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FICTION A FIELD OF GROWTH:
Science at Heart, Action at a Distance

Joseph McElroy

Genes and the Earth, if I may speak for myself. The very small, the very large.

Speaking of both in his autobiography (*Speak, Memory,* 1966), Nabokov finds "in the dimensional scale of the world a kind of delicate meeting-place between imagination and knowledge, a point, arrived at by diminishing large things and enlarging small ones, that is intrinsically artistic."

Granting the difference, I have tried to keep it *and* to bridge it. The vacuum in front pushing from behind. And so I look for help in Italo Calvino's story (in *t zero,* 1967) about a cell growing and dividing; about what it might be like to *feel* this; or, in this projection into expansion and division that goes on inside us with strange constancy (mitosis, meiosis), also what happens between lovers—so the tale's quizzical equation might be a slighter fantasy than I thought.

If I turn to Primo Levi's novel *The Periodic Table* (1975), I find metaphor extended to associate the writer's professional work as a chemist with his painful history as a survivor-descendant. The uncertainty of hypothesis . . . the active clarity represented by the table of elements . . . which with tranquil discontinuity becomes the table of contents in the mind of the naturally philosophical narrator. He tells us that chemists are like other adults confronted by success and failure—"kill the white whale or wreck the ship," Levi says—and the analysis of the structure of asbestos, say, turns him also into that imaginer of Altamira "who painted an antelope on the rock wall so that the next day's hunt would be lucky."

In these two Italian fictionists, I am alert to things surprising side by side, free valence and recombinings—and a firmness of sense and science. Which I'm grateful for, because our minds are an endless (not always circular) string of fractions and fantasies—tropisms indulgent and unbalanced.

Yet our great narrator William James defended mere intimations as a living part of what we know, vague-seeming, but preliminal, beckoning, and urgent. One of mine is spatial—that my experience, or what is in me, or "what I have it in me to do," somehow equals isolated entities curiously near one another. You may have your own words for this discontinuity. I feel it extending outward and inward like a growth unforeseen yet aimed.

My books are about communal life and its germinal solitudes, women and men at odds growing together and apart. They are not "about science"—not even the novel *Plus,* which in a sense that I will explain *is* a sort of groping science but is not really science fiction. But my fictions have been felt to be touched by science and technology in their idioms and horizons—and are forced out into intelligible form in a time when these odd and sometimes remote systems have threatened us with self-knowledge.

Science is a *part* of life, but like other expressly conscious activities it is often work that tries to become conscious of how it is a part of life. It is critically abstract and plasmically particular, and in the common places of my nuclear fancy holds abstract and concrete in one tension clear and unblended (to adapt Mendel). It has a haphazard, earned history of question and heroism and resistance. And in the past generation, perhaps because of the burden of complexity this subject matter would impose (like argument) upon extended narrative, the poets have been more apt to work with it than the novelists, though of late some of our good traditional novels vaguely allude to it in such metaphorical titles as *Magnetic Fields* and *Continental Drift.*

Are we reborn in particular neural places in each other?

Thirty years ago a friend showed me his poem about a radio telescope. A little *like* a telescope, accurate and resonant, its maker's words translated the device and the field in which its powers would be objectively applied. His poem was fairly unusual at the time. I believe the subject matter was thought to be top-heavily intellectual (though surely to say so was to make an intellectual distinction)—difficult, daunting, not about real life, "abstract," "intimidating" (that code word kin to "experimental")—*perhaps* redeemable by homespun metaphor and perhaps to be defended against with satire—but linked with what we call science fiction.

In 1990 during an international writers' congress (the theme post-Communist utopia), I listened to another young American poet explain who Werner Heisenberg was, before she read her poem meditating certain human analogies to the German physicist's so-called Uncertainty Principle, a hypothesis or law that, though it is about ambiguity, is actually most definite and certain (like Relativity) in what it concludes: that you can't pinpoint both the position and the momentum of a subatomic particle at the same time. Maybe that's all it says. Which is a lot, probably. But sitting there in postmodern Belgrade I thought we had come quite a distance in thirty years, and I recalled the radio telescope poem, and a range of recent American poetry by Howard Nemerov, James Merrill, and so many others using science within the limits of the contemplative lyric; listened to this American poem as if I were (in Proust's view of the reader) the hero of it, hearing it along with other people's words, like translators in my ears. And I heard also (like a current in a field feeling in return the magnetic effect it itself has created) the familiar question swarming cluster-like—how the observer affects the thing observed and so can't ever see it as it is. An issue of great interest in this century, during which imaginative writing has once more come round to science, and more interestingly than at any time since the sixteenth and seventeenth centuries, when science, which is many kinds of thinking, was called natural philosophy.

But the daily *work* of science looks less like trope and turning point and dream and divining than like observation and description. Which in turn reduce the idiom of meaning, if not its scope. Even the grander ideas —Special Relativity—measure infinitesimal increments in local frames apparently nonradiant, nonmetaphorical. If we turn from physics to biology (which often lately has seemed more welcoming to my own interests) we're looking at painstaking resumés of conveniently quick-reproducing fruit flies and trick work with a pollen brush to check secret activities of funguses that may tell us how sex got started. This is tedious. Did you sweat a weekly four-hour lab at college? Have you taken water samples aboard an oceanographic vessel? It's not all like a Cousteau special. Einstein had to take time out to learn tensor calculus in order to figure displacements due to relationships in motion that, between us, I just go ahead and imagine.

Who is to say how a scientist thinks? For Einstein the drive toward simplifying the premises of a theory is like a passion for comprehension to be found in children. I remember glaciers "calving" near Greenland—which may have inspired the meteorologist Alfred Wegener to imagine that continents move, though his long-resisted theory of 1912 may have begun with a look at how

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fifteen-, sixteen-, and seventeen-year-olds into eighteen-year-olds and over!"

As if—despite Freud's discovery of infantile sexuality—people at every age did not have a real and ever-changing sexual component to their lives!

I go over the above only to point out that there is a real, material, and tangible industry of pornographic publishing in this country that not only has its values and standards (far more conservative today than they were, say, in the 1960s, but also has quite an astonishing set of rich and fascinating classics (e.g., Michael Perkins's *Evil Companions,* 1967; Alexander Trocchi's *Thongs* [the Olympia Press edition of 1965, not the currently available Masquerade edition that has been posthumously editorially rewritten]; Dirk Vandon's *I Want It All*; Pat Califia's *Macho Slut,* 1989; and Alice Joanou's extraordinarily stylish *Cannibal Flower,* 1991)—although these and other such works are rarely discussed.

Despite their possible aesthetic failures or successes, both my pornographic novels, the published *Equinox* (*Tides of Lust*) and the unpublished *Hogg,* were aesthetically serious undertakings—not in spite of their pornographic aspects but because of them. (One of the self-imposed constraints on the writing of *Equinox* was that I would write none of it unless I was actually in a state of sexual arousal, even for the nonsexual parts—an undertaking I'd advise only for the young and/or obsessive.) And though I respect Auden's warning about the possibly deleterious relation between pornography and art, I still disagree with it. But I am aware that one possible reason for my disagreement is that, despite the autobiographical accuracy I've striven for in fiction, the overwhelming majority of the situations of arousal I've experienced in the last thirty-five years have been relaxed, friendly (when other people were involved), pleasurable—and largely free of guilt. The vast majority of my sexual partners have basically enjoyed themselves in their various sexual encounters with me—as have I with them. And for me this forms the context that all new situations of arousal enter, even when, from time to time, in specifically pornographic texts, the material is violent or disturbing or generally unpleasant.

But this brings us to the other topic in this discussion: censorship. I would not think to use a term like censorship for the treatment of say, *Hogg,* if only because at various times I've experienced the political niggling and pussyfooting in the name of the commercial that is how a good deal of real censorship is exercised in this country (the editor who rejected a 1967 novel of mine not because he was bothered by the fact that my main character was black, but because he was sure his readers would be—readers who, incidentally, once the book was published a year on, kept the book in print for the next twenty-five years; the print run on a 1985 book, third in a series, slashed in half because the topic was AIDS; and the manuscript of the fourth book in the series returned to me by the same publisher, unread). An editor's rejecting a book because he or she didn't like it—whether the dislike was aesthetic, political, or sexual—doesn't, in a free economy, fulfill my criteria for censorship.

Censorship—for me—requires that someone become deeply involved in deciding whether *other* people will be offended, or dislike it, or be outraged by a work—usually to the point of wholly suppressing his or her own response. (The editor who slashed my print run had gone out of his way, three months before, to tell me that the book was among the most powerful he had ever read in his life, and had left him, in his own words, dazed—however hyperbolic the praise may have been.) It's that repression of the self which creates the dangerous and deleterious field of projections, out of control and wholly away from any possibility of pursuing real profit or even common sense. In this country, the commercial terror of the experimental and the controversial has the same psychological structure—and finally much the same effect as the hardcore censorship we are so ready to condemn when it happens abroad.

Having said that, I think that in sexual terms, those people who share my basic context for arousal are precisely those who are inclined to say: let other people do what they want, whether it involves pornography or perversion or whatever—as long as no one is hurt or made miserable. We feel this way because we are under the impression that such a context is pretty much what characterizes the context of pleasure for everyone. Similarly, I suspect that those people for whom a significant proportion of situations of arousal have led to pain, distress, guilt, and unhappiness are the people who are likely to question seriously the advisability of such a liberal attitude toward the arousal of others. But that—as I said—is a question of context, and it may never be resolved until the context itself is interrogated, articulated, and understood in its own right.

I think it is terribly important to have a genre—or genre-set—in which it is possible to say *anything*: true, untrue, or at any level of fantasy, metaphor, violence, or simple outrageousness. And I would rather such a genre-set be the genre-set of art than that it be the associated texts of religion, say (consider the hell-fire sermon in Chapter III of *Portrait of the Artist as a Young Man* as an example of a religious genre repeatedly presented to young children from the nineteenth century on, if you want an example of what I consider immoral religious license), or those that compose journalism (consider the allegations of supernatural happenings and the like that are the hallmark of the "popular" tabloid press, *The National Enquirer, The Sun, The Star*). But there are social forces aplenty—and often the same forces that would take away the freedom of speech we vouchsafe for the arts—that, as they would deny that freedom *to* the arts, would redistribute it to religion and reportage—genres whose relation to that troublesome concept "truth" I, at any rate, am fairly glad to see a bit more heavily scrutinized at the more respected levels than, certainly, they are on the lowest and least sophisticated planes. It is not only the freedom to suppress what others say that is wanted, but the freedom to lie as well when necessary—because such lies are assumed somehow to be for "everyone's good."

But we cannot forget those planes. They are always there to grow, to take over, and to swamp what I am perfectly content to call more responsible attitudes in religious and reportorial practices.

Art seems the best genre-set in which to allow total freedom of expression (the full range, as Kenneth Koch put it, of "wishes, lies, and dreams") *because* that genre-set is the symbol-making engine for the culture.

If artists who wish to criticize or even shame the country for national acts they consider immoral are not allowed to set up installations in which American flags are burned or otherwise desecrated, then it is precisely the resonance, significance, and luminescence of the flag waving for the country's palpable accomplishment which are reduced by the proscription. (A symbol that is allowed to function only in one context, and that an uplifting one, invariably becomes trite—if not kitsch.) And necessary limitations on the aesthetic presentation of what the body may undergo, either in pleasure or in suffering, immediately and *a priori* restrict what the mind is allowed to contemplate: for nothing encourages the practice of political torture and sabotages the pursuit of happiness more than blanket restrictions on speaking, in precise, articulate, and graphic terms about either. ABR

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and in a style broad enough to include wide ranges of emotions to which he alludes but never actually refers—affection, for instance. It is precisely these aspects of his writing, aspects of it as art and not as philosophy, that set de Sade apart from other so-called pornographers, and head and shoulders above all of them save Petronius and Rabelais. De Sade's achievement is that, more than is the case with other writers, the style contradicts the contents. The style retains, with scarcely a blemish, an eighteenth-century coolness, wit, and philosophical flourish (which is not the same as a philosophy), while dealing with rapes, decapitations, poisonings and endless bouts of lust, incest, and sexual abandon. If his diction makes liberal use of such words as "fuck," "shit," and "lubricity," his style, with grace and even a touch of *tendresse,* merely shrugs and smiles with an amused curiosity. What is more, no harm is done. As in *Candide,* an ether of unreality casts a refreshing vapor over the most violent scenes.

This glow of unreality, this hint of another world beyond the ordinary one, provides, as Le Brun suggests, the hypnosis of de Sade's attraction. For surrealists, those poets of an unchained subconscious (like Le Brun herself), the attraction means a voluptuous freedom. Others may find in it much more of evil, and may easily agree with Simone de Beauvoir, who saw de Sade as a brilliant satirist of a mechanical nature and an equally mechanical human malice. The beauty of Le Brun's book, despite its flaws and a sometimes stilted translation, lies in its drawing the modern reader's attention to what are after all quite complementary Sadean interests. In his novels at least, de Sade seems to have killed both for aesthetic pleasure and for aesthetic principles. ABR

Paul Oppenheimer's latest books are The Birth of the Modern Mind: Self, Consciousness, and the Invention of the Sonnet *(Oxford) and* Till Eulenspiegel: His Adventures *(Garland).*

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Atlantic coastlines fit together. Einstein notes that a failure early on to see an equivalence between heat and mechanical energy delayed the formulation of a theory of heat—and that to see this equivalence required a creative act—seeing an unexpected likeness between things.

This is not quite the warmly circulating metaphor and homology to be found in Thomas's *Lives of a Cell*—a beach functioning as a "ganglion," Alpine mountaineers using "amoeboid configurations of elongated ant nests as pointers to the south"—but it points me toward a functional likeness between the sweep of generalization and the bridge of metaphor. Recalling Heisenberg's "What we observe is not nature itself, but nature exposed to our method of questioning," I think, But if our consciousness thus makes the Nature we think we see, did our consciousness arise from this largely inanimate Nature? Once upon a time, did Heisenberg have a feeling about our limits in observantly knowing many things—people for instance—acting on each other at a distance, say? Did he have intuitions about how we appear to others because of where they are in time—and was *this* one way he came to his insight about particles he could not see—so he had to rely on what Einstein called "free creations of the human mind"?

Now, if the difference between real science and what metaphor-masters and storytellers might dabble in is blurred in some fellowship of the imagination, a quite unhumble version of that dividing attitude of the so-called Two Cultures was waiting in place for fiction writers at the end of World War II. For science (discovery) and technology (invention)—magically abstruse, proliferating codes and poisons (which we now know are also codes)—seemed to become one composite engine and computing system in a fair variety of American fiction writing.

A range of responses to being inside yet trying to be outside these systems

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comes to mind. Kurt Vonnegut could play with wave theory and light here and there in *The Sirens of Titan,* which nonetheless reduced to good-natured silliness some of the familiar science fiction models. Recently, "Can't fight 'em, join 'em and/or *then* (like) fight 'em" is how I read so-called cyberpunk fiction. Inside the rock cradle of pop culture the culture coming apart, words adopted as if they meant something or as if, well, they really didn't: a sci-tech diction gets into the rap and before we know it energy, space, "FORCE," (like its graffiti'd manifestation in the subway) turn into metajargon junk *implying* a knowledge of these words and where they come from. A hectic humor philosophically banal. A dwindling from Burroughs, who unlike many other original writers is much more intelligent than his work. Or I'm missing something, or I get bored with clowning clones and copulating computers and wonder what will happen to word-thought when "virtual reality" lights our living rooms with computer-generated stereo environments, feeding back to me my own correction that these are useful on the other hand in architectural simulations and medical research, as I recall Veblen's view that technology is neutral and, in a reasonable society, available for human uses.

John Barth has always done his homework and in *Giles Goat-Boy* (1966) colossally complicates his germ text into a design-send-up of System America. Systems interlocked with the life of the writer's mind trying to defend itself inside its own fabrications feed back even parody pastoral (the complex [complexly] *simple*!), and ongoing artificial intelligence inventing a thousand and one genetic conceits guards against dread and sometimes seriousness with a comedy computed and overflowing.

Overloaded, the urban/totalitarian/crash environment becomes in the English nightmarist J. G. Ballard a "terrifying structure" of fragments externalizing our nervous systems. "Neuronic interval," "neuronic totem"—seductively the metaphors open osmotic tensions alive in Ballard's people. But the work so participates in the engineered dread or pre-stressed doom it recreates that often it will not think out a clear position. The surrealism is too easily released or spun off by what Julian Jaynes, in *The Origin of Consciousness in the Breakdown of the Bicameral Mind,* calls "rational splendor" that surrounds science in the popular mind, some "substitute for authorization" parallel with the revival of possession religions in South America and psychotropic drugs in native American religions or body-mind quasi-religious quasi-science. Which brings back a passionate letter from somebody a few years ago asking me to join an organization and a publication devoted to the marriage of science/technology and mysticism. Thomas Pynchon's lurking chemistry in *Gravity's Rainbow* circulated a more contemplative humor through that Dickensian progress and population, his system at least an obverse of the Nature I felt we are part of.

System invents an extension of ourselves dividing the labor. But if our own bodily systems are far softer and complexer than an acoustic engineer's formula for the frequency in cycles of a tone when you blow across the open top of a bottle, likewise our also organic unease at being fastened to these audible labyrinths our heads both comprehend and are run by. Still, if we make it and turn it loose, something other than what supposedly we are, then this is a creative translation to be understood. We are between ourselves and it, two parts of some shifting equation—the system ajar with not so much gaps as all-over extensions: so that what is meant by Field emerged for me, a medium in which forces might be transmitted and actions might be effected at a distance.

In Nicholas Mosley's *Hopeful Monsters* (1990) one person thinks toward another: "But if you are angry with me, cannot I, even from hundreds of miles away, make you better?" Now, in this very ambitious love story about nothing less than planetary survival and the development of science in this century and the possibilities of survival-thinking through analogy, this is not simply some invoked intimacy of memory any more than it's Nietzsche on women acting on you at a distance. True, a science *aura* glows here to light this perception shared between two brave, philosophical adventurers, one a trained physicist and biologist whose lab work is not only shown but meditated on. But as with many of Mosley's analogies between what happens to two distant particles and two people, or, say, two particles that, once or once upon a time together, are always connected, his "concept" suggests connection through forces transmitted not through a medium like water, air, or the discredited ether, but more like the magnetism of Maxwell and the geometry around large bodies in Einsteinian relations—forces that can be explained. An experiment growing always out of the odyssean lives of the lovers, whose separations (for metaphors are generative separations) vector the growth of their ruminant and argued thought. As if the mutation that helps them live through the hazardous environment of Europe in the thirties continues in the work of their feelings, the experimental evolution of their knowing, their words groping toward a sense of more than metaphorical connections between what goes on in the atom and in the sun and in groups of organisms and in areas of the brain we may not yet have needed.

No fiction writer I know has reached more obsessionally or vulnerably into the dense language of the genework than Richard Powers. Linear quest and multiple looping question, *The Gold Bug Variations* (1991) plays out the givens of our work and chances upon a field of musically interpenetrating informations. Here is the tragic heroism of a life almost lost in the wilderness of science and personality; here are the reciprocal pattern-making and -seeking, the laboratory of syntaxes coding for the story of all the genome's stories. Do its profuse metaphorical correspondences leave me listening unsurely for a difference between the dominant authorial signature and the fugue existing beyond it? I ask only because this colleague has already given so much and gone so far.

Years ago—years before I wrote the book—I imagined a brain bereft of one body growing another. The growing of the actual body prepared and paralleled the growing and healing of a necessary consciousness—in turn alive and embodied in its words—its reacquisition of language, and the groping unforeseeable gathering of words hearing other words—living *with* this growth and functioning not only as medium and sign but as really limbs. So the *words* have a body and are not apart from the biology.

Now, growing new limbs in *Plus* yet only implicitly a heart—a field heart like a locus more than a center or substance which is dispersed, as if the organ had become the circulation it pumps—I came upon a writer who made me feel at home though not necessarily able to translate my sense of the process into formula. Going on dream, instinct, drawing board analysis, and memories of microscopes, I read Paul Weiss's book on embryology *Principles of Development.* It confirmed some old images of mine to do with dispersed field-growth. For cells owe their election, Weiss concludes, not to their lineage, to their being derived from a particular parcel of an undivided egg, but rather to the operation of forces to which they become subject during their development. This organization is like a field that exists in the materials through which it acts.

With all gratitude to readers who found their own metaphors in *Plus,* I saw it as *non*metaphorical. The growth of a body, the development of a functional language, not as the parts of a metaphor but as what I will call Homology—functional correspondence, as, e.g., between the flippers of the seal and the arms of a human, or DNA in chloroplasts and in bacteria. If language is *like* a body, the growth of each here is one growth. So that as a growth of knowing, maybe *Plus is* science.

We think not only to grow but to save what has been acquired, to pass it on. To the Earth. Outward from us. Are we reborn in particular neural places in each other? Is growing an expansion? If we are as abstract in our fragile, elastic skin as patterns from physics or embryology, our expansions and contractions may think their way into consciousness from, say, the lungs—as Proust's mental rhythms and space-time sentence structures record his breathing. I walked inside a giant heart at a Chicago science show and looked around and thought (what I years later read somewhere) that maybe after all our emotions *are* affected by this moving muscle.

Is growth a contracting, a gathering? Events run together in patterns that give us hope—in life and in fiction. Convergence from time to time maps a narrative of mine called *Women and Men.* While writing it, I came upon a study of coincidence by the Austrian biologist Paul Kammerer. He inferred, almost the way particle physicists infer action or presence from adjacent effects, that a different track or principle operated in events parallel to our familiar (though also mysterious) causality; Kammerer called it convergence. Like Hitler, Einstein, Wittgenstein, and other figures of its era (an entertaining but fashionable device of Mosley's), Kammerer makes a cameo appearance in *Hopeful Monsters.* A gentle, witty, personal man, he is for Cambridge biologists in the late twenties an unspeakably suspect proponent of what is called Lamarckism—the theory that acquired characteristics can be genetically inherited.

Mosley never cites Kammerer's minor and modest book on coincidence. But its theme is constant for Mosley's two lovers—the "hopeful monsters" of the title. This phrase was used by the German-American geneticist Richard Goldschmidt, who postulated certain mutant organisms, which because of chromosomal alterations already in place might survive and reproduce in a disastrous new global environment. Our gift to destroy; our gift to improvise and save. Interestingly, Mosley's lovers will not have their own children. However, as in an extended family they are usefully involved with children, who, like other people, come to them or intersect strangely.

But things running together may disappear. Like experience. Like evolved vision. Here and there in Mosley's novel lurk hints of evidence for some version, perhaps, of the inheritance of acquired characteristics. Or is it hopeful imagination? Like George Bernard Shaw (who was a believer), Mosley dwells on the curiously defensive opposition to the idea—as if Mendel's stubborn genes were an affront to our belief in progress—in work, in will—in parenting—even in love.

Mosley's novel, with all its mysterious reflexiveness of content, stands in the English linear tradition. Its long view and gripping scenes keep us as clear about ideas as about people. Powers's genetics novel plunges us into the text of a mind, the density of a venture that builds its chaoses closer to the reader's own—and is American.

We have new notions of Life's wholeness and order that contain the abstractions that model them. Borders cross, though between the dancer and the dance the line is mysteriously less blurred. I am reminded by Tom LeClair (*The Art of Excess,* 1989) that the Austrian biologist von Bertalanffy, who might have been a character in *Hopeful Monsters,* argued that his own models of wholeness explained systems of life better than did the earlier mechanistic ones. And the movement he was part of by midcentury was drawing non-Euclidean math, relativity theory, anthropology, cybernetics, biology, meteorology, and ecology into a rethinking of how and what we know, including what were called social studies when I was in grade school but are now social sciences.

It was parts of a total ecology I sought to imply in *Women and Men.* In one of its openings couples about to be transmitted to a space community will arrive not as two people but, unexpectedly, as one. Mosley in *Hopeful Monsters* leans back into older metaphor in his image of two lovers meeting on a tight rope and passing through one another. The invisible we live with. A field of growth possibilities for this always embryonic reader, who is the hero of what he reads and is alive outside it and deep within it. ABR

The author, most recently, of Women and Men *and* The Letter Left to Me, *Joseph McElroy is completing a new novel and a volume of novellas and short stories.*