Darko Suvin (2008-15, 7,300 words)

EPISTEMOLOGICAL MEDITATIONS ON SCIENCE, NARRATION/POETRY, AND POLITICS[11/]

I propose in this essay to suggest, first, an orientation in epistemology (toward a "soft" skepticism). On that basis, and assuming that science exists only as history — possibly a long-duration one — I enlist the help of Hesiod, Nietzsche, and Marx for a hypothesis of two major alternative horizons and roads in science. The original S1 is science-as-wisdom, present in all civilizations; the upstart S2 is science-as-domination-and-profit, present from rise of capitalism, in which people have no place. I then draw a parallel between sciences and arts, including their institutional anchorage, and in particular insofar as narration is concerned. I end with a brief glimpse of how the art and cognition of poetry may intervene in a politics of survival: importantly but indirectly.

1. Central Orientation Points for Epistemology: For a "Soft" Skepticism

I am not aware of a systematic basis for epistemology we could today use, but I postulate that our interpretations of what is knowledge or not, and how can we know that we know, are largely shaped by the "framework of commitments" we bring to them. Catherine Z. Elgin usefully formulated in 1982 a strategic "soft" skepticism that still allows such commitments:

> Philosophy once aspired to set all knowledge on a firm foundation. Genuine knowledge claims were to be derived from indubitable truths by means of infallible rules. The terms that make up such truths were held to denote the individuals and kinds that constitute reality, and the rules for combining them ... were thought to reflect the real order of things. — This philosophical enterprise has foundered. Indubitable truths and infallible rules are not to be had.

Instead, thinking always begins with working approximations based on "our best presystematic judgments on the matter at hand" (Elgin 183). As we advance toward understanding, we often discover these approximations are untenable or insufficient — but there is no other ensemble to be had. Even "scientific evidence," in the sense of proof, is always "theory-laden," determined by "our conception of the domain and... our goals in systematizing it..." (Elgin 184-85). Alternatively, a tradition from the more radical Skeptics through the Post-Modernists and extreme constructionists has questioned whether there is a reality to be known and whether, if it is there, we could know it or talk about it.

Neither the absolutist (Objectivist) nor the nihilist tradition is satisfactory. The horizon I am sketching is characterized by Elgin and Nelson Goodman in 1988 as "reject[ing] ... both unique truth and the indistinguishability of truth from falsity" (3). A univocal world — *the* fixed reality out there — has been well lost, together with the Unique Final Truth (divine or asymptotically scientific) and other Onenesses of the monotheist family. A sense of panic at the loss of this clear world, at the loss of theological certitude, not only permeates dogmatists of all religious and lay kinds, but has also engendered its symmetrical obverse in an absolutist relativism. How is a third way possible beyond this bind?

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[1] The first part of this essay uses paragraphs from my longer discussion in "On the Horizons." Amid the Great Ancestors of epistemology I would count Master Mo Zi (5th C BCE), Aristotle, Epicure as transmitted mainly through Lucretius, and then Marx and Hegel.

It can begin by recognizing that right and wrong persist, but that rightness can no longer be identified with correspondence to a ready-made, monotheistic Creation, but must be created by us, with skill and responsibility, *within contingent historical situations*. Goodman and Elgin think that te term and concept of truth as usually conceived is too solidly embedded in faiths and certitudes of monotheistic allegiance to be safe and useful; to the contrary, categories and argument forms that are products of changing human cognition are better instruments for practical use, testable for situational rightness. Truth is strictly subordinate to rightness in this approach, and this rightness is dependent on our various symbol systems (cf. Aronowitz vii-xi and passim). One consequence is that science loses its epistemic primacy: like art and everyday perception, "[it] does not passively inform upon but actively informs a world" (Elgin 52-53). Both arts and sciences overtly repose on intuitions, it is only that for sciences these are buried in their axioms as indubitable certainties. Whether you prefer Marx's or Balzac's description of 19th-Century France will depend on your general or even momentary interests, but they're in no way either incompatible or subsumed under one another: and both are cognitive.

Sketching an operative epistemological realism can further proceed by recognizing that there are still some logical ways if not of defining truth then at least of defining untruth (Goodman and Elgin 136). All opinions are constructed and relatively wrong or limited, but even so some are valid within given limits (this needs a sense of relevance or pertinence, impossible to detach from the situation and context of the knowing subject — cf. also Prieto), and some are more wrong than others. This holds pre-eminently for those I would call *monoalethist* (from *alethé*, truth): all those — from monotheists to lay dogmatists (Fascists, Stalinists, and believers in the Invisible Hand of the Market) — who hold they have the Absolute Truth, including the belief that relativism is absolute. Only belief in the absolute right (Haraway's "God-trick," "Situated" 589) is absolutely wrong.

2. Cognition Is Constituted by and as History: Life-destroying and Life-preserving Science

2.1. A Dissident View of Science

In a remarkable passage right at the beginning of *Works and Days*, Hesiod invents the myth (or allegory) of the two Erises, the benign and the malign one (I: 11-26). The bad Strife favours wars and civil discords. But the firstborn is the good Strife, whom Zeus has placed at the roots of the earth, for she generates emulation: one vase-maker or poem-singer envies the other, the lazy and poor peasant imitates the industrious and richer one. This *polar splitting of concepts* seems to me a central procedure of critical reason, dissatisfied with the present nominations and trying to insinuate opposed meanings under the same term. I shall adopt this Hesiodean procedure for knowledge and then science.

The principal ancestors to this endeavour may be found in Marx and to a minor but still significant degree in Nietzsche. I take from Nietzsche that belief in a fixed correspondence of intellect to thing/s is an ideal impossible to fulfil and leads to faking and skepticism. This Truth is a lie, and whenever erected into a system, as in religion and in Galileian science, it compels lying. Any cognition developed against this fixed horizon partakes for Nietzsche of a huge, finally deadly "illusion" (*Zur Genealogie* 128). The constructivist account, on the other hand, is a creative transference of carrying across, in Greek *meta-phorein*, whence his famous hyperbolic statements such as that knowing is "nothing but working with the favourite metaphors" (*Philosophy* xxxiii). For Nietzsche wisdom arises out of the knowledge of nescience: "And only on this by now solid and granite basis of nescience may science have arisen, the will for knowing on the basis of a much more powerful will, the will for *unknowing*, for the uncertain, the untrue! Not as its opposite, but — as its improvement!" (*Jenseits* 24). Yet take care: in terms of fictional Possible Worlds vs. ours,

Nietzsche's "untrue" is the opposite of the illusionistic, and rules out angels, UFOs, Mickey Mice, and the Invisible Hand of the Market. Nescience demolishes The Monolithic Truth while preserving verifiability for any given situation, and denies the illusions that so often lead to fanatical belief.

More useful still is Marx, whose relevant views I discuss at length elsewhere ("Living" and "On the Horizons"; cf. also Aronowitz, esp. ch.s 2 and 3). Suffice it here to say that Marx had a dual view: he rejected positivistic approaches, pouring his scorn on the falsities of bourgeois political economy; but simultaneously he chastised all attempts to subject science or cognition to "a point of view from the outside, stemming from interests outside science" (MEW 26.2: 112). *Capital* itself is presented as a project of "free scientific research," which assumes the task to clarify the inner relationships of the phenomena it deals with without imposition from the outside, and in particular against "the Furies of private interest" (MEW 23:16). His two major, consubstantial cognitive insights are first, that societal injustices are based on exploitation of other people's living labour; but second, the insight that the proper way to talk about the capitalist exploitation which rules our lives is not in the *a priori* form of dogma, a closed system, but in the *a posteriori* form of *critique*, which is a negative, denying science: it sketches in a powerful theory but as an antithesis to the capitalist status quo or Kuhnian norm. Legitimate cognition is epistemically grounded in the process it describes, and strategically developed by articulating a radically deviant stance against a dominant in a given historical situation (cf. Marcuse). After Marx, it should be clear that facts are valid only within categories or Aristotle's *genera*, so there are no descriptions wholly independent of prescriptions: "All modes of knowing presuppose a point of view.... Therefore, the appropriate response to [this is]... the responsible acknowledgement of our own viewpoints and the use of that knowledge to look critically at our own and each others' opinions." (Levins 182) The rightness of a theoretical assertion depends on evidence as interpreted by the assertor's always socio-historical needs, interests, and values. In particular, all judgments contain both factual & evaluating aspects. though some might be more openly or more intensely evaluative.

As suggested, science always proceeds from axioms, impossible to state exhaustively and by definition unprovable but committed to a given firm view. Approaching science from this epistemological basis, I suggest the Hesiodean procedure of splitting the institutionalized horizons of science-as-is off from those of a potentially humanized science-as-wisdom, which would count its casualties as precisely as the US armed forces count their own (but not those they bomb). I wish I could call the latter "science" and the former something else, perhaps technoscience, but I do not want to give up either on science or on technology. I shall provisionally call the firstborn, good science "Science 1" (S1) and the present one, whose results are mixed but seem to be increasingly steeped in the blood and misery of millions of people, "Science 2" (S2). The medieval theologians would have called them *sapientia* vs. *scientia*, though in those early days they optimistically believed *scientia* could be tamed.

These are ideal types only, intermixed in any actual effort in most varied proportions: also, the beginnings of S2 are in S1, and amid its corruption it retains certain of its liberatory birthmarks to the present day. Nonetheless, S2 is fixated on *domination* and the consubstantial *occultation of the knowing subject* that evacuates his/her inevitable societal stance and of the tacit, again societally implied but not conceptually formalisable, element in knowledge (see M. Polanyi and Merleau-Ponty). This flows out of its being "a particular moment in the division of labor." The avoidance of capricious errors "does [not] protect the scientific enterprise as a whole from the shared biases of its practitioners." In sum, "The pattern of knowledge in science is ... structured by interest and belief.... Theories, supported by megalibraries of data, often are systematically and dogmatically obfuscating." It is not by chance that "major technical efforts based on science have [led] to disastrous outcomes: pesticides increase pests; hospitals are foci of infection; antibiotics give rise to new pathogens; flood control increases flood damage; and economic development increases poverty" (Levins 180, 183, and 181).

2.2. On the S2 Paradigm

Bourgeois civilization's main way of coping with the unknown is aberrant, said Nietzsche, because it transmutes nature into concepts with the aim of mastering it as a more or less closed system of concepts. It is not that the means get out of hand but that the mastery — the wrong end — *requires* wrong means of aggressive manipulation. S2 is not only a cultural revolution but also a latent or patent *political* upheaval. The scientific, finally, is the political.

There are strong analogies and probably causal relations between the "search for truth, proclaimed as the cornerstone of progress" and "the maintenance of a hierarchical, unequal social structure," within which capitalist rationalization has created the large stratum of "administrators, technicians, scientists, educators" it needed (Wallerstein, *Historical* 82-83). In particular, it created the whole new class of *managers*. As Braverman's *Labor and Monopoly Capital* pointed out, "to manage" originally meant to train a horse in his paces, in the manège (67). F.W. Taylor did exactly this — he broke "the men," calling in his *Shop Management* for "a planning department to do the thinking for the men" (Braverman 128). Since "machinery faces workers as *capitalized* domination over work, and the same happens for science" (Marx, *Theorien* 355), control was later built into the new technologies. During the 19th Century, "science, as a generalized social property" (S1) was replaced by "science as a capitalist property at the very center of production." This is "the scientifico-technical revolution" (Braverman 156), while technoscientific ideology becomes, as Jameson notes, "a blind behind which the more embarrassing logic of the commodity form and the market can operate" (*Singular* 154). Already by the early 1960s, 3/4 of scientific R&D in the USA was corporate yet financed directly or through tax write-offs by the Federal government, that is, by money taken from tax-payers, while profits went to corporations (164-66). It is almost a century by now that scientific research is mainly determined by expected profits to the detriment of S1 (cf. Kapp 208ff.), where it is not neglected for purely financial speculation.

The Humean, quintessentially bourgeois supposition that science does not deal in values, which began to be widely doubted only after the Second World War, had as "its actual function to protect two systems of values: the professional values of the scientists, and the predominant [status quo] values of society as they existed at that moment…." (Graham 9, and cf. 28-29). The stances of "objectivity" and erasure of the subject actively fostered a treatment of people (workers, women, patients, consumers) as objects to be manipulated just as nature was. As a hierarchical institution devoted to manipulation, S2 was easily applicable for "human resources" too: the Nazi doctors' experiments were only an extremely overt and acute form of such *Herrschaftswissen***,** knowledge used for domination.

We must ruefully accept, with due updating, Gandhi's harsh verdict about science: "Your laboratories are diabolic unless you put them at the service of the rural poor" (Gandhigram). Or Brecht's even richer question of 1932 (sensing the worse to come, which has not ceased coming):

> Faced with all these machines and technical arts, with which humanity could be at the beginning of a long, rich day, shouldn't it feel the rosy dawn and the fresh wind which signify the beginning of blessed centuries? Why is it so grey all around, and why blows first that uncanny dusk wind at the coming of which, as they say, the dying ones die? (GBFA 21: 588)

He went on for the rest of his life to worry at this image of false dawn through the example of Galileo. His final judgment was that Galileo — reason, science, the intellectuals — failed, and helped the night to persist, by not allying himself with a political dawn-bringer. But then, we might ask today, where was he to find a revolutionary class who wanted such an ally, and where indeed was Brecht to find it after 1932? In his poem "1940" (after the pustule had broken) Brecht matter-of-factly noted:

From halls of learning
Emerge the butchers.

Hugging their children tightly,
Mothers scan with horror the skies
For the inventions of the scientists.

2.2. Sketches for a S1 Paradigm

Predominantly, S2 is Power (over people), S1 is Creativity (within people). In this view science is a usable and misusable ensemble of cognitions, not an absolute truth we can approach asymptotically. It is principally a "by whom" and "for what" — an "impure" productive relationship between (for example) workers, scientists, financiers, and other power-holders, as well as an institutional network with different effects upon all such different societal groups, which can and must become less death-oriented.

So, what would an updated, sophisticated S1 mean — how can we really get a science for the) people, science wedded to easing human life and to a humane quality of life? I believe that our *first* necessity is *radical social justice*, so that rethinking would get a chance. S1 must be based on holistic *understanding*, which would comprise and steer analytical knowledge (Goodman and Elgin 161-64). This would not at all diminish its impressive status as institution; on the contrary, S1 would finally be as truly liberating, both for its creators and its users, as its best announcers have, from Bacon to Wiener and Gould, claimed it should be. It could at last embark on a full incorporation of aims for acting that would justify Nietzsche's rhapsodic expectation: "An experimenting would then become proper that would find place for every kind of heroism, a centuries-long experimenting, which could put to shame all the great works and sacrifices of past history" (*Fröhliche* 39) — truly, a joyous science. It would have to ask: what questions have not been asked in the last 400 years, and for whose profit have we ignored them?

Second, we must learn and internalise the lesson that our technical competence, based on an irresponsible S2 yoked to the profit and militarism that finance it, vastly exceeds our understanding of its huge dangers for hundreds of millions of people and indeed for the survival of vertebrate ecosphere (cockroaches and tube worms might survive). To survive, we imperatively have to establish and enforce a graduated system of *risk assessment* (Beck) *and damage contro*l based on the negentropic welfare of the human community and the eco-system in which we are embedded. This means retaining, and indeed following consistently through, Merton's famous four basic norms of science — universalism, scepticism, public communism, and personal disinterestedness (cf. also Collingridge 77-85 and 99ff.) — as well as strict scientific *accountability* that adds to the norm of not falsifying findings the norm of being responsible for their consequences. This means practicing science from the word go (its teaching) as most intimately co-shaped by the overriding concerns of what and who such an activity is for: "A stronger, more adequate notion of objectivity would require methods for systematically examining all the social values shaping a particular research process…" (Haraway, *Modest* 36, building on Harding; cf. also Wallerstein, *End* 164-67, 238-41, and 264-65). Major scientific projects should not be allowed to become "in house" *faits accomplis* without a public debate which acknowledges that: "Every decision involves the selection among an agenda of alternative images of the future, a selection that is guided by some system of values" (Boulding 423), and within which all the parties involved should provide a list of all previous major research funding, occupations, investments—and even public stands on political issues (cited in Collingridge 186, with disfavour).

These suggestions are just the beginning of a first pass at a solution.

3. Narrations in Science and Fiction

3.1. Not Only Conceptual Understanding

The Kantian tradition has a major difficulty with judgments: they deal with particulars, but how is one to account for any particular, notoriously contingent and as it were anarchic, for which the general concept has still to be found? Kant sometimes finessed this by using examples, which hide a generalized allegory: the particular Achilles is the example of Courage in general. This welcome subterfuge pointed already to the untenability of claims for science as *the* best (or only) knowledge, since an example partakes both of image and of an implied story, as Achilles before Troy. It reintroduced history as a story, enabling us to understand why the *Iliad* was an unsurpassed cognitive fount for the Hellenes. It follows that science and other ways of cognition — say art — do not relate as "objective" vs. "subjective" (or strong male vs. weak female), but as human constructions elucidating the human species' traffic with aspects of the universe or nature. All of them share some overlapping aspects, for example: a/ a striving for *understanding*: literary knowledge, say, was posited by Auerbach as an attempt "to designate man's place in the universe" (17); b/ fundamental *assessments* — suggested and in some cases constricted but not determined by "facts" — which are epistemologically. indispensable but not specifiable as a proposition or argument (see 1.); c/ a sense of relevance, which Grene (following C.F.A. Pantin) calls *recognition of pattern* in all acts of knowing, that includes awareness of *Gestalt* (Kekulé's dream of the benzene ring, Maxwell's equations that add one missing term) and intuitive perception of form (Grene 204; cf. the work of Gendlin, such as "Thinking" and "A Changed"). Unspecifiable may be also called *esthetic*, as in Dirac's comment that the Theory of Relativity was accepted for two reasons: agreement with experiment and a "beautiful mathematic theory [or simple mathematic concepts that fit together in an elegant way] underlying it, which gives it a strong emotional appeal" (cited in Grene 205). The pattern may also be statistical, or an analogical model as Darwin's transfer of pigeon- & stockbreeding to origins of all species.

3.2. Sciences and Art/Poetry

What are then a few of the relevant differences and similarities between the cognitive horizon and route of sciences and of arts, including creative writing (poetry in the wider sense)? I think there might be at least two, an immediately sociopolitical and power one, and an epistemological (that is, long-duration political) one.

3.21. On Pragmatic Anchorage

One major difference appears to be that these two ways of cognition are guided by different constraints for coherence and different conventions of anchoring or "entrenchment." For one thing, sciences may have a "long duration" additiveness and deal with univocal and stereotypic contrivances or arrangements — that is, those in theory repeatable with identical effects. Nonetheless, every engineer knows practice is different: we touch here upon Geertz's "local knowledge," best dealt with precisely in arts such as literature but also unavoidably foregrounded in social sciences such as precisely anthropology.

Sciences are thus supposed to be cumulative and self-correcting, and whatever is not such is non-science, which in this exclusive optic means non-cognitive. Yet first of all, this is denied by Kuhn's theory of interpretive paradigms in science which are exclusive and not cumulative, depending as they do on a powerful institution supporting it — that might change; I propose to

return to this. And second, the non-cumulative or non-subsumptive characteristics are well represented within disciplines such as philosophy, theory and criticism of arts (including literature), and many "human sciences," including some kinds of theology. Their coherent duration is often as long or longer as that of Baconian experimental and Galileian or Cartesian mathematized science, and they "exhibit all the features we require for making rational appraisals of the relative merits of competing ideologies within them." Such "nonsciences, every bit as much as the sciences, … both have criteria for assessing the adequacy of solutions to problems; both can be shown to have made significant progress at certain stages of their historical evolution" (Laudan 191). The crucial element here seems to be ***ongoing institutional anchorage***, decisive for science though not unknown in art: think of Athenian or Renaissance performance, supported — like science — by institutions geared to foreseeable and applicable results. An anchorage is also the ideal horizon of the more decentralized institutionalization of publishing of poetry or the novel in periodicals and books , operating with statistical projections. The supposed cumulative progress seems thus to be an epiphenomenon of stable historical anchoring in strongly organized social interests.

The differences between sciences and nonsciences as long-duration cognition are of a piece with their institutional political and financial patronage, which entails a stable overall paradigm. The patronage, and thus the loyalty (or if you wish subservience) to the reigning ideology and the *patrons*, is in sciences unbroken from, say, the Royal Society on, whereas — despite the attempt of Richelieu's *Académie française* and its successors in many States, down to Stalin — it is intermittent and scattered in the arts. This leads to the second difference in their internal power-structures. It is more hierarchical, from top down, in S2 as a strong institution; while the tradition of S1 and almost all art is from bottom up. Of course, in both cases the univocity wavers for the non-institutionalized creator or artefact. In the case of people, the projects and stereotypes within which they work (for ex., genre conventions, from the epic poem to Science Fiction) are enmeshed with the creator's complex past and present histories, with not quite foreseeable choices. In the case of artefactual tradition, the novel has since its birth, and poetry has since the Romantics, played off constant paradigm shift against generic enablement and anchorage, the New against the recognizable. A computer is foreseeable, a human brain is not. Science is what can be fully repeated, art is what cannot.

To repeat about the similarities: the general horizon, source, and finally the aim — the Supreme Good — of both sciences and arts is to my mind the same: making life, that precious and rare cosmic accident, richer and more pleasurable; fighting against entropy by making sense, in different ways, of different segments of nature, including very much human relationships. In brief, both are cognitive tools and pursuits. More particularly, both deal, against a horizon of human interest and evaluation, with ***situations*** or with Bakhtin's chronotopes — significantly taken from a popularizer of Einstein, Ukhtomsky — which then, most importantly, imply a whole Possible World.

As Bruner argues, the arts are differently entrenched from sciences: the arts implicitly cultivate hypotheses, each set of which requires a Possible World but not the widest possible extension for applying that set in our World Zero, that is, testability in the scientists' sense; rather, they must be recognizable as "true to conceivable experience" or verisimilar (52 and passim). In the words of de Beauvoir: "It is necessary that I, the reader, enter into the author's world and that his world should become mine" (82). Institutionally speaking, at least since the Romantics the community at large of authors and readers is NOT required to be the ***immediate*** tester and judge of a new artistic chronotope, though a smaller — sometimes very small — group usually does take up such a function. This situation is formalized in the notion of a specific "voice" indispensable for every literary author: it would be difficult to use this notion in physics or biology, though things get trickier when the product is a literary work about science (and all scientific reports are such hybrids, nearer to literature as they get longer, say in Marx or Darwin). The detailed description of what a quality of life (or its lack) may be is what fictional cognition in much narrative deals with,

say in the best Science Fiction such as Le Guin's (see Suvin,"Cognition"). In general, the different genres of literature "can provide us with knowledge of how to live (in the novel), of how people have lived (in biography), and of how to try to transform one's own performed life into knowledge for living (in autobiography)" (Ette 988).

The formalizations of S2 try to taboo this horizon and to erect the very specialized, fenced-in lab as *the* exemplary situation-matrix, the only allowed chronotope, and quantitative precision as the only horizon, insofar as both are extrapolatable to reality. Yet both the lab and full quantification fail immediately and obviously in all social and biological studies, say primate research, not to speak of sociopolitical research. The chronotope of an S2 experiment is manipulated so as to be mathematically explainable, which usually means quantitatively predictable; the human agents must be kept out.

Furthermore, formally speaking, "atom" is the name of an agent in a story about "chemistry," just as "Mr Pickwick" is the name of an agent in a story about "the Pickwick Club" (Harré 89), though there are different rules of storytelling in the two cases. "[Theoretical f]ictions must have some degree of plausibility, which they gain by being constructed in the likeness of real things," concludes the middle-of-the-road historian of science Harré (98). If we take the example of literary and scientific "realism," we find they are consubstantial products of the same attitude or bearing, the quantifying thisworldliness of bourgeois society. This is a contradictory stance, with great strengths — obvious from Cervantes and Fielding on — based on looking steadily at this world as a whole, and increasingly great dangers based on possessive reification of bourgeois atomized individualism. The dangers surface when institutionally sanctified science stakes out a claim to being the pursuit of the *whole truth* in the form of *certainty*, while the apparently weaker and certainly more modest Dickens escapes them. S2 science likes to think of itself as inductive. However, as a planet's map is regulated and shaped by the grid of cartographic projection, so is any system based on a deductive principle, for example the Aristotelian excluded middle or the Hegelian necessarily resolved dialectical contradiction. And this principle is also a kind of meta-reflection about, or methodic key of, the system that is in its (obviously circular) turn founded on and deduced from it. When a philosophical or scientific system exfoliates in the form of a finite series of propositions *culminating* in a rounded-off certainty, its form is finally not too different from the 19th-Century "well-made," illusionistic stage play; no wonder, for they both flow out of the Positivist orientation, where decay of value leads to despair. The Lady with the Camelias and the Laws of Thermodynamics are sisters under the skin: both show a beautifully necessary death.

However, the situational or situated hypotheses of both fiction and today's science are constructed or taken up for (different but converging) purposes co-defined by the interests of the subject constructors. Each has necessarily a formal closure — involving among other matters a beginning, middle, and end, as Aristotle's *Poetics* phrased it for plays — but many are open-ended, and their multiplicity is always such. Further, a longer work (a theory or a novel) is articulated like a chain or a tapeworm, in a series of delimited events which stand together (this is a literal translation of Aristotle's *systasis pragmaton*) as segments to result in a final unity. When, in several branches of quantum mechanics, and similarly in catastrophe theory, a whole battery of models is regularly used, and "no one thinks that one of these is the whole truth, and they may be mutually inconsistent" (Hacking 37), the differences to Balzac's *Comédie humaine* series or the set (the macrotext) constituted by the poetry of — say — Byron, Shelley, and Keats remain obvious, but the overall formal similarities as cognitive pursuits do not deserve to be slighted either.

3.22. On Porous Boundaries between Form and Actuality

Here I wish to briefly introduce a second factor for evaluating cognitive artefacts, profoundly epistemological and enduringly political, which I would call *internal richness allowing for a richer bite on reality (intensity)*. I could buttress this with a number of authorities, say Spinoza, but to remain economical I shall do so basing myself on Michael Polanyi mentioned above, who calls it

"levels of reality": an entity is more real when it has "the capacity to reveal itself in unexpected ways in the future", with a greater range of interesting consequences. This means the entity's significance is not exhausted by our conception so far, it has untapped depth and a power of manifesting itself in yet unthought ways. A problem or a person have greater depth or a deeper reality than a cobblestone, even though the stone is sensually more tangible in its Sartrean *facticité*, the sheer being there (Polanyi, cited in Grene 219-20). A mineral's tangibility, its meaning or uses, is more publicly or collectively anchored, thus subject to much slower change. To the contrary, significant art is as a rule much richer, in the above double direction of inward and outward: the three-dimensional solidity Berenson described in Giotto's bodies as felt by the beholder *exists for us* more intensely than most perceptions in our everyday World Zero (223), and so does the psychological three-dimensionality Tolstoy's 1812 soldiers.

But I would claim for the best science often the same status, usually called the "fruitfulness" of a theory. However I would divorce this from the (surely basic) predictability. Important insights in both conceptual-cum-mathematical theories are much more fruitful than usually predicted. In Grene's words, "It is not predictability, but *un*predictability that distinguishes the more powerful & most interesting discoveries..." (221).

4. The Poet's Politics as Semantic Positioning: Thinking with Sense

Poetry and fiction always imply a reader standing for a collective audience, ideally his whole community (this is foregrounded in plays). It was the accepted norm not only for ancient Greece but also for Leibniz or Kant that such creations in words reach some transmittable understanding of human relationships, so that Baumgarten called his foundational *Aesthetica* of 1750 the" science of sensual cognition." For many poets it then became logical and ethical to think of translating such cognition into politics as concrete human relationships of power.

How may artistic creators *professionally* participate in politics? This was no problem for poets in the era of Homer, Alcman or Solon but became complicated when political units grew larger as well as more obviously based on divergent class interests and the attendant oppression of a major part of the body politic. Plato clearly felt poets as worrisome competitors to his philosopher-king and advocated banning all those who didn't fit his norms. There followed many painful historical experiences, including in Europe the splendid but today not often applicable attempts of the Romantics either to participate directly as bards of revolt, albeit by means of altered language — see for ex. Hugo — or to turn away totally from politics — which means leaving it to the *status quo*. we may today follow the lead by Rancière (but cf. on poetry as cognition also Spivak 115ff.) and posit something like the following:

The poet-creator can — in fact, cannot but — participate in politics though I shall argue with Rancière and then Fortini that he can do so only paradoxically. This means, literally, that she is one who doubts the reigning commonplace opinions, one who *swerves* from them by infringing old usages and meanings and, implicitly or explicitly (this is a matter of situation and personal temperament), creating new ones. Epicure's ruling principle of the atoms swerving from the automatically straight path may stand as the great ancestor of all creative methods and possibilities (cf. Suvin,"Living"). As a place of truthful thinking — not sundered from feeling — verse and prose poetry have often filled in the voids left by institutionalized science and institutionalized philosophy, and of course by most institutionalized politics. These use generalization, irremediably wedded to concepts, which cannot fully account for the relationship between people and nature, the finite and the infinite. Poetic creation sutures conceptual thought to justification from recalled immediate sensual, bodily experience which is, thus far, much more difficult to falsify or disbelieve. Centrally, this is bound up with topological (one could metaphorically call this also "metaphorical") cognizing. In the stronger case of the so-called absolute metaphor — one that

cannot be fully and economically replaced by existing conceptual propositions — I propose that such topological imagination has *equal cognitive dignity* to the conceptual one (cf. Blumenberg, beginning with 10-13).

Franco Fortini, one of the 20th Century's best Italian critics of poetry — himself a significant poet — defined "the literary use of language" as a homology to "a formalised [that is, conscious and conscientious] use of life that is the end and goal of communism" (*Saggi* 184). This homology (to my mind, part annunciation-cum-denunciation and part prefiguration) necessarily transgresses the hegemonic discourse, in our times sadly clichétised; I would call it cognition constituted by memorable pleasure. It remembers the past, disputes the present, "use of life into which we are forced by alienation of labour" (*Confini* 35), and carries their lessons into projects of possible lives reaching for the future. What he means by form can be briefly characterised as an interpretation of the world by means of what constellations of words both say and leave unsaid but suggest and give clues to, always suffused by firm if dynamic values shared by a societal class. It is therefore diametrically opposed to the prevailing obscurantist use of "form" as a demolition of meaning and sense, as a ghetto instead of a lookout (in lyrics most often by looking inwards): "form is a tension to incorporate, confront, and elaborate what is outside the frontiers of poetic form" (*Confini* 38). This constitutes a horizon for poetry that is both clearly political and also as it were cosmological, for its greatness and misery deal — as he spelled it out in an interview — with human "resistence to death by means of a systematic project and therefore as a self-education of which artworks are exemplars" (De Filippis 160)

This creative attitude, however, immediately leads to an intimately personal paradox of living in politics as an anti-politics. All that is commonly taken for politics — for us, say, since the effects of the antifascist wars, such as peace and the Welfare State, have been largely or fully expunged — is alien and inimical, where not actively threatening and deadly. Where personality is valued for and as consumption in view of profit, and carefully shaped phrases or images pertain increasingly to mendacious and death-inducing advertising (cf Suvin "Death"), art has to upset. Our immediate major poetic ancestor, Rimbaud — in a filiation beginning with many Romantics and Baudelaire — was led to exasperation at having to reconcile his deep hatred of the bourgeoisie and existing society with the irrefragable fact of having to breathe and experience within it:

> ….industrialists, rulers, senates:
>
> Die quick! Power, justice, history: down with you!
>
> This is owed to us. Blood! Blood! Golden flame!
>
> All to war, to vengeance, to terror…. Enough!
>
> - - - - - -
>
> …I'm there, I'm still there. ("Qu'est-ce pour nous…," 113)

The obverse of this aporia (the *assez* vs. *j'y suis toujours*) is Thomas More's great coinage of utopia: the radically different good place which is in our sensual experience not here, but must be cognized — today, on pain of extinction. What is not here, Bloch's Yet Unknown, is almost always first adumbrated in art and fiction, most economically in verse poetry. From many constituents of the good place, I shall here focus, as does Rancière (92-93), on *freedom* — Wordsworth's "Dear Liberty" (*Prelude* l. 3) which translates the French revolutionary term of *liberté chérie* — that then enables security, order, creativity, and so on. The strategic insight here seems to be that the method of great modern poetry from Rimbaud on (and prose too, in somewhat differing ways), if you wish *its epistemic principle, is freedom as possibility of things being otherwise;* this is to be understood by means of the interaction of what is being said and how it is being said, a consubstantiality of theme and stance. Poetic freedom is a historically situated, political experience of the sensual, which is necessarily also polemical swerve from and against the *doxa*, in favour of fresh cognition.

The common-sense, brainwashed understanding includes much that has in the past truly been liberating politics but has retained only a few impoverished slogans from its heroic ages (the liberal, communist, and antifascist ones) when it directly flowed out of human senses. Therefore, "creators have to retrace the line of passage that unites words and things" (Rancière). And in prose, I would add, the line that unites human figures and spacetimes by means of plot and of metaphoric clusters (see Suvin, "On Metaphoricity" and "Heavenly").

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