ON THE MYTHOLOGY OF THE NEGATIVE EXPONENTIAL

OR

ON POWER AS A GAME OF ONTOLOGICAL TRANSFORMATIONS*

BY

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In this pièce d’hesitation, I shall continue my explorations into a philosophy of thought-and-action. As so often before, my starting point lies in that special case of thought-and-action which is called geography-and-planning. The more I have explored these relations, the more they have attracted me. What follows is therefore neither the beginning nor the end, but merely a set of musings along a way. Perhaps it is best understood as yet another liberation act. For when I eventually reach page 123, then I hope to let the gravity model for ever rest in peace. Twenty-one years of occasional cohabitation gradually fading away. PACE(M)! Dusty road.

Towards the end of the 1950’s, when I began my university studies, it was thought that the social sciences had an important role to play in the development of a better world. There was an urge to employ optimizing models as blueprints for the building of a new society, more efficient and more just than any before. In the naive minds of brave new students was an idea of social engineering, whose main task was to specify reliable models, estimate their parameters, and on that basis construct an optimal world. There was an image of future geographic engineers engaged in measurements of spatial location and interaction somewhat like aviation engineers performing endurance tests on airplane wings.

There is of course a long tradition both for and against this utility approach to the social sciences. Had my own generation been taught more about it twenty years ago, then there may have been less of the neo-romantic reaction today. But perhaps there was too much to do about future space for anyone to think about past times.

Time revolved, however, and at the wake of 1968 there was much discussion of the efficacy of spatial mathematical models as tools in urban and regional planning.2 The break with the established approach was quite clear, even though there are now signs of renewed pragmatism; under the threat of disciplinary extinction there is again a choir of hollow voices echoing Berry’s (1970, p. 22) warning that “if we, as geographers, fail to perform in policy-relevant terms, we will cease to be called on to perform at all”. The key verb here, however, is not ‘to perform’ but ‘to be called on’. Perhaps the mistake was not performing, but in listening too obediently to those timely sirens who did the calling. Perhaps our responsibility as independent intellectuals is not to stand with hat in hand, but to be jesters, sometimes performing when called on and sometimes refusing all together. But at whose mercy is the jester, who cuts too closely to the truth he is supposed to suggest but never tell?

*The seeds of this work were planted in Poland in August 1977. In February 1978 they were further nurtured in a number of seminars at various British universities. I am most grateful for the excellent mixture of hospitality and conversations which helped them grow. The hosts included Zbyszko Chojnicki and Teresa Czyż in Poznan; Bill Mead in London; Derek Gregory, Alan Baker and Michael Chisholm in Cambridge; Ray Hudson and Jim Lewis in Durham; Nigel Thrift and Alan Wilson in Leeds; Paul Lightfoot in Hull; and Michael Batty and Peter Hall in Reading. Saville Kushner, maverick educator at the University of East Anglia, made all the arrangements, while Ove Svensson at the Swedish Embassy in London helped with the financing.

1 See e.g. L. Marx (1978) on the critique of contemporary science in general and Gregory (1978) on the special case of geography.

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To substantiate my programmatic plea for intellectual anarchy, I merely recall that most plans involve some model of human interaction. In the spatial case this means some variant of the social gravity formulation. It has now been shown mathematically that most of these formulations are special case of the negative exponential; the general function

\[ I_{ij} = f(d_{ij}) \]

can consequently be specified as

\[ I_{ij} = k e^{-b(i,d_j)} \]

whose counterparts in the Wilsonian model become

\[ T_{ij} = A_i O_i B_j D_j \exp (-\lambda C_{ij}) \]

It is not my intention here to dwell on the formal derivations of the negative exponential, which has been done in great detail and with much skill by Wilson (1972), Smith (1975, 1978) and others. My task is not to prove anything. It is merely to convince and persuade. My primary weapons are therefore both logic and rhetoric, for whereas logic ties thought down to predefined categories, rhetorical sets it mowing by breaking established patterns; logic sets order in chaos, rhetoric blows adventure into the stale. Both traditions are equally true and equally needed, for the constructed must be broken and the broken restructured. Deconstruction is the name of the game which Derrida (1975) adopted from Heidegger and Nietzsche. Geographers and planners must learn this game of truth and consequences. What I will search for in the rubble after the storm is therefore that particular mythology of thought-and-action of which the negative exponential is nothing but a convenient example. I choose it as my reference point because I have circled around it long enough to begin both to know and to understand.

Searching for the mythology of the negative exponential is to grasp how a social scientific model can be used as a means not only for understanding the world but for changing it as well. Put differently, it is to grasp the silent rules which govern our work. I am using this terminology of rules and games intentionally, for it is a characteristic of all play that it depends less on the players than on the play itself. The players do what the playing wants, which is the reason why we speak about the rules of the game and not about the rules of the players. When I ask “Who speaks in the negative exponential and in the plans derived from it?” then the answer is neither that it is a group of independent geographers and planners nor the phenomenon of spatial interaction. It is instead the negative exponential itself. And as it speaks, it behaves like all other logical constructs; it obeys only itself and its own rules.

Asking how and why we put order into chaos in one way rather than another is to ask questions about the power of one mythology over another of one world of fact knowledge over another. As a prelude for penetrating these godly questions, it is wise to recall what everyone knows and the scientific constructs which lend them credence are like all other products. They reflect and support the currently dominant ideology. What characterizes this ideology is its anchoring in the dual concept of presence and signification. In the Rusellian spirit, we consequently place a high degree of trust in what currently is, especially as what ‘is’ fits into the observational language of today.

In the interface of geography and planning there is no doubt that the negative exponential furnishes the most accurate and the most sophisticated description available. Put differently, it is this model that provides the best account of what we think we know both about spatial interaction and about optimal spatial arrangements (Batty, 1978). And yet, there is of course always a relation between knowing and knowing what has been, on the one hand, and between knowing and knowing what will be, on the other.

My reasons for raising these issues are not limited to the arguments about logic and positivism. On a deeper level they concern the lessons from Descartes and Galileo. What they taught is that knowledge is neither more nor less than the power to manipulate the world according to the principals inherent in the particular model used. It follows that the form of knowledge is not the known or the knowable but the form which the knowing assumes (Romanowski, 1974). In Nietzsche’s head this idea takes the shape that "it is not the victory of scientific method over our nineteenth century, but the victory of scientific method over science”, which is another way of saying that "rational thought is interpretation according to a scheme that we cannot
throw off' (Nietzsche, 1967, p. 261). Not surprisingly, it was the same Nietzsche who drew attention to the two conceptual pairs of description-and-knowledge on the one hand and action-and-value on the other; whereas knowledge asks of everything 'What is it?' value asks 'What is this for me?'. Is was nevertheless our own contemporary G. Spencer Brown (1972, p. v.), who wrote that 'the universe cannot be distinguished from how we act upon it'. Since 'planning is about social action applied on abstract structure' (Papageorgiou, 1977, p. 1329), it is difficult to say anything more profound about the relations of thought-and-action, science-and-planning. But without difficulties there is no challenge and without challenge there is no meaning. At any rate, this pièce d'hésitation is not yet even a pièce. So continue I must.

From these slow beginnings, I must now extend Nietzsche's ideas into areas with which geographers and planners are more familiar. My experiments will remind some of Habermas (1971, 1973, 1975). But these affinities have less to do with direct influence than with the Prussian heritage in Swedish thought-and-action. If this is so, however, then I will have done something much more than simply acknowledging Habermas's insights; indeed I will have provided yet another example of culture being a product of culture (Bernstein, 1976). As a consequence I endorse the characterization of critical theory as an attempt to penetrate 'beneath the surface grammar of a language-game' to uncover the quasi-natural forces embodied in its depth-grammatical relationships and rules; by spelling them out it wants to break their spell. Its internal telos is to enhance the autonomy of individuals and to abolish social domination and repression; it aims at communication free of domination. Such a critical theory, consequently, can become 'practical' in a genuine sense only by initiating processes of self-reflection — a self-reflection which would be the first step on the road toward practical emancipation' (Wellmer, 1976, p. 258). Put differently, I believe with Berlin (1962, p. 19) that 'the first step to understanding of men is the bringing to consciousness of the model or models that dominate and penetrate their thought and action'.

It is in this context that I gradually have come to believe that most of our social scientific constructs are not at all as value-free as they may first appear. To the contrary, they are profoundly political documents. But this politicalness is not essentially in the particular phenomenon which a model like the negative exponential is talking about. It is instead in the deep structure of the language the model is talking in. As I have argued before, our so called analytical investigations may well reveal more of the categorial frameworks from which they must derive their meaning than of the phenomena to which they refer. But this relation between structure and event remains peculiar, for in its very mentioning I begin to break it. In the process, I aim to enhance the autonomy of individuals and abolish social domination and repression; the hermeneutic circle is spinning around its center point of language.

I have repeatedly been led to this viewpoint almost regardless of the routes I have chosen. Some of the paths I have followed have been well trodden before by people like Rimbaud, Mallarmé, Lobachevsky, Łukasiewicz, Bohr, Gödel, Joyce and Duchamp. What better company could anyone have! In the present context, however, the entrance to the prison-house of language went via the insight that all political and social scientific theories at bottom concern one and one issue only. This is the relation of society and individual, which is closely tied to the psychoanalytical relation between the desire of the self as the same and the desire of the self as other, i.e. to the logical relation between identity and distinction. Once our models are fitted into that framework of the double, their language-based bias begins to reveal itself. For to describe a phenomenon like spatial interaction in terms of the negative exponential is to describe it as it appears from the viewpoint of society at large. It is to describe human behavior in the aggregate and it is to reason by invocation of the law of large numbers. But this is the traditional perspective of manipulators like bureaucrats, planners and politicians. It is within this tradition of phallogocentrism that people who obey the dicta of the negative exponential are seen to behave in a cost-efficient manner (Smith, 1978).

The trouble with such a society-based description is of course that efficiency is in constant conflict with freedom and justice. Thus it does not take many mornings in rush-hour traffic or many visits to the playgrounds of modern apart-
ment complexes to experience that what may well appear as cost-efficient to the analytical planner is an insult and an indecency to the participating individual. And it is exactly in this confluence of Gödel and Arrow that the ideological and political rub is coming. For when we now proceed to action based on those observed and analyzed regularities, then we are effectively perpetuating an attitude which is for the collective and against its individual members.

I take this bias to endanger our very survival for there are many indications that the creativity inherent in the human condition gets its nourishment exactly from a balanced and dialectical interplay between the two forces of society and individual, of macrocosm and microcosm. When we design our planning efforts to favor one of these forces over the other, then we are effectively cutting into the very heart of both social and individual change. I would even suggest that what a formulation like the negative exponential actually describes is not the free interactions of free people exerting their free choices. What it reflects is rather the structure of the semiotic prison of communication. From the impenetrable walls of that bulwark few can escape, because the human creature is both individual and social. Everyone is prisoner and warden at the same time.

It should now be possible to discern the structure of the myth within which I take the majority of social analysts and planners to be operating. The fundamental doctrine is that any conflict between individual and society should be resolved to the latter’s advantage. Mythology, ideology and even culture is indeed often defined as the process by which we assign meaning to our symbols and symbols to our meaning. The process is one of ontological transformations in which things turn into relations and relations into things, visible into invisible, invisible into visible. Sometimes these transformations are communicated in a poem, sometimes in a political slogan, sometimes in a glance, sometimes even in an equation. Sometimes they are in a tear, a fist, a laugh, a touch and a pair of pants. Indeed they are in everything to which we impute meaning, for understanding meaning is impossible without understanding ontological transformations. Occasionally they have even been discussed in the more explicit terms of efficiency, justice, state and individual as in the philosophical writings of Sen (1970), Rawls (1971) and Nozick (1974). And yet it is crucial never to forget that modern tsar who once justified himself by saying that whereas the death of an individual is a tragedy, the death of a million is statistics. The Law of Large Numbers as interpreted in the Highest Court of Supreme Power! The examples multiply and become statistics of their own.

It is in this authoritarian thought pattern of the Law of Large Numbers that I see an important aspect of the currently dominant ideology. Like all other ideologies, it is an ideology of exchange; the reason is that all ideologies concern power and all power relations are exchange relations (Ekeh, 1974, p. 182). In our own world, however, the most important exchanges do not occur immediately in terms of Marxist commodities. Instead they are filtered through a complex code of signs of dress and food (Sahlins, 1976), equations and professional jargon. These are codes of signs which on their own accord rationalize and regulate our thoughts-and-actions. There are in fact clear indications that we now are living in a world in which the distinction between commodities and signs has become artificial (Baudrillard, 1973; Derrida, 1974, 1976; Kristeva, 1977; Barthes, 1977; Coward and Ellis, 1977). In Gramsci’s words (1971, p. 131), “the democratic-bureaucratic system has given rise to a great mass of functions which are not at all necessitated by the social necessities of production.”

Fetishism transmuted. In the signs themselves, things become relations as relations become things. Like myth itself, we may be returning to a concern for those identities and distinctions which are symbolized by the circle, by mandalas, by serpents biting their own tail, by tales telling their own tale. Perhaps the accumulation of paradox will lead to a recognition of self-reference. Perhaps logic will thereby be forced to accept its long rejected father/child and become truly dialectical. If so, it is appropriate to recall Lenin’s words (1972, p. 196) that it was “Hegel who brilliantly divined the dialectics of things in the dialectic of concepts.” And Hegel, of course, wrote much on tragedy and little on statistics. Only some understand the connection.

It is when I interpret the negative exponential as a current expression of the dominant ideology
of exchange and communication, that I begin to discern yet another issue. Its name is POWER. But 'power' is merely a word for a set of relations. Like all other relations its meaning is context dependent.

What I would like to understand about power is how subsisting entities like society tries to exert it in the name of the collective good and how individuals try to counter it in the name of freedom. Understanding in this context may well be in learning that our most powerful words, concepts and relations are ontologically double-faced. One of these Janus-faces carries the firm features of material existence, while the other is characterized by the ambiguity of mental subsistence. It is a requirement of those who have power that they can play on this opposition by revealing one of the faces and at the same time concealing the other. But to grasp power is to see how the two sides are intrinsically tied together, i.e. how signs and symbols embody both thing and meaning, both material and social.

One of the first to penetrate this aspect of thought-and-action was Marx, especially in his treatment of the fetishism of commodities and his reference to the unequal relations of use-value and exchange-value; use-value is primarily in the material relations of existing things, while exchange-value is essentially in the subsisting social relations. Bertrand Russel was trying to grapple with the same issue through his definitions of proper names and definite descriptions, while Wittgenstein was driving at the same point by employing the concepts of internal and external relations. Structuralist of various persuasions have focussed on the dialectics of signifier and signified, of word and object (Olsson, 1975).

When the negative exponential is fitted into the same analytical framework, it illustrates the intricate relations between human behavior as concrete experience on the one hand, and statistical functions as abstract description on the other. And yet we are never ruled by our things directly, but only by the meaning through which we give them life; as Frud knew and Lacan (1966) learned, the aim of psychotherapy is to recover the shared meanings of and in our symbols. Perhaps we should therefore pay less heed to the Law of Large Numbers and more to the Law of the Double, which governs how thought gives rise to symbols and symbols to thought. Perhaps it is only through the play of doubles that relations are materialised into things and things are spiritualised into thought. But even though symbols are on one side and myths on the other, the intermediary is nevertheless a set of internal relations. Social scientists call them internally consistent belief systems. Theologians prefer the label God! In both cases, the attempt is to name the unnameable.

It is through the Law of the Double that the negative exponential becomes a tool of power and authoritarian manipulation. Perhaps it is even both an indication and an explanation of the privileged status I share with my readership that we have both the ability and the opportunity to arrange our own lives in such a way that we do not have to behave as the negative exponential says we should; it is within our power to engage in temporal and spatial interaction patterns which are far more flexible than those of the population at large.

As an example of the world of the negative exponential, it was recently reported that fifty-five percent of the rush-hour commuters cannot find a seat on the train. Instead of sitting comfortably, they are transported between home and work-place hanging like monkeys from the straps in the ceiling. It is furthermore projected that the trains of 1990 will be too full even for those who are willing to stand; no one can get on; the train passes by.

What makes this example so interesting is that it is not from cities like New York or Tokyo. It is from Stockholm. Ant this capital is in a country where the trains are not only state owned but where they run on time, where housing construction is essentially state financed and highly regulated, where a large portion of the jobs are in the public sector. Here then is an interaction system in which all variables are essentially government controlled and open to considerable engineering. But is it efficient and equitable? And more important, is it creative and therefore human? In turn these questions raise once again the issues of Weber, Gramsci, Habermas and others. For if it was possible forty-five years ago to blame the conventional capitalist and his system, who does a Swede blame now? Who do I ask, when I wish to know whether those spatial interaction patterns we describe so well with the negative exponential represent free choice or manipulation? Perhaps there is nobody to ask.
but ourselves. Perhaps the serpent snatching its own tail actually is a good symbol for the human condition in the postcapitalist state. Is it such that the main function of the current ideology of planning offices, political parties and corporate organisations is to fulfill utopian and fetishistic needs for those who think-and-act within its confines? Are Marx and Freud really doubles of each other? If so, can Wittgenstein and Jung serve as their mediators? Or must they be supported by deconstructive artists as James Joyce and Marcel Duchamp? Is it in these constellations what we will find the key to the code in which individual and society converse with each other?

Perhaps it is these questions that carry the answer to what power is. Perhaps real power is in the ability and opportunity of breaking rather than of obeying the laws, of living as anarchists in adventure rather than as conservatives in the Order of Security. Perhaps it is not in being average but in placing yourself a few standard deviations away form the mean and thereby affect it most. Perhaps it is in punishing and disciplining others for their own good, while at the same time milking them to the limit. Perhaps the will to order is the will to power, for it was Nietzsche (1967, p. 277) who taught that order is logic and that understanding logic is understanding that “the will to equality is the will to power.” But both logic and power are thoroughly dialectical and subject to the Law of the Double; identity and distinction merge as Hegel said they should. As a consequence, the relations of power and authority are too ambivalent to be caught in the well-defined categories of conventional social science. And so it is that the most insightful modern treatments of power, ideology and planning may not be in our professional journals but in the surrealist images of writers like Elias Canetti, Gabriel Garcia Marquez and György Konrád. But perhaps the tradition is already dead, for it is now being dissected by academia itself (Brown, 1977; Jonsson, 1978).

Questions are posed with answers in mind. But when the answers turn out as perhaps, then the questions themselves become elliptic. Hence the discussion is back where it started, albeit at another level. As in life itself, beginnings never reach their end. And yet the question remains. — How can I grasp that particular mythology which expresses itself not only in the model I have written about, but also in the words I have written in. What do they mean, those ordering commands we obey without hearing them? How do they keep themselves alive, constantly changing yet always remaining the same?

My suggestion is that the silent commands are powerful because they reside in internal relations; in Blake’s (1977, p. 185) aphorism, “Truth can never be told so as to be understood, and not be believed.” Inherent in the truth of the negative exponential is consequently the authoritarian belief that society is always right; authority is inseparable from power. Once this much has been experienced, it is easier to understand those forces which try to whip us all into the same thoughts-and-actions. But who are the masters of the formal axioms and who are the slaves of the theorems? Does the cognitive order of thoughts become the order of things because the axioms are condensations of conventional truth? Is a language of extreme precision by necessity a language of extreme suppression because conventions without domination are as impossible as obligations without sanction? But is it the few over the many or the many over the few? You or I, I or You? They! Dialectics again!

It is a foreboding of closing times that even though my discussion began in the formalism of the negative exponential, it has moved from proofs and verifications to questions and perhaps. The musings are no longer limited to professional philosophers and social scientists but relate to human beings in general. The questions are updated versions of old ones — murky reflections of their own time and place. There is no choice, because truth are beliefs and beliefs are expressions of internal relations. Tied together like embracing lovers they hide behind the historically specific masks of external relations; as Lévi-Straus (1969, p. 20) once put it, the important task is not “to show how men think in myths, but how myths think in men, unbeknownst to them.”

At this moment, it seems to be in language that the I and the world meet, unbeknownst to either. This is my interpretation of the theories, models and plans of which the negative exponential provides a convenient example. In Friedrich Schleiermacher’s spirit, I have tried to understand those works and their authors better than
they have understood themselves. Whether I have succeeded is a question I no longer dare to entertain. What I am certain of, however, is that just as those people are caught within their incestuous ideology, so I am caught within mine. And to that mythical veil, I am so close that I can neither see it nor understand it.

There are nevertheless suggestions about the coming unveiling. Paul Ricoeur (1965) may have pointed in the right direction by noting that there are two types of hermeneutics. One he called a hermeneutics of belief, the other a hermeneutics of suspicion. Among the prophets of the latter camp he included people like Marx, Nietzsche and Freud. What they all had in common was the aim of exposing the masked motives of our thoughts-and-actions. While Nietzsche and Freud tried to reach this goal by forging a consciousness which kept an eye on the hidden side of things, Marx attempted the same by focussing on the interplay of social and material relations. As with a sandglass, one thought is turned on its head when another is put on its feet.

Perhaps our own time is ripe for engaging these traditions of existence and subsistence in a rhythmic and dialectical fertility dance. Perhaps the place where the beat is heard most engagingly is on the strange barricades of intellectual Paris. For some time now, Michel Foucault (1975, 1976) has used the prison and the madhouse as a paradigm of social institutions, while Jacques Derrida (1976) conceives of change as words put under the eraser. Through that meta- phoric device of crossing out, he tries to symbolize the fact than even what we try to erase always leaves a trace; difference is deferred into difference. Perhaps it is in those fluctuations of being and non-being that the currently dominant ideology now sneaks itself behind yet another mask of obsfucation. Perhaps the features of that mask are in what art critics call the modern tradition of the new, in that movement which was spearheaded by Mallarmé's search for holes in the wall. Holes through which we may catch a glimpse of the freedom which lies outside of the prison-house of communication. Holes which open and close merely by being mentioned.

And so it is that throughout this pièce d'hi- sitance, I have tried to uphold the Nitschelian vision of truth which contains error. "Not the error which has been overcome in a new truth, not the error which those who lie to themselves accept, but the inescapable error which is present even in the new truth" (Wilcox, 1974, p. 170). When 1984 comes around, I must therefore not be surprised to learn that a budding scholar has made a frequency analysis of the words I have used in these very pages. Most likely he will discover that they follow the negative exponential. And who am I to judge whether such a find adds to our knowledge; as Kafka knew, judges easily turn into defendants. Yet, if the chance happened, she would be sensitive enough to turn her knowledge into a Joycean instrument, by which she could penetrate the emptiness between Marx and Freud. And she would come. And a new social science would be born.

References
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