# METAMORPHOSES OF SCIENCE FICTION

## On the Poetics and History of a Literary Genre

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utopian and the anti-utopian horizons. All imaginable intelligent life, including ours, can be organized only more or less perfectly. In that sense, utopia (and anti-utopia) is first of all a literary genre; but finally, as Bloch notes, it is a horizon within which humanity is irrevocably collocated. My main point is that without a full, that is, literal and literary, analysis we are bound to oversimplify and miscontrue those horizons. For any sane understanding of utopia, the simple basic fact to start from remains that it is not hypostasis of the Holy Ghost, the *Zeitgeist*, or whatnot, but a literary genre induced from a set of man-made books within a man-made history.

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# SF and the Novum

*0.* It is often thought that the concept of a literary genre (here SF) can be found directly in the works investigated, that the scholar in such a genre has no need to turn to literary theory since he/she will find the concepts in the texts themselves. True, the concept of SF is in a way inherent in the literary objects—the scholar does not invent it out of whole cloth—but its specific nature and the limits of its use can be grasped only by employing theoretical methods. The concept of SF cannot be extracted intuitively or empirically from the work called thus. Positivistic critics often attempt to do so; unfortunately, the concept at which they arrive is then primitive, subjective, and unstable. In order to determine it more pertinently and delimit it more precisely, it is necessary to educe and formulate the *differentia specifica* of the SF narration. My axiomatic premise in this chapter is that *SF is distinguished by the narrative dominance or hegemony of a fictional "novum" (novelty, innovation) validated by cognitive logic*.

## 1. The Novum and Cognition

*1.1* What is the common denominator the presence of which is logically necessary and which has to be hegemonic in a narration in order that we may call it an SF narration? In other words, how can the proper domain of SF be determined, what is the theoretical axis of such a determining? The answering is clouded by the present wave of irrationalism, engendered by the deep structures of the irrational capitalist way of life which has reduced the dominant forms of rationality itself (quantification, reification, exchange value, and so on) to something narrow, dogmatic, and sterile inasmuch as they are the forms of reasoning of the dominant or of the dominated classes. Nonetheless, I do not see any tenable intrinsic determination of SF which would not hinge on the category of the *novum*, to borrow (and slightly

adapt) a term from the best possible source, Ernst Bloch.[1] A novum of cognitive innovation is a totalizing phenomenon or relationship deviating from the author's and implied reader's norm of reality. Now, no doubt, each and every poetic metaphor is a novum, while modern prose fiction has made new insights into man its rallying cry. However, though valid SF has deep affinities with poetry and innovative realistic fiction, its novelty is "totalizing" in the sense that it entails a change of the whole universe of the tale, or at least of crucially important aspects thereof (and that it is therefore a means by which the whole tale can be analytically grasped). As a consequence, the essential tension of SF is one between the readers, representing a certain number of types of Man of our times, and the encompassing and at least equipollent Unknown or Other introduced by the novum. This tension in turn estranges the empirical norm of the implied reader (more about this later). Clearly the novum is a mediating category whose explicative potency springs from its rare bridging of literary and extraliterary, fictional and empirical, formal and ideological domains, in brief from its unalienable historicity. Conversely, this makes it impossible to give a static definition of it, since it is always codetermined by the unique, not to be anticipated situationality and processuality that it is supposed to designate and illuminate. But it is possible to distinguish various dimensions of the novum. Quantitatively, the postulated innovation can be of quite different degrees of magnitude, running from the minimum of one discrete new "invention" (gadget, technique, phenomenon, relationship) to the maximum of a setting (spatiotemporal locus), agent (main character or characters), and/or relations basically new and unknown in the author's environment. (Tangentially I might say that this environment is always identifiable from the text's historical semantics, always bound to a particular time, place, and sociolinguistic norm, so that what would have been utopian or technological SF in a given epoch is not necessarily such in another—except when read as a product of earlier history; in other words, the novum can help us understand just how is SF a *historical* genre.)

*1.2* The novum is postulated on and validated by the post-

1. In particular: Ernst Bloch, *Das Prinzip Hoffnung* (Bibliography II) and *Experimentum Mundi* (Frankfurt, 1976).



Cartesian and post-Baconian scientific *method*. This does not mean that the novelty is primarily a matter of scientific facts or even hypotheses; and insofar as the opponents of the old popularizing Verne-to-Gernsback orthodoxy protest against such a narrow conception of SF they are quite right. But they go too far in denying that what differentiates SF from the "supernatural" literary genres (mythical tales, fairy tales, and so on, as well as horror and/or heroic fantasy in the narrow sense) is the presence of scientific cognition as the sign or correlative of a method (way, approach, atmosphere, sensibility) identical to that of a modern philosophy of science.[2] Science in this wider sense of methodically systematic cognition cannot be disjoined from the SF innovation, in spite of fashionable currents in SF criticism of the last 15 years—though it should conversely be clear that a proper analysis of SF cannot focus on its ostensible scientific *content* or scientific data. Indeed, a very useful distinction between "naturalistic" fiction, fantasy, and SF, drawn by Robert M. Philmus, is that naturalistic fiction does not require scientific explanation, fantasy does not allow it, and SF both requires and allows it.[3]

Thus, if the novum is the necessary condition of SF (differentiating it from naturalistic fiction),[4] the validation of the

2. Beyond the discussion in chapter 1, see also my essays " 'Utopian' and 'Scientific'," *The Minnesota Review* N.S. No. 6 (1976), and "Science and Marxism, Scientism and Marquit," ibidem No. 10 (1978).

3. The distinction is to be found in Robert M. Philmus, "Science Fiction: From its Beginning to 1870," in Barron, ed. (Bibliography I), pp. 5–6. My defining of SF is indebted to some earlier discussions. In particular, I find myself in some respects near to Kingsley Amis's definition in chapter 1 of *New Maps of Hell* (Bibliography I)—with the significant difference of trying to go beyond his evasive basing of the SF innovation "in science or technology, or pseudo-science or pseudo-technology" (p. 18).

4. Works avowedly written within a nonrealistic mode, principally allegory (but also whimsy, satire, and lying tall tale or Münchhauseniade), constitute a category for which the question of whether they possess a novum cannot even be posed, because they do not use the new worlds, agents, or relationships as coherent albeit provisional ends, but as *immediately transitive* and *narratively nonautonomous* means for *direct* and *sustained* reference to the author's empirical world and some system of belief in it. The question whether an allegory is SF, and vice versa, is, strictly speaking, meaningless, but for classifying purposes has to be answered in the negative. This means that—except for exceptions and grey areas—most of the works of Kafka or Borges cannot be claimed for SF: though I would argue that *In the Penal Colony* and "The Library of Babel" would be among the exceptions. But admittedly, much more work remains to be done toward the theory of modern allegory in order to render more precise the terms underlined in this note (see also section 2.2. of this chapter).

novelty by scientifically methodical cognition into which the reader is inexorably led is the *sufficient* condition for SF. Though such cognition obviously cannot, in a work of verbal fiction, be empirically tested either in the laboratory or by observation in nature, it *can* be methodically developed against the background of a body of already existing cognitions, or at the very least as a "mental experiment" following accepted scientific, that is, cognitive, logic. Of the two, the second alternative—the intrinsic, culturally acquired cognitive logic—seems theoretically the crucial one to me. Though I would be hard put to cite an SF tale the novelty in which is not in fact continuous with or at least analogous to existing scientific cognitions, I would be disposed to accept theoretically a faint possibility of a fictional novum that would at least seem to be based on quite new, imaginary cognitions, beyond all real possibilities known or dreamt of in the author's empirical reality. (My doubts here are not so much theoretical as psychological, for I do not see how anybody could imagine something not even dreamt of by anyone else before; but then I do not believe in individualistic originality.) But besides the "real" possibilities there exist also the much stricter—though also much wider—limits of "ideal" possibility, meaning any conceptual or thinkable possibility the premises and/or consequences of which are not internally contradictory.[5] Only in "hard" or near-future SF does the tale's thesis have to conform to a "real possibility"—to that which is possible in the author's reality and/or according to the scientific paradigm of his culture. On the contrary, the thesis of *any* SF tale has to conform to an "ideal possibility," as defined above. Any tale based on a metaphysical wish-dream—for example omnipotence—is "ideally impossible" as a coherent narration (can an omnipotent being create a stone it will not be able to lift? and so forth), according to the cognitive logic that human beings have acquired in their culture from the beginnings to the present day. It is intrinsically or by definition impossible for SF to acknowledge any metaphysical agency, in the literal sense of an agency going beyond *physis* (nature). Whenever it does so, it is not SF, but a metaphysical or (to translate the Greek into Latin) a supernatural fantasy-tale.

5. I have been stimulated by the discussion of Ivan Foht, "Slika čovjeka i kosmosa," *Radio Beograd: Tréci program* (Spring 1974): 523–60.



*1.3.* Thus science is the encompassing horizon of SF, its "initiating and dynamizing motivation."[6] I reemphasize that this does not mean that SF is "scientific fiction" in the literal, crass, or popularizing sense of gadgetry-cum-utopia/dystopia. Indeed, a number of important clarifications ought immediately to be attached: I shall mention three. A first clarification is that "horizon" is not identical to "ideology." Our view of reality or conceptual horizon is, willy-nilly, determined by the fact that our existence is based on the application of science(s), and I do not believe we can imaginatively go beyond such a horizon; a machineless Arcadia is today simply a microcosm with zero-degree industrialization and a lore standing in for zero-degree science. On the other hand, within a scientific paradigm and horizon, ideologies can be and are either fully supportive of this one and only imaginable state of affairs, or fully opposed to it, or anything in between. Thus, anti-scientific SF is just as much within the scientific horizon (namely a misguided reaction to repressive —capitalist or bureaucratic—abuse of science) as, say, literary utopia and anti-utopia both are within the perfectibilist horizon. The so-called speculative fiction (for example, Ballard's) clearly began as and has mostly remained an ideological inversion of "hard" SF. Though the credibility of SF does not depend on the particular scientific rationale in any tale, the significance of the entire fictive situation of a tale ultimately depends on the fact that "the reality that it displaces, and thereby interprets"[7] is interpretable only within the scientific or cognitive horizon.

A second clarification is that *sciences humaines* or historical-cultural sciences like anthropology-ethnology, sociology, or linguistics (that is, the mainly nonmathematical sciences) are equally based on such scientific methods as: the necessity and possibility of explicit, coherent, and immanent or nonsupernatural explanation of realities; Occam's razor; methodical doubt; hypothesis-construction; falsifiable physical or imaginary (thought) experi-

6. Jan Trzynadlowski, "Próba poetyki science fiction," in K. Budzyk, ed., *Z teorii i historii literatury* (Warsaw, 1963), p. 272; see also Stanislaw Lem (Bibliography I); Rafail Nudel'man, "Conversation in a Railway Compartment" (Bibliography VI); and Joanna Russ, "Towards an Aesthetic of Science Fiction," in R. D. Mullen and Darko Suvin, eds., *Science-Fiction Studies . . . 1973–1975* (Bibliography I), pp. 8–15.

7. Robert M. Philmus (Bibliography III A), p. 20.

ments; dialectical causality and statistical probability; progressively more embracing cognitive paradigms; *et sim.* These "soft sciences" can therefore most probably better serve as a basis for SF than the "hard" natural sciences; and they *have* in fact been the basis of all better works in SF—partly through the characteristic subterfuge of cybernetics, the science in which hard nature and soft humanities fuse. A third clarification, finally, is that science has since Marx and Einstein been an open-ended corpus of knowledge, so that all imaginable new corpuses which do not contravene the philosophical basis of the scientific method in the author's times (for example, the simulsequentialist physics in Le Guin's *The Dispossessed*) can play the role of scientific validation in SF.

*1.4.* It may be objected to this that a look into bookstores will show that a good proportion of what is sold as SF is constituted by tales of more or less supernatural or occult fantasy. However, this is the result of an ideological and commercial habit of lumping together SF (fiction whose novum *is* cognitively validated) and fantastic narrative. A misshapen subgenre born of such mingling is that of "science-fantasy," extending from Poe through Merritt to Bradbury, about which I can only repeat the even more pathological level—internalized in fictional creation —this has led to tales that incongruously mingle science-fictional and fantastic narrative. A misshappen subgenre born of such mingling is that of "science-fantasy," extending from Poe through Meritt to Bradbury, about which I can only repeat the strictures of the late James Blish, who noted how in it "plausibility is specifically invoked for most of the story, but may be cast aside in patches at the author's whim and according to no visible system or principle," in "a blind and grateful *abandonment* of the life of the mind."[8] In supernatural fantasy proper, the supposed novelty rejects cognitive logic and claims for itself a higher "occult" logic—whether Christian, a-Christian and indeed atheistic (as is the case of H. P. Lovecraft), or, most usually, an

8. William Atheling, Jr., *More Issues at Hand* (Bibliography I), pp. 98 and 104. A further warning in the same chapter that the hybrid of SF and detective tale leads—as I would say, because of the incompatibility between the detective tale's contract of informative closure with the reader and the manifold surprises inherent in the SF novum system—to a trivial lower common denominator of the resulting tale has so far been developed only by Rafail Nudel'man (see note 20).



opportunistic blend of both, openly shown in the more self-confident nineteenth century by something like Marie Corelli's "Electric Christianity" (the enormous popularity of which is echoed right down to C. S. Lewis). The consistent supernatural fantasy tale—one which does not employ only a single irruption of the supernatural into everyday normality, as in Gogol's *Nose* or Balzac's *Peau de Chagrin*, but develops the phenomenology of the supernatural at the expense of the tension with everyday norm—is usually (in England from Bulwer-Lytton on) a proto-Fascist revulsion against modern civilization, materialist rationalism, and such. It is organized around an ideology unchecked by any cognition, so that its narrative logic is simply overt ideology plus Freudian erotic patterns. If SF exists at all, this is not it.

One of the troubles with distinctions in genre theory is, of course, that literary history is full of "limit-cases." Let us briefly examine one of considerable importance, Stevenson's *The Strange Case of Dr. Jekyll and Mr. Hyde*. Despite my respect for Stevenson's literary craftsmanship, I would contend that he is cheating in terms of his basic narrative logic. On the one hand, his moral allegory of good and evil takes bodily form with the help of a chemical concoction. On the other, the transmogrification Jekyll-Hyde becomes not only unrepeatable because the concoction had unknown impurities, but Hyde also begins "returning" without any chemical stimulus, by force of desire and habit. This unclear oscillation between science and fantasy, where science is used for a partial justification or added alibi for those readers who would no longer be disposed to swallow a straightforward fantasy or moral allegory, is to my mind the reason for the elaborate, clever, but finally not satisfying exercise in detection from various points of view—which in naturalistic fashion masks but does not explain the fuzziness at the narrative nucleus. This marginal SF is therefore, to my mind, an early example of "science fantasy." Its force does not stem from any cognitive logic, but rather from Jekyll's anguish over his loss of control and from the impact of the hidden but clearly underlying moral allegory. The latter is particularly relevant to Victorian bourgeois repressions of the nonutilitarian or nonofficial aspects of life and it also holds forth an unsubstantiated promise that the oscillation between SF and fantasy does not matter since we are dealing with full-blown allegory anyway (see note 4).

## 2. Narrative Consequences of the Novum

*2.1.* The presence of the novum as the determining factor of an SF narration is crucially testable in its explanatory power for the basic narrative strategies in this genre. First of all, the dominance or hegemony of the cognitive novelty means that an SF narration is not only a tale that includes this or that SF element or aspect: utopian strivings or dystopian terrors of some kind, as in the majority of world literature; moral allegories or transcendental visions of other worlds, better or worse from our own, as in much literature down to Milton, Swedenborg, and countless imitators; use of new technological gadgets, as in many James Bond tales; and so on. An SF narration is a fiction in which the SF element or aspect, the novum, is hegemonic, that is, so central and significant that it determines the whole narrative logic—or at least the overriding narrative logic—regardless of any impurities that might be present.[9]

*2.2.* Furthermore, the novum intensifies and radicalizes that movement across the boundary of a semantic field (defined by the author's cultural norm) which always constitutes the fictional event.[10] In "naturalistic" fiction this boundary is iconic and isomorphic: the transgression of the cultural norm stands for a transgression of the cultural norm; Mme. Bovary's adultery stands for adultery. In SF, or at least in its determining events, it is not iconic but allomorphic: a transgression of the cultural norm is signified by the transgression of a more than merely

9. A major objection against so-called thematic studies of SF elements and aspects, from J. O. Bailey's *Pilgrims Through Space and Time* (Bibliography I)—in 1947 no doubt a pioneering work—to present-day atomistic and positivistic SF critics, is that these studies ignore the determining feature of what they are studying: the narrative logic of a fictional tale. Correlatively, they tend to become boring catalogs of raisins picked out of the narrative cake, and completely desiccated in the process. This does not mean that critical discussions of, say, artificial satellites, biological mutations, or new sexual mores in SF (or other fiction) cannot be, for some strictly limited purposes, found useful; and for such purposes we should probably know where the mutations, satellites, or sex patterns first appeared and how they spread. But we should not be lured by this very peripheral necessity into annexing any and every tale with a new gadget or psychic procedure into SF, as, for example, Bailey did with Wilkie Collins's *Moonstone* and Thomas Hardy's *Two on a Tower*. SF scholarship that does this is sawing off the branch on which it is sitting: for if these and such works are SF just like, say, Wells's *Invisible Man*, then in fact there is no such thing as SF.

10. Jurij Lotman, *The Structure of the Artistic Text*, Michigan Slavic Contributions No. 7 (Ann Arbor, 1977), pp. 229 ff.



cultural, of an ontological, norm, by an ontic change in the character/agent's reality either because of his displacement in space and/or time or because the reality itself changes around him. I do not know a better characterization than to say that the novelty makes for the SF narration's specific *ontolytic* effect and properties. Or perhaps—since, as differentiated from fantasy tale or mythological tale, SF does not posit another superordinated and "more real" reality but an alternative on the same ontological level as the author's empirical reality—one should say that the necessary correlate of the novum is an *alternate reality*, one that possesses a *different historical time* corresponding to different human relationships and sociocultural norms actualized by the narration. This new reality overtly or tacitly presupposes the existence of the author's empirical reality, since it can be gauged and understood only as the empirical reality modified in such-and-such ways. Though I have argued that SF is not—by definition cannot be—an orthodox allegory with any one-to-one correspondence of its elements to elements in the author's reality, its specific modality of existence is a feedback oscillation that moves now from the author's and implied reader's norm of reality to the narratively actualized novum in order to understand the plot-events, and now back from those novelties to the author's reality, in order to see it afresh from the new perspective gained. This oscillation, called estrangement by Shklovsky and Brecht, is no doubt a consequence of every poetic, dramatic, scientific, in brief *semantic* novum. However, its second pole is in SF a narrative reality sufficiently autonomous and intransitive to be explored at length as to its own properties and the human relationships it implies. (For though mutants or Martians, ants or intelligent nautiloids can be used as signifiers, they can only signify human relationships, given that we cannot—at least so far—imagine other ones.)

*2.3.* The oscillation between the author's "zero world" and the new reality induces the narrative necessity of a means of reality displacement. As far as I can see, there are two such devices: a *voyage* to a new locus, and a *catalyzer* transforming the author's environment to a new locus; examples for the two could be Wells's *Time Machine* and *Invisible Man*. The first case seems better suited to a sudden and the second to a gradual introduction of a new reality; no doubt, all kinds of contaminations and twists on these two means are thinkable. When the *in medias res* tech-

nique is used in any particular SF tale, the means of displacement can be told in a retrospective or they can, apparently, totally disappear (more easily in a space/time displacement: our hero is simply a native of elsewhere/elsewhen). However, this semblance conceals the presence of displacement in a zero-form, usually as a convention tacitly extrapolated from earlier stories; the history of the genre is the missing link that made possible, for example, tales in another space/time without any textual reference to that of the author (as in most good SF novels of the last 20 years).

*2.4.* The concept of novum illuminates also the historical vicissitudes of justifying the reality displacement. In naturalistic tales the voyage can only start in the author's space, and the account of the new reality has to arrive back into that space so that its telling may be naturalistically plausible. However, it would then be logically necessary that the account of such a sensational voyage to a new reality should in its turn become a catalyzer, inducing changes in the author's and reader's environment. Since this in fact, as the reader knows, has not happened, naturalistic SF has had to invent a number of lightning-rods to dissipate such expectations. Verne pretended not to notice its necessity, while Wells in some of his tales pretended we all knew it already—ploys which today make those narrations sound as if they assumed an alternate time-stream in which Nemo or the Invisible Man had in fact (as different from the reader's time-stream) been the scourge of the seas or of southern England. Many earlier writers went through other extraordinary contortions to satisfy naturalistic plausibility, usually a contamination of the "manuscript in a bottle" device (the news of a voyage to the Moon just having arrived by volcanic eruption from it and just being served piping hot to you, dear reader) and the "lost invention" device (a one-shot novelty confined to the experience of a few people and unable to extend beyond them because of the loss of the invention), as in *The First Men in the Moon*. But the most plausible variable for manipulation was *time*, inasmuch as setting the tale in the future immediately dispensed with any need for empirical plausibility. The shift of SF from space into future time is not simply due to an exhaustion of white spots on the *mappa mundi*. Rather, it is due to an interaction of two factors: on the one hand, such a narrative convenience, stunted within strict positivist ideology; on the other, the strong tendency toward temporal extrapolation inherent in life based on a capitalist economy, with its salaries, profits, and progressive ideals always expected in a future clock-time.



Thus space was a fully plausible locus for SF only before the capitalist way of life, from very early tales about the happy or unhappy valley or island—known to almost all tribal and ancient societies—to More and Swift. An Earthly Paradise or Cockayne tale, a humanist dialogue and satire, all happen in a literary or imaginative space not subject to positivistic plausibility. But a triumphant bourgeoisie introduces an epoch-making epistemological break into human imagination, by which linear or clock-time becomes the space of human development because it is the space of capitalist industrial production. The spatial dominions of even the largest feudal landowner are finite; capital, the new historical form of property—that shaper of human existences and relationships—has in principle no limits in extrapolated time. Through a powerful system of mediations infusing the whole human existence, time becomes finally the equivalent of money and thus of all things. The positivist ideology followed capitalist practice in eventually perfecting an image of time rigidified "into an exactly delimited, quantifiable continuum filled with quantifiable 'things' . . . : in short, [time] becomes space."[11] Imaginative times and spaces are now resolved into "positive," quantified ones. All existential alternatives, for better or worse, shift into such a spatialized future, which now becomes the vast ocean on whose other shore the alternative island is to be situated. Positivism shunts SF into anticipation, a form more activistic than the spatial *exemplum* because achievable in the implied reader's own space. When the industrial revolution becomes divorced from the democratic one—a divorce which is the

11. Georg Lukács, *History and Class Consciousness* (London, 1971), p. 90. The whole seminal essay "Reification and the Consciousness of the Proletariat," developing insights from Marx's *Capital*, is to be consulted; also Georg Simmel, *Philosophie des Geldes* (Munich, 1930), Werner Sombart, *Der Moderne Kapitalismus*, I–II/1 (Munich, 1917), and Lewis Mumford (Bibliography IV A). I have tried to apply Lukács's ideas on quantification and reification in my essays "On Individualist World View in Drama," *Zagadnienia rodzajów literackih* 9, No. 1 (1966), and "Beckett's Purgatory of the Individual," *Tulane Drama Review* 2, No. 4 (1967), and in the historical part of this book, especially in the essay on Verne as the bard of movement in such a quantified space.

fundamental political event of the bourgeois epoch—activism becomes exasperated and leads to the demands for another epistemological and practical break, signalled by Blake's Jerusalem in England's green and pleasant land and the cosmic "passionate attraction" of Fourier's phalansteries. Such imaginative energies converge in Marx, the great prefigurator of the imaginative shift still being consummated in our times. Rather than identify it as "postindustrial" (a fairly reified and vague term), I would tend to call the new *epistemé*—since it is in our century marked by names such as Einstein, Picasso, Eisenstein, and Brecht—one of spatiotemporal covariance, simulsequentialism, or humanist relativism and estrangement: in brief, one of alternate historical realities. I would argue that in such a historical perspective, all significant SF from Zamyatin, Čapek, and Lem to Le Guin, Disch, and Delany is neither simply spatial, as in Lucian or More, nor simply temporal, as in all the followers of *The Time Machine* and *When the Sleeper Wakes*, but spatiotemporal in a number of very interesting ways, all of which approximate a reinvention and putting to new uses of the precapitalist and preindividualistic analogic times and spaces of the human imagination.

The main difference with such medieval and premedieval conceptions could perhaps be expressed in terms of destiny. As Lotman remarks, literary functions can be divided into two groups, the active forces and the obstacles.[12] Right down to Swift (in SF and in literature in general), the obstacles are inhuman and superhuman forces, at best to be ethically questioned by the tragic poet and hero but not to be materially influenced. Whether they are called gods, God, Destiny, Nature, or even History is relatively less important than the fact that they are transcendental, empirically unchangeable. The great enlightening deed of the bourgeoisie was to reduce the universe to individuals, which also meant identifying the obstacles with men, who are reachable and perhaps removable by other individual men. I would imagine that a truly modern literature (and SF), corresponding to our epoch, its *praxis* and *epistemé*, would correspond to the third dialectical term to follow on such fatalistic collectivism and humanistic individualism. We have learned that the institutional and imaginative products of men—states, corporations, religions, wars, and the like—can very well become a destiny for each of us: tragedy is again possible in the twentieth century (as the October Revolution and Second World War, Dubček and Allende can teach us), though it is the tragedy of blindness—of failed historical possibilities—rather than of lucidity. The obstacles are superindividual but not inhuman; they have the grandeur of the ancient Destiny but they can be overcome by other men banding together for the purpose. Men are the historical destiny of man; the synthesis in this historical triad is a *humanistic collectivism*.

12. Lotman, p. 239.



*2.5.* The alternate reality logically necessitated by and proceeding from the narrative kernel of the novum can only function in the oscillating feedback with the author's reality suggested in 2.2 because it is as a whole—or because some of its focal relationships are—an *analogy* to that empirical reality. However fantastic (in the sense of empirically unverifiable) the characters or worlds described, always *de nobis fabula narratur*. Though SF is not orthodox allegory, it transmits aesthetic information in direct proportion to its relevance and aesthetic quality. The alternative is for it to operate in semantic emptiness spiced with melodramatic sensationalism as a compensatory satisfaction, in a runaway feedback system with corrupt audience taste instead of with cognition of tendencies in the social practice of human relationships.[13] The clear dominance of that kitsch alternative in the present historical period should not, however, prevent us from discussing the significant models of SF, its horizons and yardsticks.

In my second chapter I considered heuristic models of SF under the headings of (1) extrapolation, which starts from a cognitive hypothesis incarnated in the nucleus of the tale and directly extrapolates it into the future, and (2) analogy, in which

13. "The information gained, concerning a hypothesis, may perhaps be thought of as the ratio of the a posteriori to the a priori probabilities (strictly the logarithm of this ratio)"—Colin Cherry, *On Human Communication* (Cambridge, MA, 1966), p. 63. Thus, the information gained from a work of literature is a logarithmic (that is, alas, much diminished) ratio of the existential possibilities imaginable and understandable by an ideal reader after reading, to those imaginable and understandable before the reading. The information is a function of the rearrangement of the reader's understanding of human relationships. "In general, where we speak of information, we should use the word form," argues René Thom in his impressive *Stabilité structurelle et morphogénèse* (Reading, MA, 1972), p. 133.

cognition derives only from the final import or message of the tale, and may perhaps be only indirectly applicable to pressing problems in the author's environment. This analysis is, so far as it goes, useful in challenging the defining of all SF as extrapolation (to which the title of a critical journal devoted to SF still witnesses); but it does not go far enough. In that chapter I also noted that any futurological function SF might have was strictly secondary, and that stressing it was dangerous since it tended to press upon SF the role of a popularizer of the reigning ideology of the day (technocratic, psionic, utopian, dystopian, hip, or whatever). Thus, although extrapolation was historically a convention of much SF (as analyzed at length in the second section of this book), pure extrapolation is flat, and the pretense at it masks in all significant cases the employment of other methods. Theoretical defining of any SF as extrapolation should therefore be decently and deeply buried.[14] It seems clear that SF is material for futurology (if at all) only in the very restricted sense of reflecting on the author's own historical period and the possibilities inherent in it: Bellamy's and Morris's different socialist twenty-first centuries use the anticipation device so effectively because they are about incipient collective human relationships in the 1880s as they (differently) saw them, while *1984* or *2001* are about incipient collective human relationships in 1948 or 1967 as certain aspects of or elements within Orwell's or Kubrick's mind saw them.

Any significant SF text is thus always to be read as an analogy, somewhere between a vague symbol and a precisely aimed parable, while extrapolative SF in any futurological sense was (and is) only a delusion of technocratic ideology—no doubt extremely important for the historical understanding of a given period of SF, but theoretically untenable. For extrapolation itself as a scientific procedure (and not pure arithmetic formalization) is predicated upon a strict (or, if you wish, crude) analogy between the points from and to which the extrapolating is carried out: *extrapolation is a one-dimensional, scientific limit-case of analogy*. As Peirce put it, a scientific "effect" (or "phenomenon") "consists in

14. Wells knew this already in 1906, see note 19 in my chapter 10 and the self-criticism it refers to. On the discussion of extrapolative, analogical, and other models for SF see also Philmus, note 3, and Fredric Jameson, "Generic Discontinuities in SF" and "World Reduction in Le Guin," both in Mullen and Suvin, eds., pp. 28–39 and 251–60.



the fact that when an experimentalist shall come to *act* ACCORDING TO A CERTAIN SCHEME THAT HE HAS IN MIND [caps but not italics mine], then will something else happen, and shatter the doubts of sceptics, like the celestial fire upon the altar of Elijah."[15] Specifically, the SF "future-story" has been well identified by Raymond Williams as

> the finding and materialization of a *formula* about society. A particular pattern is abstracted, from the sum of social experience, and a society is created from this pattern . . . the "future" device (usually only a device, for nearly always it is obviously contemporary society that is being written about . . .) removes the ordinary tension between the selected pattern and normal observation.[16]

Clearly, neither is the future a quantitatively measurable space nor will the ensemble of human relationships stand still for one or more generations in order for a single element (or a very few elements) to be extrapolated against an unchanging background—which is the common invalidating premise of futurological as well as of openly fictional extrapolation. The future is always constituted both by a multiple crisscrossing of developments and—in human affairs—by intentions, desires, and beliefs rather than only by quantifiable facts. It is Peirce's scheme or Williams's pattern rather than the end-point of a line.

Furthermore, anticipating the future of human societies and relationships is a pursuit that shows up the impossibility of using the orthodox—absolute or scientistic—philosophy of natural science as the model for human sciences. It is a pursuit which shows, first, that all science (including natural sciences) is and always has been a historical category, and second, that natural or "objective" and human (cultural) or "subjective" sciences are ultimately to be thought of as a unity: "Natural science will in time include the science of man as the science of man will include natural science. There will be *one* science"—remarked an acute observer already in the first part of the nineteenth century.[17] As

15. Charles Sanders Peirce, "What Pragmatism Is," *Collected Papers*, ed. Charles Hartshorne and Paul Weiss (Cambridge, MA, 1934), para. 425, p. 284.

16. Raymond Williams, *The Long Revolution* (Harmondsworth, 1971), p. 307.

17. Karl Marx, "Private Property and Communism," *Writings of the Young Marx on Philosophy and Society*, ed. Loyd D. Easton and Kurt H. Guddat (Garden City, NY, 1967), p. 312.

a corollary, the valid SF form or subgenre of *anticipation*—tales located in the historical future of the author's society—should be strictly differentiated from the technocratic ideology of extrapolation on the one hand and the literary device of extrapolation on the other. Extrapolating one feature or possibility of the author's environment may be a legitimate literary device of hyperbolization equally in anticipation-tales, other SF (for example, that located in space and not in the future), or indeed in a number of other genres such as satire. However, the cognitive value of all SF, including anticipation-tales, is to be found in its analogical reference to the author's present rather than in predictions, discrete or global. Science-fictional cognition is based on an aesthetic hypothesis akin to the proceedings of satire or pastoral rather than those of futurology or political programs.

The problem in constructing useful models for SF is, then, one of differentiating *within* analogy. If every SF tale is some kind of analogy—and I think that *The Time Machine* or *The Iron Heel*, Heinlein's *Future History* or Pohl-Kornbluth's *Space Merchants*, even Stapledon's *Last and First Men* or Yefremov's *Andromeda*, are primarily fairly clear analogies to processes incubating in their author's epoch—then just what is in each case the degree and the kind of its anamorphic distortion, its "version" of reality? How is their implied reader supposed to respond to and deal with a narrative reality that is an inverted, reverted, converted, everted, averted, subverted Other to his certainties of Self and Norm—certainties which, as Hegel says, are clouded by their very illusion of evidence and proximity, *bekannt* but not *erkannt*?[18] A partially illuminating answer to this group of questions would also clear up why some of these versions pretend—sometimes with conviction, most often by pure convention—to be situated in an extrapolated future.

*2.6.* A final narrative consequence of the novum is that it shapes the SF "chronotope" (or chronotopes?). A chronotope is "the essential connection of temporal and spatial relationships, as shaped in literary art." In it, "the characteristics of time are unfolded in space, while space is given meaning and measured by

18. Georg Wilhelm Friedrich Hegel, *Phänomenologie des Geistes. Sämtliche Werke* (Leipzig, 1949), 2:28.



time"[19]—and both are blended into a particular plot structure. Now the novelty in SF can be either a new locus, or an agent (character) with new powers transforming the old locus, or a blend of both. The connection between the active forces (the protagonist[s]) and the obstacles to be reduced (the locus) determines the homogeneity of a tale. If the protagonists and the loci necessarily imply and richly reinforce each other—as do Wells's Time Traveller and the sequence of his devolutionary visions of the future, or Le Guin's Shevek, his physics, and the binary planetary sociopolitics and psychology of *The Dispossessed*—then we have a tale of a higher quality than the wish-dreams of, say, a Van Vogt, where all the obstacles are fake since the protagonist is a superman enforcing his will both on enemies and supposed allies.

As for plot structures, if SF is organized around an irreversible and significant change in its world and agents, then a simple addition of adventures, where *plus ça change plus c'est la même chose*, is an abuse of SF for purposes of trivial sensationalism, which degrades the genre to a simpler and less organized plot structure. Nudelman has to my mind brilliantly demonstrated the incompatibility of the plot structure of the cyclical detective tale, the conclusion of which returns the universe "to its equilibrium and order," the linear structures of the additive adventure tale, and the spiral structures of valid SF, the plot of which alters the universe of the tale.[20] On the contrary, the easiest narrative way of driving a significant change home is to have the hero or heroine grow into it (or better, to have the hero or heroine define it for the reader by growing with it), and much valid SF uses the plot structure of the "education novel," with its initially naive protagonist who by degrees arrives at some understanding of the novum for her/himself and for the readers.

As these two examples and other discussions in this chapter may indicate, it should be possible to engage in analytic evaluations of SF that would be neither purely ideological nor purely formalistic, by starting with the necessities of literary structure brought about by some variant of a novum.

19. M. Bakhtin, *Voprosy literatury i èstetiki* (Moscow, 1975), pp. 234–35.

20. Rafail Nudel'man, "An Approach to the Structure of Le Guin's SF," in Mullen and Suvin, eds., pp. 240–50.

## 3. The Novum and History

*3.1* The novum as a creative, and especially as an aesthetic, category is not be fully or even centrally explained by such formal aspects as innovation, surprise, reshaping, or estrangement, important and indispensable though these aspects or factors are.[21] The new is always a *historical* category since it is always determined by historical forces which both bring it about in social practice (including art) and make for new semantic meanings that crystallize the novum in human consciousnesses (see 1.1 and 2.2) An analysis of SF is necessarily faced with the question of why and how was the newness recognizable as newness at the moment it appeared, what ways of understanding, horizons, and interests were implicit in the novum and required for it. The novelty is sometimes directly but sometimes in very complex ways (for example, not merely as reflection but also as prefiguration or negation) related to such new historical forces and patterns—in the final instance, to possibilities of qualitative discontinuity in the development of human relationships. An aesthetic novum is either a translation of historical cognition and ethics *into* form, or (in our age perhaps more often) a creation of historical cognition and ethics *as* form.

*3.2.* Probably the most important consequence of an understanding of SF as a symbolic system centered on a novum which is to be cognitively validated within the narrative reality of the tale and its interaction with reader expectations is that the novelty has to be convincingly explained in concrete, even if imaginary, terms, that is, in terms of the *specific* time, place, agents, and cosmic and social totality of each tale. This means that, in principle, SF has to be judged, like most naturalistic or "realistic" fiction and quite unlike horror fantasy, by the density and richness of objects and agents described in the microcosm of the text. Another way of interpreting the Philmus distinction from 1.2. would be to set up a further Hegelian triad, where the thesis would be naturalistic fiction, which has an empirically validated effect of reality, the antithesis would be supernatural

21. See, for development of estrangement and similar notions after the Formalists and Brecht, Hans Robert Jauss, *Literaturgeschichte als Provokation* (Frankfurt, 1970), as well as critiques of and improvements on Jauss handily asembled in Peter Uwe Hohendahl, ed., *Sozialgeschichte und Wirkungsästhetik* (Frankfurt, 1974).



genres, which lack such an effect, and the synthesis would be SF, in which the effect or reality is validated by a cognitive innovation. Obversely, the particular essential novum of any SF tale must in its turn be judged by how much new insight into imaginary but coherent and this-worldly, that is, *historical*, relationships it affords and could afford.

*3.3* In view of this doubly historical character of the SF novum—born in history and judged in history—this novum has to be differentiated not only according to its degree of magnitude and of cognitive validation (see 1.1. and 1.2.), but also according to its *degree of relevance*. What is *possible* should be differentiated not only from what is already real but also from what is equally empirically unreal but *necessary*. Not all possible novelties will be equally relevant, or of equally lasting relevance, from the point of view of, first, human development, and second, a positive human development. Obviously, this categorization implies, first, that there are some lawlike tendencies in men's social and cosmic history, and second, that we can today (if we are intelligent and lucky enough) judge these tendencies as parts of a spectrum that runs from positive to negative. I subscribe to both these propositions and will not argue them here—partly for rhetorical convenience, but mainly because I cannot think of any halfway significant SF narration that does not in some way subscribe to them in its narrative practice (whatever the author's private theories may be).

Thus a novum can be both superficially sweeping and cognitively validated as not impossible, and yet of very limited or brief relevance. Its relationship to a relevant novelty will be the same as the relationship of the yearly pseudo-novum of "new and improved" (when not "revolutionary") car models or clothing fashions to a really radical novelty such as a social revolution and change of scientific paradigm making, say, for life-enhancing transport or dressing. The pseudo-novum will not have the vitality of a tree, an animal species, or a belief but, to quote Bergson, the explosive, spurting *élan* of a howitzer shell exploding into successively smaller fragments, or "of an immense fireworks, which continually emits further firesparks from its midst."[22] In brief, a novum is fake unless it in some way partici-

22. Henri Bergson, *L'évolution créatrice* (Paris, 1907), pp. 99 and 270; see also Bloch's

pates in and partakes of what Bloch called the "front-line of historical process"—which for him (and for me) as a Marxist means a process intimately concerned with strivings for a dealienation of men and their social life. Capricious contingencies, consequent upon market competition and tied to copyright or patent law, have a built-in limit and taboo defined precisely by the untouchable sanctity of competition (a palpable ideology in much SF). Of brief and narrow relevance, particular rather than general (*kath'hekaston* rather than *kath'holon*, as Aristotle puts it in *Poetics*), they make for a superficial change rather than for a true novelty that deals with or makes for human relationships so qualitatively different from those dominant in the author's reality that they cannot be translated back to them merely by a change of costume. All space operas can be translated back into the Social Darwinism of the Westerns and similar adventure-tales by substituting colts for ray-guns and Indians for the slimy monsters of Betelgeuse. Most novels by Asimov can be returned to their detective-story model by a slightly more complex system of substitutions, by which, for example, Second Foundation came from Poe's Purloined Letter.

*3.4.* Since freedom is the possibility of something new and truly different coming about, "the possibility of making it different,"[23] the distinction between a true and fake novum is, interestingly enough, not only a key to aesthetic quality in SF but also to its ethico-political liberating qualities. As always in art, ethical pathos and effect or communal (political) relevance are the obverse of aesthetic consistency. They fuse in the realization that, finally, the only consistent novelty is one that constitutes an open-ended system "which possesses its novum continually both in itself and before itself; as befits the unfinished state of the world, nowhere determined by any transcendental supraworldly formula."[24] This connects with my argument in 1.3. about valida-

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comment on him in *Das Prinzip Hoffnung*, p. 231—my whole argument in 3.1.–3.4. is fundamentally indebted to Bloch. See on originality within a capitalist market also Bertolt Brecht, *Gesammelte Werke* (Frankfurt, 1973), 1–20, passim—for example, 15:199–200—and Theodor W. Adorno, *Aesthetische Theorie* (Frankfurt, 1970), pp. 257 ff.

23. Bloch, *Experimentum*, p. 139; see also Antonio Gramsci, *Il Materialismo storico e la filosofia di Benedetto Croce* (Torino, 1948), quoted from *Selections from the Prison Notebooks*, ed. Quintin Hoare and Geoffrey Nowell Smith (New York, 1971), p. 360, to whom I am also much indebted.

24. Bloch, *Experimentum*, p. 143.



tion for SF being based on science as an open-ended corpus of knowledge, which argument can now be seen to be ultimately and solidly anchored to the bedrock fact that there is no end to history, and in particular that we and our ideologies are not the end-product history has been laboring for from the time of the first saber-toothed tigers and Mesopotamian city-states. It follows that SF will be the more significant and truly relevant the more clearly it eschews final solutions, be they the static utopia of the Plato-More model, the more fashionable static dystopia of the Huxley-Orwell model, or any similar metamorphosis of the *Apocalypse* (let us remember that the end of time in the *Apocalypse* encompasses not only the ultimate chaos but also the ultimate divine order).[25]

*3.5.* An imaginary history each time to be reimagined afresh in its human significance and values may perhaps borrow some narrative patterns from mythological tales, but the "novelty" of gods validated by unexplained supersciences at the beck of the Cambridge School's or von Däniken's supermortals is a pseudo-novelty, old meat rehashed with a new sauce. SF's analogical historicity may or may not be mythomorphic, but—as I have argued in chapter 2—it cannot be mythopoetic in any sense except the most trivial one of possessing "a vast sweep" or "a sense of wonder": another superannuated slogan of much SF criticism due for a deserved retirement into the same limbo as extrapolation. For myth is reenactment, eternal return, and the opposite of a creative human freedom.

True, even after one subtracts the more or less supernatural tales (science-fantasy, sword-and-sorcery, and the like,) 90 percent of SF will have plot structures escaping from history into Westerns, additive sensationalist adventures, or rehashes of mythography. However, as Kant said, a thousand years of any given state of affairs do not make that state necessarily right. Rather, reasons for the wrongness should be sought.

*3.6* Thus this analysis has finally arrived at the point where history, in the guise of analogical historicity, is found to be the

25. I have attempted to expand on this in my "The Open-Ended Parables of Stanislaw Lem and *Solaris*," afterword to Stanislaw Lem, *Solaris* (New York, 1976); it is incorporated into a parallel to the orthodox Soviet and American SF models in my "Stanislaw Lem und das mitteleuropäische soziale Bewusstsein der Science Fiction," in Werner Berthel, ed., *Insel Almanach auf das Jahr 1976: Stanislaw Lem* (Frankfurt, 1976).

next and crucial step in the understanding of SF: story is always also history, and SF is always also a certain type of imaginative historical tale (which could be usefully compared and contrasted to the historical novel). All the epistemological, ideological, and narrative implications and correlatives of the novum lead to the conclusion that significant SF is in fact a specifically roundabout way of commenting on the author's collective context—often resulting in a surprisingly concrete and sharp-sighted comment at that. Even where SF suggests—sometimes strongly—a flight from that context, this is an optical illusion and epistemological trick. The escape is, in all such significant SF, one to a better vantage point from which to comprehend the human relations around the author. It is an escape from constrictive old norms into a different and alternative timestream, a device for historical estrangement, and an at least initial readiness for new norms of reality, for the novum of dealienating human history. I believe that the critic, in order to understand it properly, will have to integrate sociohistorical into formal knowledge, diachrony into synchrony. History has not ended with the "post-industrial" society: as Bloch said, Judgment Day is also Genesis, and Genesis is every day.

# II

# HISTORY