, far too reliant on mediation by signs rather than an investigation into the relations that are primary to any such mediation. Of course, the puritanical semiotician may offer their riposte that even these co-determining and socially-interactive systems are still just systems of signs, albeit rendered in more subtle and complex ways. However, such a view is wedded to the notion that all positions — be this self and other, thought and its outside — are merely existent in signs and as signs. So, even the autopoiesis theory would be considered subsumable as internal properties of sign systems. In a perceivable fidelity to social psychology, there are some tentative moments where Bains seems to almost believe in the tenet that humans are rational beings, but his position is closer to that of sociocultural theory insofar as this rationality is presupposed by an agency tied to a kind of inherited responsibility, thereby avoiding the criticism that psychological processes are left out in the cold. In sum, appealing to external relations circumvents the semiotic paranoia where fixed meanings succumb to miscommunication since a) Bains subscribes to Deleuze and Guattari's view that language is neither informational nor communicational, and, b) meaning is multiplicity rather than unity.

Bains' book urges us, in part, to discard "ratio" (specificially, the *ens rationis* and *ens reale*) in its traditional formulation, and instead consider a kind of "relatio essendi" which vouchsafes for the very possibility of all external relations as the truly determinative dimension of signs, as well as a "relatio cognoscendi" that would not attempt to hinder thought from considering that external relations are inherent to every act of thinking as well, not a primary reality-granting device. It should be noted that this introduction of "relatio essendi / cognoscendi" is not Bains' terminology, but rather where this study implicitly points. Just as Nietzsche expels the negative from ratio cognoscendi in the formation of a will to power that functions as the ratio essendi, the "transcendental" quality of semiosis is its own form of immanent relation that does not unduly privilege the structures of "rational thinking" in the understanding of relations. The tragic blind spot in much of the history of philosophy is the short shrift or outright dismissal of how external relations are possible – if not necessary to a robust and satisfactory ontology. The *relatio essendi* would, in this formulation, explain the necessary conditions of external relations as the essential regulatory "mechanism" or "diagrammatic," and the *relatio cognoscendi* would explain thought's relation to its outside. This "outside," as Bains clearly insists, is not the outside world per se, but the sort of thinking of the outside that does not depend on thought as such.

The new image of thought processes the *Umwelt* differently — resisting the regulative and externally-imposed method of selecting the salient information from the environment in our perceptual field. This breaks the "cognitive feedback system," the recursive process of for every object an idea, for every idea an object. By shifting semiosis to a position of (ontological) primacy, Bains succeeds in granting us a way of explaining even a-signifying structures without resorting to the 66 possible sign-relations that modern semiotics has inherited. It also navigates us away from the dispute between linguistic prototyping and the metasign.

We find in Bains' conclusions some possible directions for further exploration. One of the more compelling notions, following from his survey of *Umwelt* and autopoiesis would be the grounding of a cosmopolitical ecology. A well constructed ecology can avoid becoming an allopoietic means of rendering the environment's aesthetic-ethical domain subordinate to a utilitarian or derivative process of constructing single meaning that all functions are forced to rally around. An ecology derives from *oikos* or "house." One cannot forget the connection Derrida makes in "Différance" between the house, the crypt, the tomb, and the economy of death. Although we need not follow the line of death in this invocation of "oekology," we can preserve this connected notion of *nemein*, or "economy" — that which "manages." In the "semiosphere" that Bains articulates for us, language is living, a kind of organism that is subject to all the phases and requirements of physical organisms, including growth, development, interactivity, production, consumption, and death.
The economic, or managerial, aspect of a

"semiotic" economy need not result in a zero-sum game where equilibrium is established since this would presuppose (on a sign system and meaning register) that unity is achievable. Instead, it is the constant imbalances brought about by interactions that sustain both the continued ecology of beings-world-language as well as ensuring that these distinctions do not become mutually exclusive entities proper to study. Deleuze and Guattari state that language and speech acts cannot be divided given their interdependence on a pragmatic scale, and so forms the basis of an ecology. This ecology is essential to a science of signs since the linguistic and biological are intercalating and indistinct.

Perhaps a "science of signs" is, at bottom, merely a sign of a science; however, what we understand from any science is that its meanings are always multiple when it becomes a cultural property and becomes subject to singular "interested" readings. A "bad" ecology will still read the environment as an interconnected web of circles, chains, and co-dependent significations, but will direct the program to a kind of impossible ecotopia which smuggles the rational demand for harmony (humans and their environment, nature and its relationship to itself) through the back door. Such watered down Euclidean perfection would be the goal of a bad ecology of signs, securing itself as a new regime. Ecotopic visions generally rally around a stable set of icons that reterritorialize relations but that default to its environment-specific lexicon. In the end, a "bad" ecology, indexed on its goal for an ecotopia, does not escape the regime of signs, the endless chain of significations, or explain the rather funereal existence of significations that survive their denotables; it is, instead, a different order, a different regime. Conversely, a "good" ecology avoids the conflation between a "science of signs" and its inextricably bound up derivatives of becoming a cultural property (if a science of signs is not already primarily a culture property, devised in such a way as to appeal to the projected rigour and rules of scientificity). Such an ecology of signs will not get waylaid in "oversignifying" what enters into relation, but rather the relation itself is the scene of the sign, but this relation is never fixed in a single chain where sign x refers to y exclusively. Rather, the univocal aspect of this ecology is that there are external relations, and that these are never reducible to any program of circularity, a supreme signifier, or a means of verifying that the signified has some unquestioned "substance" that is revealed by its signifying relation. For the sign to be "embodied" in the signified is to announce the sign's end-point, exhausting its relationship potential only to be "resurrected" for the purpose of being embodied once more.

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# A POST-STRUCTURALIST HY(I)M(N)

By William Whitla

*as Sung By a Recent Graduate of Yale University*
*With a New Text of a Canonical Poem,*
*And Advice for an Ephebe*

## THE HYMN

Hark! the Harold Bloom-ers sing:
Deconstruction's on the wing
Peirce on earth, and Marx beguiled:
Barthes and readers reconciled.
"*Jouissance*" all ye theorists cry,
Take the *différance* from Frye:
"All the mythic plots are one"
—That's what intertext has done!

De Saussure was first our guide
To signify the signified;
Russian Formalists have come,
Offspring of Geneva's womb.
Schools of Frankfurt and of Prague
Instruct us in *La nouvelle vague*:
Late in time, the School of Yale
Disseminates itself to hell.

Derrida by all Ador(no)ed
Blasts the Everlasting Word:
Grammatology has come,
Dualisms are struck dumb.
Plato's metaphysic see
Banished to eternity;
Pleased as punch with Freud to dwell,
Lacan serves his Subjects well.

The Deconstructive angels sing,
Abrams shoots them on the wing,
But Marx does more than Milton can,
To justify Godzich, de Man:
Always and already margin:
Nothing is within the garden;
Through our *langage* we are sexed:
Nothing is outside the text.

## A NEW ROMANTIC TEXT

Tyger, Tyger, burning bright
In a deconstructive light;
What perverse post-structural eye
Dare frame thy intertextual lie?

Tyger, Tyger, my mistake,
I thought that you were William Blake—
Then with urge to mythify,
I heard that you were Northrop Frye;

Tyger, Tyger! What a wish—
Now I know. You're Stanley Fish!

## SAGE ADVICE FOR AN EPHEBE

All misreadings map with care
For semiotics show a flair,
Scorn the hermeneutic circle,
And leap the deep abysmic hurdle
Base and superstructure note,
Learn metonymies by rote;
But artifacts all self-consumed,
Leave to theorists better Bloomed.

Read your gynocritics through;
Narratology will do
To wile a diachronic hour
As Miller grinds our Hosts to flour.
Anxiety of influence
Is nothing more than common sense;
Desire in language is a lure—
But don't erase the *écriture*.

Supplement the privileged trace,
Look ideology in the face,
Put into question authors' aims
And flee all patriarchal claims;
Synchronism's here to stay
New Critics all have had their day.

If you've these labels in your power,
You'll get a job in ivied tower.

— June, 1988.

[With a nod of indebtedness to Eric Mascall's *Pi in the High* (London: Faith, 1959)]

# Natural Born Cyborgs

**Brian Rotman, *Becoming Beside Ourselves: The Alphabet, Ghosts and Distributed Human Being.* Durham: Duke University Press, 2008.**

By Scott Pound

Among cutting edge media theorists with fascinating resumes few compare with French intellectual and journalist Régis Debray who in the late sixties spent time as a Marxist revolutionary fighting alongside Che Guevera and later worked as an adviser to French President François Mitterand on Foreign Affairs, but Brian Rotman comes close. Mathematician, playwright, cultural theorist, Rotman holds a Ph.D. in combinatorial mathematics from the University of London, is the author of many plays for stage and radio, and since 1998 has been Professor in the Department of Comparative Studies at Ohio State University. Like N. Katherine Hayles, who parlayed scientific training into a prestigious career as a cultural and literary critic, Rotman applies extensive technical and scientific knowledge to problems in the humanities. His evident lack of guerrilla warfare experience notwithstanding, he is an unusually intrepid thinker and his latest book stirs with revolutionary import.

Rotman's abilities bring to mind other unclassifiable, ambidextrous thinkers like Donna Haraway, Bruno Latour, Isabelle Stengers, and Michel Serres whose work uses knowledge from the sciences and the humanities to probe new ontological and epistemological realities. After two decades spent teaching pure mathematics in the UK, Rotman went to the US on a series of humanities fellowships where his attention drifted from mathematics to semiotics.
The result was two remarkably focused and original books each examining an aspect of the mathematical uncanny from the point of view of a single signifier: *Signifying Nothing: The Semiotics of Zero*, which takes a Saussurean approach to the zero sign, and *Ad Infinitum...*

*The Ghost in Turing's Machine*, which adapts the semiotics of Charles Sanders Peirce to the concept of infinity. In *Becoming Beside Ourselves*, Rotman completes his trilogy with a study that focuses on yet another solitary signifier (an alphabetic character this time rather than a mathematical sign): 'I'.

Despite their very narrow focus, there is nothing reductive about these books. Quite the opposite. Like a pinhole camera that captures a startlingly vivid and wide image, Rotman's gaze takes in vast intellectual landscapes through a very narrow aperture. From the point of view of semiotics, the zero sign appears as "a major signifying event" both in the writing of numbers and in terms of parallel movements in other sign systems such as the development of vanishing point in representational art and the concept of imaginary money in economics. The ability to signify nothing opens up a new apparatus both conceptual and spatial for imagining and positioning absence and its effects. Hard to believe a single signifier — and of all signifiers the '0' sign — could change the world, but there you have it.

In his study of the infinity sign, Rotman uses semiotics to produce surprising results starting from a simple principle. The simple principle is that "counting is an activity involving signs"(6); the surprising result is the disclosure of a ghost in the workings of mathematics: a disembodied, transcendental agent that a system of abstract counting calls upon to count endlessly on our behalf any time the sign "..." or "∞" appears. The identification of a fantasy narrative involving a strange ghost working deep within the operations of math is rather spooky, but this ghost in the machine of mathematics is merely the pretext for searching out its doppelganger, the corporeal body that actually counts. Therein lies the possibility of a new understanding of counting and an occasion "to start rewriting the connections between God, Number, the body" (11). No more should we see mathematics as just a handmaiden to science; it also enfolds a robust corporeal existence. The fascinating prospect for Rotman is not to ratchet up the power of numbers to facilitate abstract operations, but rather to rehabilitate the body as the literal, material condition of all counting.

In *Becoming Beside Ourselves*, Rotman's claim is characteristically simple and far-reaching: "any act of self-enunciation is medium-specific," such that, "to utter 'I' and to write 'I', despite their everyday conflation within Western textual discourse, are radically different signifying acts" (xxxiii). The book as a whole shows how this basic distinction, and media-specific analysis generally, can produce a decisive transformation in our understanding of culture.

To utter 'I', of course, is to participate into an oral/aural economy where prosody (the volume, pitch, tone, pace, and rhythm of speech) infuses words with embodied meanings. Prosody is the presence and action of the body in communication, and although we are very practiced at overlooking it, this presence is extraordinarily meaningful and evocative. The embodied 'I' signifies within a material matrix of overwhelming complexity and nuance shot through with emotion, affect, ethos, and intonational force.

The genius (and, if you're a poet, the great liability) of the alphabet is its almost miraculous efficiency, or what amounts to the same thing, its indifference to prosody. In recording *what* the speaker says but not *how* it is said, the alphabet disengages communication from the body and streamlines all the rich and dynamic redundancy and prolixity of speech down to 26 letters and a handful of punctuation and diacritical marks. Disconnecting language from the body revolutionizes communication by rendering information and ideas portable. It also gives rise to a completely new cognitive apparatus. Ground zero for this new apparatus is the radically transformed status of the speaker in writing.

In speech, the speaker is a material, sensory presence within a social semiotic defined by heteroglossia. In writing, the speaker becomes disincarnate, silent, invisible — a cipher and a shifter. Corresponding to the new status of the 'I' in writing is a new type of agency: transcendent, abstract, totalizing, indexical, "an unembodied being outside the confines of time and space." The names we give to this agency — God, Mind, Infinity — form the metaphysical horizons of Western religious, philosophical, and mathematical thought. Each one of these ghosts, Rotman claims, is "a phenomenon inseparable from alphabetic writing" (7). God, therefore, is "a mediological achievement."

This style of thinking does not so much cut across disciplines as it does pull the rug out from under them. It's pioneers — Harold Innis, Marshall McLuhan, and Friedrich Kittler — don't have much truck with scholarship in the traditional sense, which is, after all, like God, a mediological achievement. Instead they posit a special kind of agency to media and technology. Far from being mere tools, writing, print, sound recording, cinema, radio, television, digital media, and now the internet condition our existence in profound ways.

The earliest advocates of the claim used historical method and lots of panache to build and support their arguments. Since then, evidence has emerged from scientific methods as well. "We now know," writes Marianne Wolf, "that groups of neurons create new connections and pathways among themselves every time we acquire a new skill.... Reading can be learned only because of the brain's plastic design, and when reading takes place, that individual brain is forever changed, both physiologically and intellectually" (2007: 5). The same holds true for all media.

In this way, media function like cognitive displacements/upgrades. The new mechanisms they supply for notating, inscribing, and capturing traces of the real change our minds in specific ways by sublimating gesture and speech and expanding the ways we are able to think. In the most general sense, Western sign systems — the alphabet and mathematical signs—give us the means to construct the world as an assemblage of static, abstract, totalizable concepts and systems. With this comes the ability to bracket our immanence and put our experience of the world under arrest so that we can study it. Concepts, things, ideas, logic, the academy, democracy — the great molarities of Western antiquity — are all consequences of the alphabet, just as capitalism, humanism, Protestantism, the individual, the nation state, colonialism, industrialism, parliamentary democracy, the Renaissance, the Enlightenment, the Scientific Revolution, and the novel are all consequences of the printing press. For two and half millennia, the alphabet has been the operating system of Western culture, and "for at least the last half millennium," Rotman points out, "the very concept of a person has adhered to that of a 'lettered self', an individual psyche inextricable from the apparatus of alphabetic writing describing, articulating, communicating, presenting, and framing it" (2).

But it is not until many hundreds of years after the great social and cultural revolutions of the literate era that we come to recognize their mediological profile. The ubiquity and dominance of writing and print render them environmental, masking their agency. A significant part of the writing/print era is therefore its legacy of media blindness. The one thing it failed to conceptualize was its own agency. "Media" doesn't enter the language as a word for communications technologies until 1923, and it is not until the age of radio that Milman Parry discovers the oral basis of the Homeric epics. Before the twentieth century the only stable method for media-specific analysis was the oft maligned and beleaguered practices of rhetoric and poetics.

Recently, media studies and science studies have taken on the important work of media- and technology-specific analysis to show how communication and scientific technologies condition knowledge and structure the methodologies informing academic disciplines. For example, N. Katherine Hayles (2004: 67) uses media specific analysis to see into the epistemological unconscious of literary criticism: "Lulled into somnolence by five hundred years of print, literary studies have been slow to wake up to the importance of media-specific analysis. Literary criticism and theory are shot through with unrecognized assumptions specific to print. Only now, as the new medium of electronic textuality vibrantly asserts its presence, are these assumptions clearly coming into view." Bruno Latour uses media and technology specific analysis as an occasion to audit normative methods of knowledge creation in the sciences. Mark Hansen critiques literary theory from much the same point of view.

As unacknowledged legislators of knowledge (because they structure cognition, epistemology, and method) and experience (because they "structure our lifeworlds" (Hansen 2000: 4) and generate new forms of embodiment), media and technology come to represent, in a way that language did for poststructuralism, "the totality of our problematic horizon" (Derrida's phrase). By universalizing textuality as a supermedium though, poststructuralism elides the specific material agencies of technology and media. By substituting an analysis of mediality for textuality, media studies offers a corrective, prompting a revealing shift in focus and methodology: from textuality to mediality/materiality, from discourse to experience, from interpretation to media specific analysis.

The theoretical retrofits and retooled methodologies required to take account of media and technology are significant — significant enough to destabilize disciplines. As Hansen points out, "the displacement of language as a universal medium and the correlated recourse to experience confronts the contemporary poststructurally smart cultural critic with what amounts to a significant theoretical quandary" (2000: 1). Literary studies and cultural studies must

now confront the idea that their signature methods of close reading and critique might not get to the bottom of culture. Semiotics is likewise forced to reckon with the fact that the materialities of communication condition signification and problematize the sign as a structure of understanding.

Rotman's contribution to this strain of thinking is to combine the grand narrative of media studies with a vivid and precise analytic. His book is notable both for its colossal scope and its very particular emphasis on the status of the speaker in language. The big picture is loaded with portent: If, as Friedrich Kittler says, media determine our situation, and if the two and a half millennia era of alphabetic graphism is drawing to a close, what kind of virtuality and embodiment will correspond to networked media and in what ways will (is) this apparatus restructur(ing) our experience of the world? The vector he provides for tracking and understanding the implications — the diverse instantiations of the 'I' across media — dramatizes the stakes of media technologies for human subjects throughout history.

The big picture and the focus on the speaker in language are tightly linked. "A succession of media — speech, alphabetic writing, digital writing — transform their environments through a wave of virtuality specific to them," Rotman explains (7). "In the first, virtuality is located in the symbolic function per se, inherent in a speaker's capacity to refer to non-existent and disembodied agencies; in the second, virtuality is located in writing's ability to signify across space and time in the absence of a real or embodied speaker; the third, still breaking, wave is manifest in the contemporary phenomenon of virtualizing X, where X ranges over the characteristic abstractions and processes of the alphabetic, pre-digital age. Associated with each of these virtual waves is a ghost effect" (7-8). The ghost effect of the spoken 'I' is the belief in a spirit; for the alphabetic 'I' it is the transcendental agencies known as God, Mind, and Infinity; the ghost effect corresponding to the networked 'I' has yet to appear, but the networked 'I' itself is coming into view. It is "*immersive* and *gesturo-haptic*," experiencing itself through touch and vision; it is "*porous*," flowing over its boundaries and being traversed in turn by other networked 'I's; it is "*plural* and *distributed*," constituted by many heterogeneous actions and perceptions at once, governed by parallel protocols rather than linear sequences of input.

Rotman is especially taken with the virtuality associated with the alphabet — what he sometimes refers to as the "metaphysics of the alphabet": its capacity as a medium, already mentioned, to "perform a reflexive, self-citational move ... and thereby give rise, under appropriate conditions, to a disembodied, supernatural agency" (14). But the alphabet's ability to enable a powerful metaphysics populated by great disembodied agencies like God, Mind, and Infinity is contingent on its ability to eliminate the body, and thereby prosody, from the communicational matrix. The alphabet's elimination of prosody is easy to overlook and not many scholars outside the fields of sociolinguistics, discourse analysis, and ethnopoetics have bothered to think about it, but for Rotman it is of momentous importance. Indeed, he says, "It would be difficult to exaggerate the consequences of prosody's omission for the development of western literacy" (26).

Why is the omission of prosody so crucial? It is both the condition of possibility of fully abstract, virtual systems in which signs are able to index the entirety of verbal communication (i.e., all meaningful speech sounds have a corresponding representation in letters) and an enormous cultural reduction. From the point of view of neuroscience, the ability to notate speech sounds in a small number of signs is a cognitive breakthrough, a form of shorthand with enormous payoff in terms of cognitive efficiency. But the incredible efficiency of the alphabet is also a measure of how much information it omits. Speech is a "data flow" of such overwhelming complexity that speech recognition technology has been hailed as the holy grail of computing. As Mladen Dolar writes, "words fail us when we are faced with the infinite shades of the voice, which infinitely exceed meaning" (2006: 13). Reading is such an engrossing enterprise because there is so much for the reader to do, so much information that the reader's imagination must provide. As Rotman puts it, "The history of reading is the history of redressing what writing fails to represent" (27).

That the meaning letters cannot formulate is physically constituted by the body makes it more, not less, important.

> What writing omits from speech is the body: the feelings, moods, emotions, attitudes, intuitions, embodied demands, declarations, expressions, and desires located in the voice, rather than consciously formulated (writable) thought. What it omits is the entire field of affect conveyed and induced by human vocality, through the voice's impulsions inflections, and rhythms, its aural texture and emotional dynamics. A vocal field bordered on one side by song and on the other by the non-speech of sighs, moans, cries, grunts, screams, laughs, and so on, all that, in Roland Barthes' phrase, surrounds 'language lined with flesh' (27).

Writing effects a split between body and mind, intonation and abstract thought, sound and meaning, setting up its own neurological apparatus to handle purely cognitive tasks. "Neurologically, the requirements of literacy create in the brain what we might call a 'literacy module', a neural complex within the neocortex dedicated to writing and reading purely textual entities, ... words decoupled from the moods, feelings, desires, and regulatory activity routinely evinced (and induced) by spoken utterance" (30-1). The resultant hierarchy — thought over feeling, cognition over affect, mind over body — define the literate episteme and the scholarly and scientific methods that emerge from it.

Now new media furnish an apparatus in which the body's expressivity is captured and reconstituted. Here the prosody that the alphabet forsakes returns. This is not in itself a new idea — first generation media theory observes a renaissance in orality as a consequence of new media generally — but Rotman develops it in a new and original way by noticing that it is not just the prosody of speech that returns with new media but also the gesturo-haptic poetics of the hands, head, face, and voice.

Gesture is an aspect of the body's expressivity that we know even less about than speech but which infuses bodies and moving images with enormous significance. Unlike the alphabet, which segments the continuous stream of speech sounds into discrete quanta of sound (phonemes) and notates them using letters, new media don't need to detour through symbols. They capture "the entire communicational, instrumental, and affective traffic of the mobile body" and render it reproducible at high resolution (4). When new media *capture* gestures in the manner of their occurrence rather than simply *notate* them via symbols a cultural threshold is crossed. In two conceptual jumps Rotman imagines a culture that leapfrogs symbolization all together.

> First jump, beyond the written mark: why interpret 'writing' as notation, as the projection of body activity (here, speech) onto a pre-set list of inscribed marks and a syntax? Why not an a-symbolic mediation — a direct sampling or capture rather than a coded representation? Second jump, beyond the oral-vocal apparatus: why the restrictions of the movements of the organs of speech, to the physiology and neurology of breathing and its articulation into consonants and vowels? Why not the movements of any and all of the body's organs and parts, oral, aural, or otherwise, traditionally signifying and a-signifying alike (41).

Whereas alphabetic characters notate and store speech sounds, motion capture stores and reproduces kinesis. The question arises: "Could motion capture be about to induce a transformation as radical and far reaching for the body's gestural activities, for its skin and organs of grasping and reaching, as writing accomplished for the organs of speech?" (47) It's difficult to say. The success of the alphabet was a function of its extreme reductiveness — its ability to distill the manifold facts of speech into a system that a child could learn and use. For motion capture to have the kind of impact that writing did the resultant interface would have to be something both children and adults could use for a broad range of purposes: creative, administrative, juridical, pedagogical. Especially pedagogical. The epic apparatus of orality and the academic apparatus of literacy purposed speech and writing with an educational mission that was crucial to maintaining their status as cultural gateways. Orality and literacy were monopolies. Will motion capture be a monopoly?

That's an interface question. In a notation system, the code that makes the object and the code that displays it are one and the same, whereas in digital technologies the two codes are different. To learn to read is to know how to write, but viewing a website doesn't make you a web designer. Will the motion capture interface have the requisite degree of ubiquity and simplicity? Will there ever be just one? How long will it continue to be screen-based? Perhaps there is another template for understanding how the medium will integrate itself into human affairs that has yet to announce itself. Whatever the case, a motion capture interface that was ubiquitous and simple would bring creative, expressive, and playful movement into the practices of teaching, learning, administration, and

communication generally. People would dance at department meetings, and children would teach adults how to communicate better.

Still, the prospect of leapfrogging symbolization all together is a little dizzying, perhaps even a little absurd (or is that just the alphabet talking?). What would it mean to by-pass the cultural bottlenecks of writing and speech and embrace a corporeal axiomatic in which the body formed a complete cultural canvas? It's difficult to imagine. But then comes the realization that, in some ways, we've already started to make the transition. The genius of Charlie Chaplin is an early and very persuasive example. Even written language assumes adaptive functions (emoticons, new punctuations marks) that attempt to index the body.

One thing that does lag behind though is our understanding of the new apparatus and our ability to study it. As Hayles points out, many of the methods we use to understand what is happening in networked environments unwittingly project the old literate hierarchy onto new forms of communication. Writing's long cultural dominion over gesture and speech means that we have organized all our knowledge around words and symbols and the orders of discourse, representation, and science constituted by them. The principle methods of humanities scholarship — semiotics, hermeneutics, close reading, and critique — are methods for reading culture qua symbol, culture minus embodiment. What methods will we use to read culture in its material form, as embodiment? Is *reading* even the right word?

In working his way through his topic, Rotman hews to semiotics even as he demonstrates its limitations. Semiotics seems to have been the intellectual enticement that brought Rotman from the UK to the US, and from mathematics to the humanities. As a semiotician, he burned through Saussure very quickly before moving on to Peirce. *Becoming Beside Ourselves* pushes semiotics to the limit and dramatizes a significant methodological conundrum. Can the rubric of signs formulate embodied meanings? While some gestures (ASL signs for instance) index words and function like conventional signs, many other function as emblems that are not translatable into words, but which still convey meaning. "Evidently, emblem gestures *say* nothing.... In fact they function at their most characteristic when differentiated and opposed to speech. Unlike words... emblem gestures signify ... by virtue of their *occurrence as events*" (19).

In order to go beyond words to a consideration of gestures, Rotman makes an important, though undisclosed, methodological move that takes us from a semiotics of monadic, arbitrary signs (Saussure's semiology) to a more supple analytic that recognizes more than one order of signs (Peircean semiotics). Unlike Saussure, who built his linguistics around the notion of arbitrary signs that signify solely on the basis of convention, Peirce recognized the validity of signs that signify based on similarity (icons or emblems) and signs that signify on the basis of contiguity (indices). Gestures are emblems that signify on the basis of similarity. Their meaning is inseparable from their being. They mean what they do.

Peirce certainly helps things along, but ultimately semiotics fails as a method for studying gesture. "Gesture is outside the domain of the sign insofar as signs are coded and call for a hermeneutics, an interpretive apparatus separable from, and in place prior to, the act of signification. Rather, the mode of action of gesture is enactive, exterior to anything prior to its own performance: it works through bodily executed events, creating meaning and mathematical significance 'before one knows it'" (36).

Rotman's interest in the pre-semiotic, corporeal dimension of technology therefore functions implicitly as both an extension and a critique of semiotics. Without stopping to ponder the matter, Rotman delivers us to a methodological roadblock. By tracking the legacy of alphabeticism from the dual point of view of what it enables (the powerful virtualities and abstractions that populate the metaphysical worldview) and what it disables (the prosody of speaking, gesturing bodies) Rotman extends the question of meaning and significance far beyond the parameters of the sign into the uncharted wilds of a-signifying emblem gestures. Media-specific analysis will need methodological development in order to formulate extra-semiotic aspects of embodiment for as the focus of humanities research migrates from signifying economies to the material economies of media and technology, significant methodological challenges emerge.

In the end, the stakes are much higher than mere method, and Rotman charges forward to the implications:

> To speak of the end of the alphabet is to suggest the possibility of a shift in Western deism, a reconfiguration of God and the God-effect as momentous as the alphabet's inauguration of that Being. If this is so, then the stakes for an end of the alphabet would be high indeed, and, to return to Leroi-Gourhan's fantasy of post-alphabeticism we started from, we have to wonder if such a thing is feasible; in an end to alphabetic writing or, less totally, a shrinkage in its universality, importance, controlling functionality, and hegemonic status, is thinkable from within that very writing here in the West? (54)

Other, more modest, questions emerge as well. If alphabetic literacy institutes what Rotman calls a "lettered self," what kind of being and identity will correspond to the digital era of networked, mobile communications? Several aspects of the new media apparatus suggest themselves as models: its language (computer code and markup languages), its products and effects (intermediality, virtual reality), its structure and architecture (the internet), its ethos (collaboration and play), and so on, but Rotman chooses as his model the engine that powers everything: the processor, specifically the recent breakthrough of parallel processing.

Until recently, personal computing has been based on machines with single processors the speed of which would double every two years according to Moore's law. Now PC makers have switched to "duo-core" parallel processors, less powerful but faster set-ups that break tasks down into pieces and compute the parts simultaneously. Rotman generalizes the serial/parallel duo as paradigmatic for the transition from the lettered self to the networked 'I'. "Parallelism foregrounds co-presence, simultaneity, and co-occurrence and is exemplified in collaborating, displaying, and networking, while serialism foregrounds linear order and sequence and occurs in counting, listing, lining up, and telling" (83).

The lettered self and its protocols are naturalized to such a degree that we forget how foreign it is for our brains to read. "We were never born to read," Marianne Wolf writes. "Human beings invented writing only a few thousand years ago. And with this invention, we rearranged the very organization of our brain, which in turn expanded the ways we were able to think, which altered the intellectual evolution of the species" (2007: 3). It is a quirk of human history that to advance as a species we had to invent a form of serial processing (writing) that greatly undersells the parallel processing abilities of the brain.

If the human brain is built for parallel processing and now computers are too, the resulting compatibility could be momentous. "This porting of parallelism into thought and selfhood encounters a parallelism already present, long before any engagement with machine computation, consisting of many layers of simultaneous activity of the body from the cellular level to the organization of the central nervous system. A parallelist psyche, then, will be as much an intensification of these existing parallelisms as it is a computational planting into a self that knows nothing of such things" (92). In a rather witty synthesis, Rotman's model of the technoid subject invokes the latest developments in computing *and* the age-old functionality of the brain's organic structure. We are "natural born cyborgs," he reminds us, an amalgam of biology, culture, and technology. What we understand as mind, meaning, consciousness, culture, subjectivity and so on is put into form not only by language and the orders of discourse and representation that attach to it, but also by physiology and technology.

It seems unlikely that humans will forsake the alphabet any time soon. Eventually the keyboard will be trumped by voice recognition as an input device, but even then computers will still store and present text alongside images and sounds. Besides, notation isn't inferior to capture in every way. You can't really skim a sound file, for example. The story of a post-alphabetic future is really the story of what is happening now, the formation of a new cultural apparatus in which the alphabet is just one aspect, and not the most important one, within a new media ecology. But the revolutionary profile of new media should not overshadow their status as sites for convergence either. At least as exciting as the ability of networked environments to emancipate the lettered self from the reductive, disembodied, 'low res' matrix of print literacy is the opportunity to marry systems of abstract notation and the cognitive efficiencies they achieve to the creative thinking we perform with our bodies.

Rotman's use of parallel processing as a heuristic for understanding the agency of new "computational affordances" and the effects they have on subjectivity and culture is very valuable. It aptly formulates and gives a material basis for the ability of individuals to create and distribute multiple forms of agency, intelligence, and presence and to participate in networks of collective cognition. It performs significant theoretical work too, implicitly disabling the humanist, literate fiction of an internal self and an external other.

The serial protocols of literacy aren't the only things disabled by new media. The ability to produce, combine, and manipulate digital images also discombobulates

Renaissance perspectivalism and with it the humanist construction of a singular, situated point of view. "Now such objects [multi-image assemblages], *imaged images*, have become a default contemporary visual paradigm which, by presenting many images simultaneously within a single optical act, calls for a visual self engaged in a mode of parallel rather than serial seeing. The result is a form of visual polyphony with sampled images as voices..." (98). In networked environments de-framed and mobile images and identities interanimate with heterogeneous actions and perceptions in an expanded field predicated on the simultaneities of parallel processing.

Depending on your point of view, the implications of Rotman's study are either repulsive or intoxicating. For me, it's the latter. Motion capture technology combined with a user-friendly and simple interface will revolutionize education, making it possible to see the average child's need and gift for movement as a vital part of a creative learning apparatus. Achievements of this kind so far have been astounding. For example, the composer, inventor, and educator Tod Machover of MIT has invented new musical instruments that capture and translate the untrained motions of their users into musical sounds, which can then be transcribed into musical notation and played by professional musicians. Another of his projects is a computer interface called Hyperscore that teaches children and adults with no musical training how to compose music by simply drawing lines on a screen. In both cases, motion capture technologies harness the gesturo-haptic poetics of the moving body and link it to an existing notation interface. What will they think of next? And will it be the university of the corporation that takes the lead?

It might be a race because commercial applications of new technologies will also have a large impact. The Nintendo Wii uses motion capture sensors to animate game functions that bring the whole body into play. As the number of sensors multiplies they will come to be housed in a suit. Educational apps and interfaces will, one hopes, follow. The boundary between education and entertainment will continue to blur, and the answer to the all-important question *Will children be able to use it*? will be obvious. Children will not only be able to use it, they will be the vanguard users. In place of an educational apparatus that hazes children with the violence of literacy, we might, if we're lucky, end up with an apparatus that channels and legitimizes the creative genius of embodiment and combines capture with notation in a way that changes our understanding of learning and intelligence. One thing seems certain: the ability to more fully activate the expressive and communicational potential of bodies will greatly alter human culture. In Rotman's view, the result would be nothing less than "an alteration in the conditions of possibility of being human" (49).

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# ANT Theory Today

By Kristina Marcellus

One of the most important points on which any book must be evaluated is the degree of success the author achieves in the goal(s) s/he sets out at its beginning. In the case of Bruno Latour's *Reassembling the Social* (2005; hereafter RTS), the aim is to provide a systematic introduction to actor-network theory (ANT) as an alternative to the hegemonic approach generally taken in sociology — that is, beginning with the position that 'the social' is the motive and explanatory force behind occurrences, relationships, and interactions in the world or that it is "a thing among other things, like a black sheep among other white sheep." (Latour 2005:5) ANT might be understood as 'politely antagonistic' to this approach, beginning as it does without any assumptions about what might be included in the social, taking the position instead that 'the social' is a product of the interactions of all kinds of actants, which form chains of associations, which then produce effects in the world. Rather than presuming that humans (and only humans) interact with one another to reproduce social relations that pre-exist the individuals involved in any particular interaction, ANT maintains that any social interaction is constituted anew with each individual encounter — change any one participant in a situation or network and that situation/network is completely different. Above all, "this is not a coffee table book" but is rather "directed at practitioners as a how-to book, helping them to find their bearings *once* they are bogged down in the territory." (Latour 2005: 17)

As is typical of Latour's writing, much attention is paid to the definition of terms to be used throughout the book. This can also be the source of some confusion as it becomes possible for readers to get bogged down in new meanings for familiar terms like 'actor' and 'network', or to get tripped up by this combined with the philosophical shift in starting points advocated by ANT. In addition to key terms like 'actant' and 'network', Latour explains the difference between the two approaches to sociology he contrasts throughout the remainder of the book: the sociology of the social, which understands 'the social' to (pre-) exist independently of individual human actors, and the sociology of associations (or the sociology of translation in some earlier articulations of ANT — see Law 1992, 1999a), which approaches 'the social' as something created by the interactions of actants of all kinds, not just humans.

This is not Latour's first attempt to be the clarifying voice in ANT literature: he published similar, although somewhat more abbreviated, contributions in *Soziale Welt* (1996a) and in *Actor-Network Theory and After* (Latour 1999b). Those who have been following ANT writing may be frustrated by RTS (as they may well have been by, for example, *Pandora's Hope* {1999a}) because Latour's position on ANT has not remained consistent throughout his work.[1] Everyone is entitled to refine his/her position over time or to change his/her position altogether, but Latour's efforts to be the authoritative voice of ANT — to the point in RTS of providing a guide to identifying ANT work (10-11) — works against the success and proliferation of ANT as a useful approach in contemporary sociological research because it denies the usefulness of other interpretations of ANT that might not fall in line with Latour's latest articulation of it. Latour's effort to be the primary spokesman for ANT may, in fact, discourage new work — perhaps outside of science and technology studies (STS) — from openly identifying with the perspective if only to avoid the confusion that continues to surround ANT as a legitimate approach to social scientific inquiry.

## Three Phases of Actor-Network Theory

Perhaps, though, this confusion is necessary; Latour's work, however fuzzy, might provide the raw materials that others have used and applied in a less wholesale and more specific way. Works such as Law's (1999a, 1999b, 1992), Akrich's (1992), and Callon's (1986a, 1986b) have certainly been identified as ANT but in a much more accessible and less programmatic way. Yet it has been these works, among others, that

have created some of the confusion about ANT — and recent interest in it - which may in turn have led Latour to write RTS to help to clear up some of this confusion. It seems as though ANT has been through at least three phases: its inception in science and technology studies based in Paris in the mid-1980s (Latour claims that it "started in earnest" with only three documents: Latour 1988; Callon 1986a; Law 1986 — see Latour 2005: 10); mid- to late 1990s concern that it had died; and most recently (perhaps as a result of Law and Hassard {1999}), a renewed interest surrounding and epitomized by the publication of RTS.[2] These last two are of the most interest here.

*Actor-Network Theory and After* (Law and Hassard 1999) was published as what seems like a sort of 'taking-stock' exercise to determine the state of ANT in the late 1990s. One of the contributions, by Law (1999b), suggested that ANT may have succumbed to its own principles and was thus no longer what it had been at its inception. If this is true, it may also help to explain some of the confusion and frustration that surrounds what ANT actually *is*, how it might be deployed, and how it is situated within the larger scholarly context of contemporary sociological thought. In other words, it may well be the case that the pace of change in interpretations and deployments of ANT has reached such a rate that it is nearly unrecognizable to those who participated in its initial articulation in the mid-1980s in France (see Latour 1999b; 2005) while this original version is similarly unfamiliar to those who attempt to work with it (or some of its principles) at the present time.

The name 'actor-network theory' itself has been the source of some of the difficulties in comprehending what it is about. Latour's article in *Actor Network Theory and After* (Latour 1999b) details problems and issues with each of the terms involved (including the hyphen). Law (1999b), in the same volume, also dwells on the name as a source of misunderstanding. The term 'actor-network' itself is identified as a problem, particularly as the theory became distanced from its origins: "Easy use of the term 'actor-network' has tended to defuse the power and tension originally and oxymoronically built into the expression. And the further abbreviation, ANT, removes this productive non-coherence even further from view." (Law 1999b: 8) With this shift, the actor-network perspective seems to have lost its capacity to apprehend complexity, to think in a non-strategically ordered way, which Law (ibid.) argues is a product of the process of labelling.

Law (1999b) suggests that actor-network theory has become diasporic, that it has spread, mutated and/or been translated into something new, that is, it has converted itself (or been converted) into a range of practices that have also absorbed and reflected other points of origin that fall outside of the origins of actor-network theory in studies of science and technology (10). In another article, Law (1999a) suggests that actor-network theory no longer exists. This would seem much more of a eulogy were it not for the subtext running throughout Law's writing on the subject; he implies that the perspective has succumbed to its own principles, that is, it has been translated by other entities for their own goals. Resistance to this process has, as with all translation efforts in actor-network building, been present but ineffectual. More significantly, Law seems to be indicating that this should not be seen as the failure or demise of actor-network theory: "Only dead theories and dead practices celebrate their self-identity. Only dead theories and dead practices hang on to their names, insist upon their perfect reproduction. Only dead theories and dead practices seek to reflect, in every detail, the practices which came before." (Law 1999b: 10) The irony of the fact that this appears in the introduction to a collection entitled *Actor Network Theory and After* should not be overlooked. Nonetheless, Law (1999a) has also written that there remain possibilities for the actor-network theory approach, particularly if one recognises the difficulty in defining what exactly the approach *is* and how one might go about *doing it*:

> I think we might imagine that, like its object of study, ANT *cannot* be told, cannot be told as a single narrative. As an overall story about the growth of a centred network with its successes and reverses. And instead imagine that it can only — and best — be represented as a set of little stories, stories that are held together (if they are) by ambivalences and oscillations. In which case, as representatives, we might then embrace an *art of describing*, an art of describing the patterns and textures that form intellectual patchwork. (8)

Perhaps, then, it is this direction that must be taken by those who would use actor-network theory. Those who have been doing so have already acknowledged that it is not the same as it was when it began. For those who would try to make use of it in contemporary work, it may be that the actor-network theoretical approach has been there all along, implicit in the ways in which work is done.

I am inclined to agree with Law that actor-network theory is not what it was in the mid-1980s or even in the late 1990s. This may be a direct result of having unsuccessfully resisted enrolment and translation by different variants and other forms of analysis. It also seems that his outlook in 1999 on the state of ANT demonstrates an appreciation for the work that has been inspired by ANT principles even if these principles are not adhered to slavishly. Perhaps the most significant way in which ANT principles might be seen in contemporary social scientific work is in the inclusion of (technological) non-humans in considerations of interaction and sociality. Theories of the network society (Castells 1996, 2001; Urry 2000) explicitly indicate that all kinds of other-than-human entities contribute to social life in the twenty-first century. Urry (2000) goes so far as to point out that "[p]eople possess few powers which are uniquely human, while most can only be realised because of their connections with these inhuman components." (14-15) Societies, according to Urry, "are necessarily hybrids." (15)

Although it is perhaps true that many of the intricacies of ANT have disappeared or have diffused, the treatment of non-humans as contributing participants to social life remains. ANT's assertion that any state of affairs might have been otherwise is also present in contemporary social theory dealing with complexity, for example. All kinds of intangible nonhumans — like skills sets or competences — need to be included in the composition of the network rather than conceived of as an effect or outcome of the network since a network that demands a certain set of skills for its effective functioning is not the same network if these skills sets are not present.

## Challenges

There is something about RTS that seems to be attempting to breathe life into a dead version of this still viable approach to social scientific research and theory; Latour's grip on past incarnations of ANT is a bit too tight for his reader to be convinced that ANT is alive and well, thank you very much, and thriving in ways that have escaped Latour's vision. There are a few reasons why this seems to be the case. To the extent that Latour's aim is to provide newcomers to his version of the ANT perspective with a comprehensive introduction, RTS is for the most part successful, but with a few exceptions or caveats. Latour begins his explanation of ANT with all the authority of a founding figure. He has not, however, been ANT's clearest proponent. In this, as in others of Latour's works (e.g. 1999a, 1993), the writing itself is less than straightforward, and this seem to happen not as an effect of the density of the material (although challenging, that is straightforward enough), but because tricks of language, turns of phrase, and use of metaphors and examples muddy up the waters of Latour's explanations. For non-European readers especially, this effect might be, in part, the result of Latour's use of examples that are more familiar and clear to European readers. Perhaps the best example of this lack of clarity comes early in the book where Latour suggests that those readers who are new to ANT should consider reading first the 'Interlude' found between the two parts of the book (2005: 141-156). Although I was not a newcomer to ANT by the time I picked up RTS, I did as Latour suggested and was struck by the impression that the dialogue comprising the Interlude, while meant to demonstrate the confusion between sociologists of the social and sociologists of association, would probably do more to turn curious readers *away* from the rest of the book and possibly from ANT. Those readers who are also students - and so might identify with the confusion and eventual surrender of the student participant in the Interlude's dialogue — could find this introduction to ANT especially off-putting or discouraging. Although much social theory requires a careful, patient, and thoughtful reader to be best engaged with, RTS — again like much of the work Latour has done on ANT — seems unnecessarily complicated in its presentation in contrast to other work that calls upon ANT for some theoretical or methodological inspiration, such as Akrich's (1992) study of technology transfer and adoption, or even Latour's own (1996b) investigation of the Aramis rapid transit system in France. Both of these examples demonstrate clearly the potential of ANT for explaining the many kinds of actants (e.g. government departments, steel rails, power grids, passengers, urban planning) involved in the adoption or diffusion of a technology.

Another issue with Latour's latest contribution to ANT literature is related to the concern about accessibility. Latour writes in the introduction that the book is "directed at practitioners as a how-to book, helping

them to find their bearings *once* they are bogged down in the territory" of social inquiry (17). As an introductory text, RTS certainly situates itself well in the larger milieu of (European) sociological work but not within the science and technology studies tradition in which it originally developed, is presently identified with, and beyond which ANT has not been applied in many cases. But, as an introductory text, the level of sophistication a reader is assumed to have with respect to his/her understanding in social theory is perhaps beyond what an introductory-level reader might possess. In short, the beginner ANT reader is, in this case, assumed to be well versed in social theory before coming to ANT.

Latour's reader would also benefit from being well read in the French intellectual tradition. A major part of Latour's early argument (and most ANT arguments more generally) rests on the point that any current state of affairs — including the direction of social theory — might have been different. To this end, Latour points out that had sociology been more based on Gabriel Tarde's work than on Durkheim's, ANT may have been closer to the norm of modern day social theory than it has been.[3] This may very well be true, but if the reader of RTS reads only in English, it is nearly impossible to chase down those of Tarde's works on which Latour bases this argument as these have not been translated from the French. This is true not just of Tarde, but of some others of Latour's references as well, and has the effect of making Latour's approach to ANT even less accessible to an English-speaking audience.

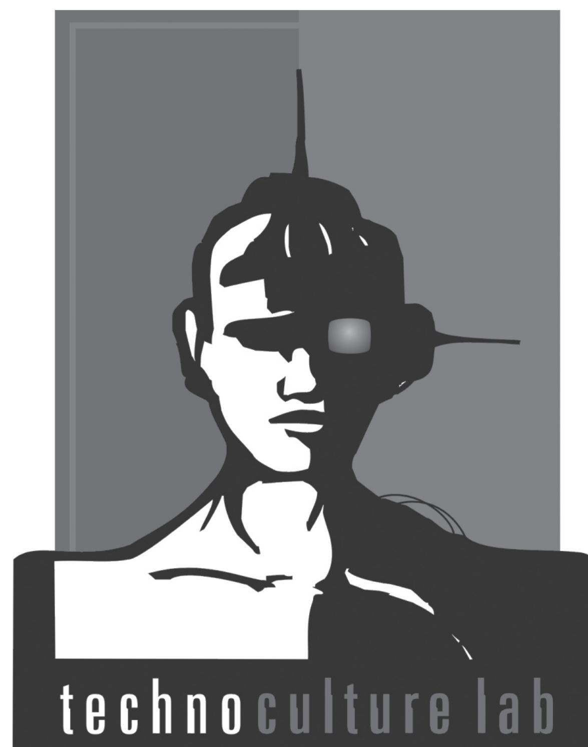
## Strengths and Conclusions

Because it considers forces like 'power' as effects of network formation and the requisite chains of human and non-human actants, many mainstream sociologists have criticized ANT for its failure to account for the effects of what many consider key factors in the creation of social relationships. It is in addressing these criticisms directly that RTS may be the most useful, I think, because it provides a careful explanation of the kinds of activities demanded by the deployment of ANT, which also explain Latour's view of how ANT works. In, for example, the case of charges of failure to adequately address power and power relationships, Latour's position is that because ANT does not presuppose the kinds of actants involved in a network, their characteristics or relationships with one another, it cannot assume that one actant is more powerful than another. In fact, two central features of the ANT point of view explicitly address this topic: first, ANT generally maintains that individual actants, regardless of who or what they are, are not powerful at all; it is chains of associations formed by different kinds of humans and non-human actants that result in different kinds of strength or power (to enrol other actants, for example, or to accomplish some activity in the world). The second feature of ANT that points to the idea of power as a network effect is actually a key philosophical starting point for ANT, and is tightly intertwined with the first point. It is also the point on which many 'traditional' or 'mainstream' sociologists reject ANT because it seems counter-intuitive (and counter-productive for a discipline based on some broad idea of 'society') — this point is that 'the social' is a product of the relationships between actants in a network rather than something that exists outside of these actants and shapes how they interact.

Throughout the book, Latour attempts to flip criticism directed at ANT back on the perspectives of those who provide the criticisms. The issue of power, for example, is answered by Latour in the form of a counter-criticism. According to him, sociologists of the social are guilty of failing to address power and inequality in an adequate way and not ANT because at least ANT works to demonstrate how power is created, whereas sociologists of the social use power to explain inequality rather than those explaining power and how it is created (Latour 2005:85). I suspect that this is at least in part due to Latour's failure to distinguish between STS and social theory more broadly as alternative positions to ANT as this argument seems more appropriate in the case of the former than in the latter.

In spite of these issues, RTS forms a worthwhile contribution to contemporary social theory, especially for those who are interested in new ways of conceiving of society and the social, perhaps especially in light of ANT's inclusion of non-humans as actants capable of action in the social world. The 'sociography' advocated by Akrich (1992) — a description of all links that make up a thing including the various combinations of human and non-human relationships (205) — is one way in which ANT as an analytical tool might continue to be influential into the next phase of social thought. The central point of Akrich's important article, that "technical objects participate in building heterogeneous networks that bring together actants of all types and sizes, whether human or non-human," (206) has clear resonance in more recent approaches to sociological inquiry that call for a re-examination of its object of study, such as Urry (2000).

It is this sort of vision of the ways in which sociality operates in contemporary life that can potentially help to understand the increasingly close connections being made between all kinds of actants, including and perhaps especially human-communication device hybrids (see, for example, Rheingold 2002). Mobilities of various kinds, including considerations of time and space, also build on this idea of the interaction of human and non-human actants (e.g. Thrift 2005; Urry 2007). In part, ANT continues to remain viable as a tool of sociological analysis because of the interest in whom or what is included in contemporary understandings of 'network', and in how these hybrid networks are created. RTS itself, as a substantial and recent expression of ANT and despite the challenges it presents to some readers, represents an important contribution to contemporary theories of the network society, particularly when read alongside other approaches such as Urry's (2000), and to ANT literature more generally.[4]

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**Notes**

1. That he acknowledges the twists and turns in his own thinking on and approach to ANT does not make this any less frustrating in a supposedly introductory text in the same way that one might be frustrated by a teacher who leads ten weeks of a semester-long course, through all the intricacies and complications of a sophisticated argument, and then tells his students in the final two weeks to forget everything that he's taught them because the material to be covered in the final two weeks is actually the correct approach to the argument at hand.

2. Some might argue that Latour's *Politics of Nature: How to Bring the Sciences into Democracy* (2004) might also be of some interest here.

3. Latour's argument in RTS does, however, part ways with Tarde late in the book (2005: 239).

4. Readers interested in ANT specifically should consult not only Law 1986, Callon 1986a, and Latour 1988 and 1996b, but also Law and Hassard 1999, Akrich 1992, Akrich and Latour 1992, Latour 1992, Latour 1991 Callon 1986b, and particularly Law's online collection of ANT writing found at http://www.lancs.ac.uk/FSS/sociology/css/antres/antres.htm for further reading.

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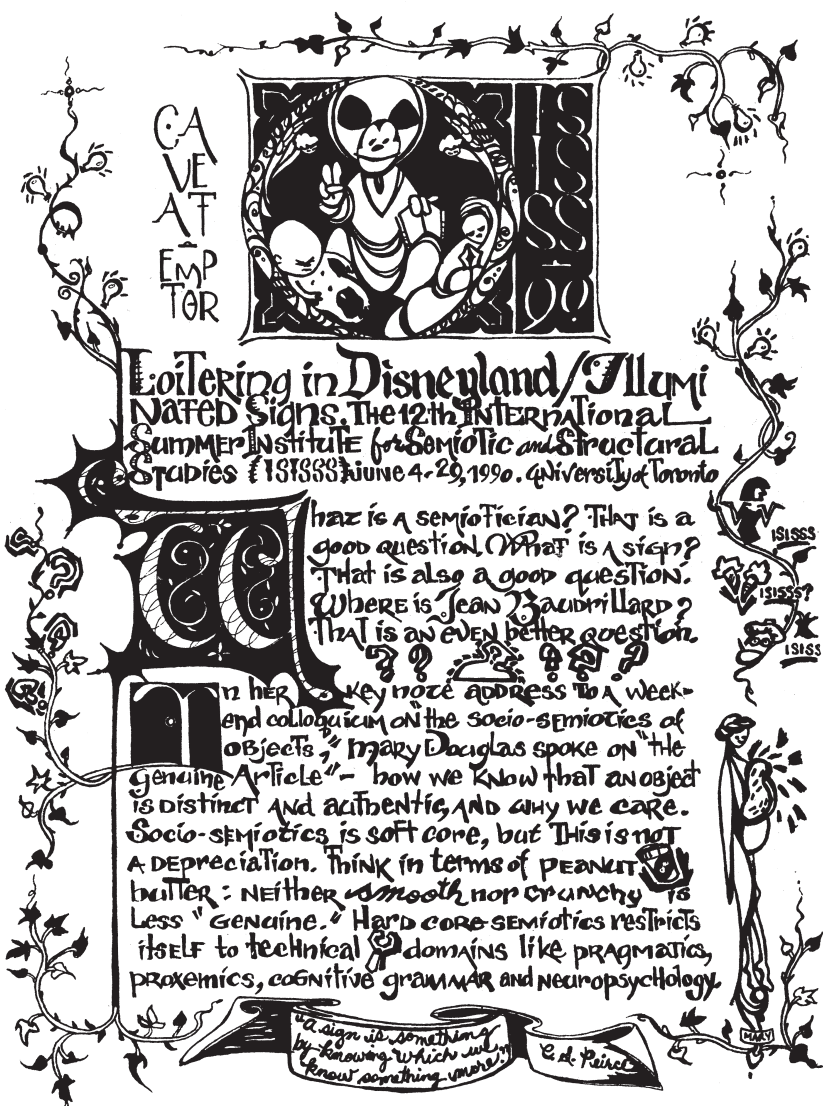
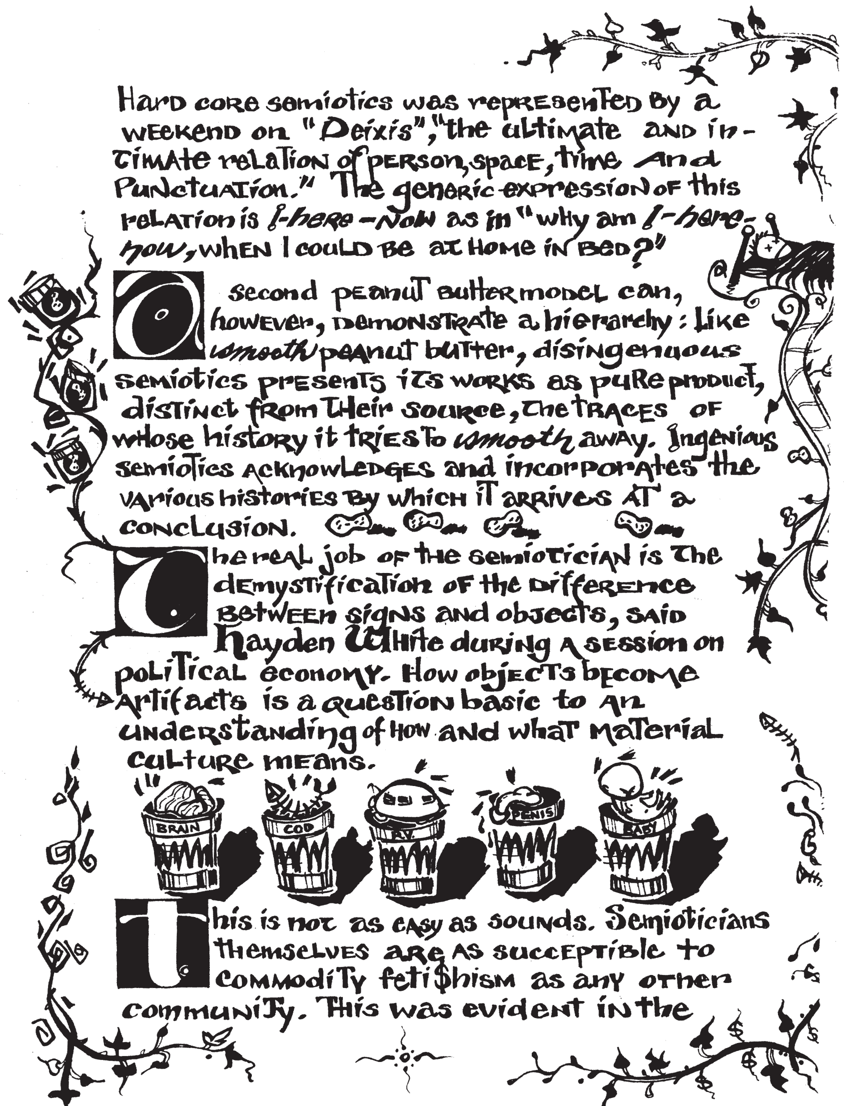
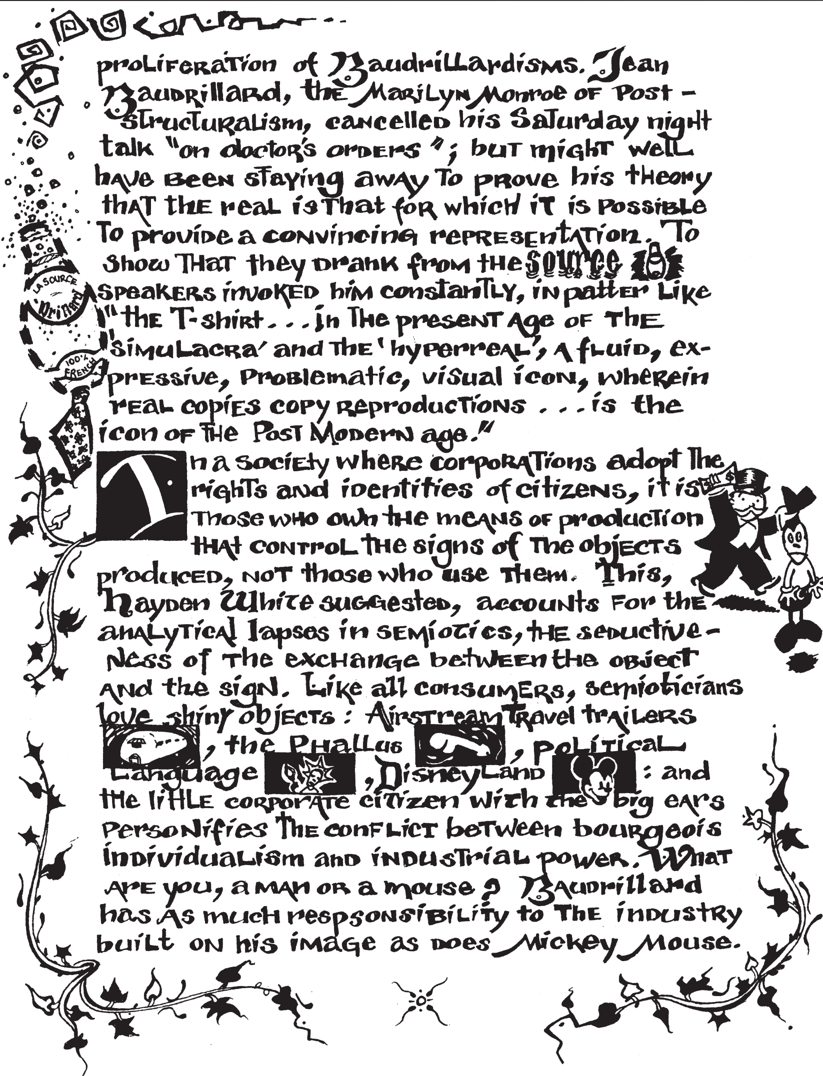
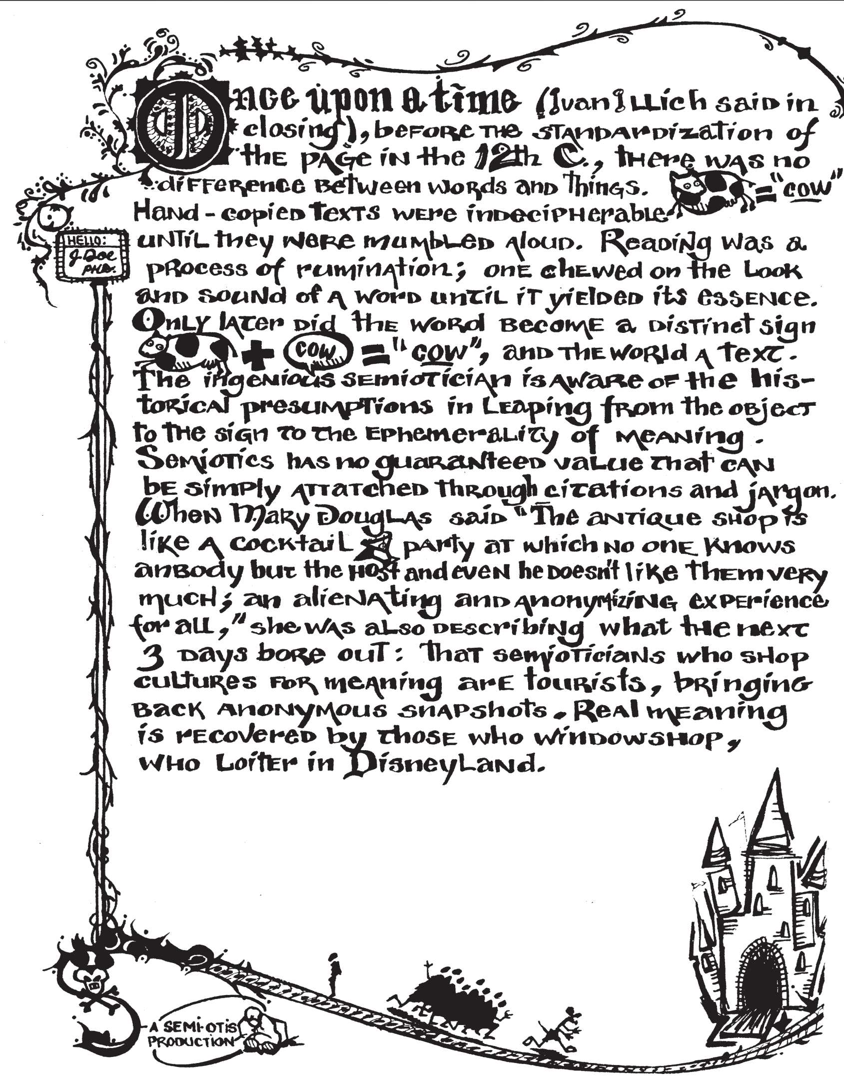
# Loitering in Disneyland

By Judy Anderson and Jonathan Kahana




**Judy Anderson** is an artist based in Damascus, Ontario. Her work is inspired by all things that amuse her; in particular, the curious fascinations of her children, Lolly and Declan. *Kukucaju*, her current series of paintings on plywood, is based on drawings by her daughter.

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A copy was graciously provided by Barbara Godard from her personal archives. The mock illuminated text is based on the proceedings of the 12th International Summer Institute for Semiotic and Structural Studies (ISISSS) in 1990 which was held at the University of Toronto. The authors refer specifically to the seminar classes taught by Mary Douglas on 'The Securing of Public Knowledge', Hayden White's seminar on 'Narrative Discourse and Historical Consciousness', and the colloquium on 'Deixis'. Notably, the non-appearance of Jean Baudrillard at the weekend colloquium on the 'Socio-semiotics of Objects' is derisively deployed as evidence of the evacuation of the real by simulacra or, as proof of his own theory. This text may be read together with the anonymous 'review' of ISISSS '87 published by 'Dave Paparazzi' under the title of "Disseminating Scruples" in Border/lines 9/10 (Fall/Winter 1987-88): 4-5. ISISSS '87 was notable for the seminars offered by Jacques Derrida, Teresa de Lauretis and Luce Irigaray. This article will appear in the next issue of the SRB.