METAMETASCIENCE

TOWARDS

RECONCILIATION

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I. Contextualizing Reconciliation

The ideal of consilience – the inductive concurrence of seemingly disparate ways of thinking into a single, unified, all-encompassing intellectual system – or more simply put, “unified learning,” – has been largely set aside since the rise of the industrial age and the championing of the industrious, better-be it individualized mind of the enlightenment. The Catholic Church was the last western world-dominant institution to actively perpetuate and work according to the rubric of a unified field of knowledge. Our thoughts and everything else were under God and indivisible: our ethics and our physics alike were the immaterial idea-stuff of the divine, benevolently nudging us towards some golden age. But, with grandiloquence and a hell-uv'-a-lot of liberation rhetoric, reason found itself in a dominant position within the hegemony of intellectual and academic discourse. A preference for reasonability and individuation dictated that we divide up our disciplines, that we allow each scholar to pursue a particular field of interest without insisting that that field collapse into theology in its most fundamental stages. It was either that our humanist logics were not sophisticated enough to synthesize all of the natural or conceptual oppositions flourishing at that time, or that we had come to disregard the ironically rigorous project of righteousness and truth just enough to see a use and a truth of a differing quality in dividing up our conceptual schemes. The separation of church and state might be seen as a manifestation of this “divided front” approach. Perhaps it was with the same spirit that William Wordsworth and William Blake distinguished their subject matter – literature and poetry – from others with a sense of purpose, offering an aesthetics and an ethics to an increasingly scientific, humanistic intellectual community that seemed to them sorely lacking in emotionality and
spirituality. These, perhaps, were steps in a process of genesis: genesis as religious beginning: the beginning of a modern academic or intellectual paganism.

This is not to argue that no one has sought consilience during or in the wake of the enlightenment. In fact, for many scientists, it has been an explicitly stated project. Francis Bacon, who is often considered a prophet of modern science, is interested in drawing up a comprehensive “...map,” “...a small globe of the intellectual world.”iii Albert Einstein writes, “It is a wonderful feeling to recognize the unity of a complex of phenomena that to direct observation appear to be quite separate things.”iv But while science might hold up consilience as an ideal, a goal, even Einstein is prepared to admit that the scientific endeavor is separate from humankind’s ethical maturation. This must have been abundantly clear to Einstein and the rest of the theoretical physicists who laid the groundwork for the development and production of the atomic bomb. Regardless of the complexity and elaboration of atomic physics, it could not recommend an ethics or a politics of enactment based solely on the premises of the hard science itself.

This realization is widespread and generically applied in our contemporary cultural thinking.

“Neither any practice actually established anywhere in history nor any science could ever direct us to what we ought to desire. Could Darwin instruct those turtles on the Galapagos to desire to be different from what ‘natural history’ had made them?”v

Here, there is a very definite division between the ethical “ought” and the is of “natural history.” It is not precisely the same dichotomy as that between Einstein’s physics and the politics of nuclear destruction – it is lacking in technological science what it makes up for in the natural, biological realm – but it carries with it an identical assumption about the division of intellectual labor. That is, that science does the mechanics while politics
or ethics decides how to put the mechanism to work. That Darwin describes the natural economy while we orchestrate a polity which may or may not incorporate as little of the scientific/inevitable as possible. For Hayden White, it is the inherent project of science to dissociate itself from the subjective propensity, hope. Therefore, according to White, a good politics can only be un-scientific – visionary, hope driven. Works of literature rather than science are "documents attesting to the reality of the desire for redemption."vi

As soon as the literary, which means the utopian for White, starts "providing justification for the vision of its possible realization,[it] enters into contention with practice, common sense, and science alike."vii The authors of the Constitution of the United States exposit and put to work a philosophy that is not so extreme as White’s, but it accounts for the same antagonism between what is understood to be natural and vulgar and what will be put in place to surmount that unfortunate natural situation. Thomas Jefferson writes, “In questions of power, let no more be said of confidence in man, but bind him down from mischief, by the chains of the Constitution.” Thomas Paine also understands the use of the Constitution in this way: "[it is] ...to restrain and regulate the wild impulse of power.” Jefferson and Paine distrust the will to power in humankind. They consider the “impulse” to be a constitutive force of human nature. This is of humanity and immediate human history is not the prescriptive force in the Constitution though. According to one contemporary admirer of the document, “It was [Jefferson’s and Paine’s] great gift to be able to take a Hobbesian view of human life without applying a Hobbesian solution.”viii

"Publius" (either Madison or Hamilton), admittedly an opponent of Jefferson’s, shares the same idea about the adversarial relationship that must exist between human nature and government: “What is government itself, but the greatest of all reflections on human
nature? If men [and women] were angels, no government would be needed. For both White and the framers of our Constitution then, the literary – the hopeful and visionary as writing – holds an active place in cultural discourse. Literature, according to this scheme, must be informed by the natural (in at least so far as it is responding to it), but it must also be creative, prescriptive, and finally, culturally affective.

It seems clear that we are working within a culture that purposely divides its fields of knowledge. It will be taken as a matter of fact that no time in history is without its factions – without a fractionality of visions and practices. For that reason, it is admittedly somewhat misleading to make such a sweeping generalization about the conceptual system to which contemporary American and western culture in general adhere. Certainly, scientists that make consilience their ends, or religious fundamentalists who would have God running our politics again are as much a part of this culture as the pluralists. But the fact is that their ideologies are not dominant. It is important to see any moment in history as a multitudinous hegemony rather than a totally coherent, unified trend. It is, at the same time, however, useful to consider the dominant forces within that hegemony. The generalization that “we” do not work according to a model of intellectual or epistemological consilience will be made because it is – in so far as it is a conscious generalization – useful for understanding our contemporary circumstances.

II. Reconciliation

“...View the boundary between the scientific and literary cultures not as a territorial line but as a broad and mostly unexplored terrain awaiting cooperative entry from both sides.” -E.O. Wilson
I am writing an English paper about science. I am interested in the way the two fields become each other. If this sounds like a thesis for consilience, that is because it is, in part. Perhaps, a better term would be "reconciliation" or "reconcilience:" reconciliation as reinstating a mutual respect and a common interest in cooperation while observing individual difference. It is not my purpose to systematically distill all of the demarcated academic disciplines into concurrence. I am not ultimately interested in the same kind of consilience as E.O. Wilson. That Physics is Chemistry is Biology is Economics is Politics may or may not be true, but that shouldn’t, in itself, imply a hierarchy. It is self evident that ethical people are also biological people; it is not evident which they are first and foremost.

On the opposite side of the spectrum, it is equally unconvincing that science is completely literary, creating/reading/rediscovering-in-the-always-already the “natural laws of the universe” only by way of or mediated by a lexicon of culturally constructed meanings and values. Both of these approaches seem to me to be incorporating a totalizing, and thereby reactionary academic monotheism. Each approach seeks to identify a specific field of inquiry as that which is primary and foundational.

What I am concerned with here is the fact that at some crucial point in the physical or the chemical or the biological understanding, the understanding can and does become narrativistic. This is not to invalidate the biological understanding, but rather to more fully identify its structure. In the same way that the Catholic Church sought to explain our existence by way of myth, so science must also mythologize. If we catch E.O. Wilson in the proper context, even he will agree.

"To wit, people must belong to a tribe; they yearn to have a purpose larger than themselves. We are obliged by the deepest drives of the human spirit to make ourselves
more than animated dust, and we must have a story to tell about where we came from, and why we are here. Could Holy Writ be just the first literate attempt to explain the universe and make ourselves significant within it? Perhaps science is a continuation on new and better-tested ground to attain the same end. If so, than in that sense science is religion liberated and writ large... Preferring a search for objective reality over revelation is another way of satisfying religious hunger.\textsuperscript{xi}

That science has “a story to tell... [about] why we are here” or about what is or is not possible according to natural Law – biological destiny – suggests that there is a narrativistic element in science. As Wilson understands it, science adheres to the previously formulated rules for the literary (Jefferson’s and White’s); it is prescriptive – not just mechanical. It can be hopeful or stifling and damning of hope. It can be progressive: it has become inextricably bound with our culture’s notion of progress. Or it can be conservative, setting limitations on possibility.

Science has another narrativistic aspect, as well: that it is created by human authors. Science must not be treated as a perfect, and thereby impersonal mind – apprehending from nowhere-in-space-time/objectivity. It must have a body too, housing a consciousness, with motivations and biases that can be likened to those of our individualized consciousnesses. These always-creating, human consciousnesses, bound up with and to some extent, subject to the physical, are the authors of science, and not purely perceiving, one-for-one sign system discoverers. As Niels Bohr’s character in the contemporary play about theoretical physics, Copenhagen, puts it,

“measurement is no longer considered an impersonal event that occurs with universal impartiality; [it is] a human act, carried out from a specific point of view in time and space.”\textsuperscript{xii}

In my edition of The Origin of the Species the preface reads, “Each [great work] (in the article, “great” explicitly means “Plato” and “Aristotle,’’ and also, “The Iliad,” “The Inferno,” “War and Peace” and “Uncle Tom’s Cabin,”) is recognized as
having played a part in the creative or autoevolutionary development of [human]kind which we call the civilizing process.”

I am not willing to go so far as to say that every great work – be it of literature or science – makes us more civilized, but I do think this type of inclusionary thinking about culturally significant work, regardless of the field, is worth pursuing. It is towards the kind of reconciliation I am interested in here. It implicitly permits science to have a social function beyond that of laboratory mechanics and, in so doing, it incorporates science into a larger category of cultural literature. Again, this is not to have science collapse into the literary totally. Nor is it to have science determine all of our social and even artistic urges. It is to allow science and literature to inhabit a common ground of human inquiry, while respecting the difference between the two projects.

In the body of this paper, I will be examining metascientific narratives. That is, I will be reading readings of science. I am a student of “language and literature,” not Science, so I will not treat particular scientific fields in too much depth. I will treat the science that self-conscious, healthy-doubting and/or rationally affirming scientists treat in their metasciences. Particular scientific methods and theories will be taken up as examples or illustrations of larger, thematically pervasive scientific methodologies. On this level, I do not pretend to prescribe particular solutions or specialized treatments for isolated problems. But, by virtue of my very general approach, I should be able to make some basic philosophical and practical suggestions for the whole body of science as a general human, scientific endeavor. By stressing the human in the scientific, and obscuring the possibility of absolute objectivity, I will be looking toward a science that incorporates and is advised by the humanities.
Likewise, in so far as my work here is a humanistic meta metascience, I will have something to say not only about science, as it may come to incorporate the literary in its constitutive assumptions and methodologies, but also about literary studies, as a meta-English discourse. Getting over post-structuralism has been the name of the game for many literary theorists in the last forty or fifty years. I am not offering reconciliation as an innovative extension of post-structuralism, but as is appropriate to the term, I am suggesting reconciliation between the post-structural reader and the modernist god/author, or between Derrida and the structuralist-scientist looking to distill meaning from the formal, to discover between binary oppositions the truth of the text. I am allowing voice back into the text, but only as voice and not as scripture-speaker or commandment-teller-of-Truth. I am respecting the efforts of structuralism to uncover “the truth [that] is out there” in the text, but not treating truth as discovery only. This means the reader must work to understand the subject (speaking) in the text – he or she must be a sensitive reader – and will not be humored or applauded for fancy ventriloquism: making the text talk whatever. However, I will refuse to fall back on objectivity as the ends for literary or scientific analysis. The fact is that readers create the narrative too. It is our cooperative investment with the author or our cognitive positioning and repositioning of the textual form that constitutes the nature and quality of our interpretations. Again, this is not to argue for the tyranny of the author or, on the other hand, the totally solipsistic freedom of the reader, but rather, some middle ground: a reconciliation: a place where the superstitious pre-modern, the objectivity-interested modern, and the relativistic post-modern acknowledge each other.
I do not mean my amendments to science or my suggestions to literary studies as disparate, isolated advices; I am also looking for a particular reconciliation between the two disciplines. This will mean a transformative curriculum (it is not a transformed curriculum because the potential program will be admittedly reactionary and gradual: in a process of reconceiving a role for the artistic, or precisely, the literary in the humanities and including the literary in the sciences). We are heading toward a kind of interdisciplinary checks-and-balances: an academic reform program, a cultural studies, a conciliatory conversation between all of the culture’s readers and authors/writers. It is in this kind of program that I hope to be actively taking part in the present paper. The aim will be to encourage a holistic kind of thoughtfulness, rather than a separated, specialized sort of inquiry. We will not have pure theoreticians or experimental mechanics, nor will we have only aesthetes; we will flood the academy with a new set of critically minded, trained, but not on some-one-track, cooperative agents, able to engage a common contemporaneity of circumstances. This, above all else, will make academics matter more.

Despite my lack of formal training in the field, it should be admitted that I will play the scientist in this paper: like a general practitioner, I will “examine” and “treat... the whole body of science” (my words at the bottom of page #7). I will attempt to distance myself (become objective?) from some basic cultural assumptions and make claims that underhandedly play truth concepts as trump cards. But, both my methodology and my conclusions about science will be narrativistic. They will be creative and explanatory in a way that science proper would prefer not to allow itself to be. In so far as this is true, I am a student of literature as well. If I am both then, I am
enacting a sort of consilience, a consilience that, I argue, is necessarily mirrored in the actual disciplines. The narrativistic aspect of science should not render it illegitimate as a progressive intellectual endeavor any more than it should render the study of literature illegitimate. It should, however, remind us that both fields of inquiry have an epistemological perimeter.

We are engaging a post-modern sensibility here — that is, a sensibility owing to the collective cultural intuition that modern science is not able to live up to its and our hopes of totally and utterly demystifying the universe, setting apart a single, perfectly correlative, numerical or symbolic value for every type and every bit of raw existence. We are, by including the narrativistic in science, allowing the possibility for a proliferate world. However, solipsism is not our end. That the center will not hold does not mean we can not work according to an approximate or consented to concentrism. If the question is pushed to its limits, we must admit that we believe in the object. The postulate is that we believe or experience in the subject. Based on our belief and our understanding of common matter (atoms and aspirations for happiness) we can, but more importantly, we should treat the object as another subject. Because we can influence its meaning while it can influence ours, we ought to treat it/thou/xiv as a cooperative partner. This is the concurrence of nature and culture, leaving both with narrativistic/created qualities and scientific/determining ones. It is also the reconciliation between the disciplines of Science and Literature, who have been at odds long enough to want to ignore each other and ignored each other long enough to suffer mutual debilitation.
III. Science/Narrative

“...Efforts to come to linguistic terms with the non-representability, historical contingency, artefactuality, and yet spontaneity, necessity, fragility, and stunning profusions of 'nature' can help us refigure the kind of persons we might be.”
-Donna J. Haraway

In the same way that history can be understood as storytelling, science can be understood as narrative. If you read The People’s History of the United States, by Howard Zinn you are going to get one account of American history. If you read The Americans: The Democratic Experience, by Daniel Boorstin you are most assuredly going to get another. Presumably, the events of American history are the same for Howard Zinn, Daniel Boorstin, you and I. But we read history books for more than a simple list of facts and events in history. History itself is more than a list of facts. History makes sense of passed events. It offers an explanation, thereby positing the disposition of the present. The explanation is almost never explicit or self-conscious. Rather, it takes the form of a narrative. Inscribed in the particular historical narrative is a coherent system of undoubted causal influences and value assumptions that orient and allocate significance to specific events. That there are different histories of the same events testifies to the fact that any particular historical explanation will be from an unavoidably limited point of view. Indeed, a history will have an author. The terms the author chooses to fit passed actualities into – the words telling a history – are inherently partial and exclusionary.

In science, explanation takes on a narrative form, as well. This time, rather than explaining historical, political events, it is an explanation of natural phenomena: molecular relationships, biological ones, and behavioral or instinctual ones (or, as Wilson
would have it, molecular as biological, and biological as behavioral). Again, there is no question whether or not natural molecular, cellular or behavioral events occur; it is a question of what these events mean. The way in which we make sense of these events will constitute an explanatory narrative.

Including the narrativistic in science, while preserving a respect for the field as usefully separate from Literature, can lead to two types of critiques of science. The first, which will be dealt with presently, is to attribute narrativistic, creative qualities to science in a pejorative way. This is not to revise the mission and constitution of science, but rather to attempt to perform a more rigorous, true science in a place where it has been imperfectly performed in the past, either purposely or by genuine error. The second, which will be dealt with in later sections, is to realize the inevitability of narrativistic science and consequently, to look to revise the narrativistic (as well as the purely factual elements) of a theory, without looking to dispose of them altogether, as impurities of analysis.

Richard C. Lewontin, the Alexander Agassiz chair of Zoology at Harvard University, claims that modern-day science is an instrument for preserving and perpetuating cultural dominance, wielded by those who have a vested interest in the present state of order. He equates science, as it is institutionalized today, with the fascist, feudal, and hierarchical Catholic Church. Fundamental to this equation is the idea that the dominant individual or group in society must appeal to something outside of the culture’s constructions in order to secure its legitimacy. According to Lewontin’s scheme, objectivity is the built-in choice for science.

“For an institution to explain the world so as to make the world legitimate, it must possess several features. First, the institution as a whole must appear to derive from
sources outside of ordinary human struggle. It must not seem to be the creation of political, economic, or social forces, but to descend into society from a supra-human source. Second, the ideas, pronouncements, rules, and results of the institution’s activity must have a validity and a transcendent truth that goes beyond any possibility of human compromise or human error. Its explanations and pronouncements must seem to be true in an absolute sense and to derive somehow from an absolute source. They must be true for all time and all place. And finally, the institution must have a certain mystical and veiled quality so that its innermost operation is not completely transparent to everyone. It must have an esoteric language, which needs to be explained to the ordinary person by those who are especially knowledgeable and who can intervene between every day life and mysterious sources of understanding and knowledge.”

Lewontin focuses his concerns about science on Molecular Biology (Genetics), Evolutionary Biology and Sociobiology, in particular.

Taking a social-constructivist’s tack against the theory of “natural selection,” Lewontin argues that Darwin – a force to be reckoned with in and of himself, but also undoubtedly serving as the foundational thinker for E.O. Wilson’s later work in Sociobiology – made sense of the natural economy because of the way he was culturally accustomed to thinking about commerce and competition. Lewontin is not willing to do away with the explanatory force of Darwin altogether. He unflinchingly assumes the basic idea that organisms have evolved on the earth over the course of billions of years and that “we know this to be a natural process resulting from differential survivorship of different forms.” “In this sense,” he claims, “we all accept Darwinism as true.” But Lewontin takes Darwin to task on the particular dynamics of “differential survivorship.” In not so many words, he is questioning the narrative that Darwin seems to be weaving between actual events in the evolution of organisms; he is questioning Darwin’s prejudices as a plot spinner for nature. Ultimately, according to Lewontin, Darwin’s theories are tarnished by the historical context out of which they are born and the author’s economic and social biases.
"[Darwin] ...claimed there was a universal struggle for existence because more organisms were born than could survive and reproduce, and that in the course of that struggle for existence, those organisms who were more efficient, better designed, cleverer, and generally better built for the struggle would leave more offspring than the inferior kinds. As a consequence of this victory in the struggle for existence, evolutionary change occurred... Darwin himself was conscious of the source for his ideas about the struggle for existence. He claimed that the idea for evolution by natural selection occurred to him after reading the famous, "Essay on Population" by Thomas Malthus... The essay was an argument against the old English Poor Law, which Malthus thought too liberal."xviii

Lewontin is critical of Darwin because of the politics that the theory of natural selection seems to be both born out of and working towards, but this is not the foundation on which he feels comfortable building his critique. The fact that Darwin has biases and writes his theory in terms of those biases, makes the theory false, in some conventionally scientific way. Of course, a conceptual framework that allows falsity must also have truth to judge by. And so, Science as an enterprise of objectivity remains intact while Darwin's theory of evolution specifically is up for discussion. It is the same modernist model for critique: the truth we know is in some way deluded with superstition or subjective bias; we will shed our superstitions and uncover the true truth. The bottom line for Lewontin in all of his critical strategies against science is that the purity and honor of the scientific endeavor is distorted, marred and misdirected by institutionalized and so legitimized avarice. He is critical of the Human Genome Project and the Pioneer Hybrid Seed Companyxix on these grounds.

"A purely commercial interest has so successfully clothed itself in the claims of pure science that those claims are now taught as scientific gospel in university schools... Once again, what appears to us in the mystical guise of pure science and objective knowledge about nature turns out, underneath, to be political, economic, and social ideology."xx

Lewontin would be all to ready to take up a recent add from New Yorker magazine as an illustration of the Human Genome project's corrupt commerciality. It is a two page add;
on the first page is a picture of the double helix and a caption that refers to the helix as a “ladder.” The written section of the add on the adjacent page reads,

“At the top of this ladder is a world without disease. Most disease is genetic. The faster scientists can sequence DNA, the faster they can pinpoint the causes of disease so cures can be developed. Agilent Technologies [a subsidiary of Hewlett-Packard] provides technologies that speed DNA analysis exponentially. It’s a long way to climb, but we’re giving science a big step up.”

Whether or not we agree with Lewontin’s treatment of modern, commercially fueled science, we must admit that this add exemplifies the money-hungry object of his criticisms.

If only we could live in a communist society where scientists are fully funded and able to pursue the truth with honesty and integrity instead of profit hungry eyes seems to be Lewontin’s message in *Biology as Ideology*. Science, as it is, under capitalism, is only another factory house, albeit a prestigious one. It literally makes cars and microwaves; it just doesn’t physically pull the lever or fit the door on the hinge. It works according to the principles of incentive so that it can collect a paycheck, and so long as it doesn’t undermine the system it is indebted to, it will continue to be. And so will the system.

“The study of DNA is an industry with high visibility, a claim on the public purse, the legitimacy of a science, and the appeal that it will alleviate individual and social suffering. So its basic ontological claim, of the dominance of the Master Molecule over the body physical and the body politic, becomes part of the general consciousness.”

The applications of Darwinism and genetics for Lewontin are, again, modes of domination. Keeping with Hayden White’s dichotomy between a science of *is* and a politics of *what can* or *what should be*, Lewontin suggests that focusing on the genetic factors in identity is like emphasizing the author in a work of literature. As one does not allow the reader the freedom to make meaning the other does not allow the biologically
bound individual to consciously make choices about the facets of their own identity.

Identity has literally already been scripted in our chromosomes, “AGGACTT...”

“...The importance of the Human Genome Project lies less in what it may, in fact, reveal about biology, and whether it may in the end lead to a successful therapeutic program for one or another illness, than in its validation and reinforcement of biological determinism as an explanation of all social and individual variation.” xxiii

Lewontin believes that biological determinism is not the actual truth of biological science; rather it is a myth put in place to perpetuate the power structure and the economic system. Genetics, for Lewontin, as it is commonly understood today, “[makes] the ideology of biological determinism complete... [It provides] a theory of unchangeable human nature.” Once human nature is unchangeable – or once “nature” is incorporated into the human constitution as a static concept – there can be no reasonable, realistic effort to make change.

Lewontin is ultimately unable to traverse the boundary between science and literature. He observes the creative, narrativistic, mythologizing elements in modern science. But he is unable to step out of his laboratory and embrace these qualities. To embrace the narrativistic in science does not necessarily mean to embrace every narrative science constructs – it does not mean we need to understand the natural economy in terms of “the survival of the fittest.” Lewontin could still take up his critique of Darwin without resorting to classical science and an enlightened either/or rhetoric of truth vs. mystification.

For Lewontin, the fact that a science is a much a creation of its particular author or authors’ biases (financial self-interest) as it is a representation of reality is a discredit to the science. But, according to the reconciliation posited here, Lewontin’s notion of a dishonest, commercial science is very likely as “scientific” as any Marxist science that
might be conceived of as an alternative. That is, there is a necessary admixture of narrative, or Lewontin might say propaganda, and actual truth telling involved in any scientific discourse. Therein, the problem with Lewontin’s capitalistic science is the same as it would be for Lewontin’s ideal science: that these sciences ignore their own narrative aspects and work under the assumption that narrative is an isolated domain, proper only to students and scholars of literature. How would our approach change if we were to accept the narrativity of science and focus our critique on the particular values, implicit or explicit, conscious or unconscious, in that science?

IIIB. The Scientific Consciousness

If we admit the narrativistic into science (admit that that the narrativistic is there as an inevitability), it becomes important to explore the disposition of the authorial consciousness involved. Consciousness – so far as it is understood as a coherent, consistently self-distinguishing process of apprehensions – is a fundamentally repetitive phenomenon. It might be said that the repetition of self-reflection is the constitutive theme of consciousness. In so far as this, it is not to go too far to liken narrative and consciousness. If narrative form is what makes data make sense – if that is what arranges its significances – then narrative form might also serve as that which makes the self make sense. Theme in narrative is understood as significance by way of repetition. Theme in consciousness is understood as the repetitive re-cognition of self.

In order for the scientific consciousness to make sense and remain intact it must maintain its themes. Otherwise it is left without an anchor in intelligibility – it is either a
raw set of data without any meaningful explanation to offer or it is an unproclaimed
discipline – without a consistent academic identity, without a continuous set of
ideological and methodological precepts – without self-reference or repeatability. It is
almost always the project of science to classify, assign a type, a genus, distinguish the
finite number of chemicals occurring in nature, and then outside of nature – in the lab. It
can be said that science seeks out repetition, trend, theme in order to reinforce the
premises of its consciousness.

“We are not subtle enough to perceive that probably absolute flow of becoming; the
permanent exists only thanks to our coarse organs which reduce and lead things to shared
premises of vulgarity, whereas nothing exists in this form. A tree is a new thing at every
instant; we affirm the form because we do not seize the subtlety of an absolute
moment.”\textsuperscript{xxiv}

Nietzsche suggests that theme-searching is a shortcoming of science’s, a “vulgarity.” If
science were not narrativistic – if it did not incorporate a concept of theme, if it did not
search for repetitions – it would be, at once, more accurate and unusable, unable to offer
any explanation on the basis of predictability and repeatability; for Nietzsche, these no
longer serve as attributes of a valid hypothesis, but rather, as symptoms of the analyst’s
“coarse organs.”

If there were to be a science more attuned to Nietzsche’s “absolute flow of
becoming,” or, at least, a science that opened its doors wide enough to let a category
escaper in, it would be difficult for this unfit-able phenomenon to be assimilated into the
traditional scientific schematic of types. The cohesion of the scientific consciousness
would thereby be compromised.

“The breakdown of narrativity in a culture, group, or social class is a symptom of its
having entered into a state of crisis. For with any weakening of the narrativizing
capacity, the group looses its power to locate itself…”\textsuperscript{xxv}
If we treat culture as collective self, a breakdown in cultural narrative would have to mean a lack of repetitions of the themes that make self-awareness possible. Ultimately, it would mean a breakdown of self as theme.

In contemporary science, there is a “weakening of the narrativizing capacity.” It is important to identify this “breakdown in narrativity” as an example of science’s automatic compulsion to narrativize. The breakdown in narrativity is brought on by a field of phenomena that do not repeat the themes of classical science. Science, like any consciousness, can not cope without its narrative themes, its repetitions and affirmations of proper orientation and awareness.

According to Evelyn Fox Keller, professional Biologist, specializing in “mathematical biophysics,” and also Professor of History and Philosophy in the Program of “Science, Technology and Society” at the Massachusetts Institute of Technology, it is proper to and inherent in the processes of scientific inquiry to “interpret” and discuss the meanings of phenomena. In fact, she argues, this is the only way in which workable scientific theories are developed. She observes that quantum mechanics has posed a unique difficulty in that it has resisted interpretation.

“After more than fifty years of unquestionable success as a theory, quantum mechanics remains surrounded by questions of interpretation... Discussions about the meaning of quantum mechanics are stymied as a result of the failure of physicists to formulate a cognitive paradigm adequate to their theory... Among physicists, a comfortable, stable, representation of the new integration required, especially by quantum mechanics, is yet to be achieved; its absence is reflected in a remarkable array of interpretations and partial accommodations, thinly veiled by a token conformity and consensus.”

Keller attributes the difficulties physicists are having explaining quantum mechanics to a phenomenon that Jean Piaget calls “cognitive repression.” Cognitive repression occurs individually or collectively when “[a] schema which ‘cannot be integrated into the system
of conscious concepts is eliminated… and repressed from conscious territory before it has
penetrated there in any conceptualized form. White might say that physicists are
unable to locate quantum mechanics in or within the narrative of classical science. This
inability to explain quantum mechanics would constitute the break down in narrativity
then. If quantum mechanics is somehow so resistant to general scientific assumptions
and categories that sense can not be made of it within the traditional paradigm, then,
according to Piaget’s theory of cognitive repression, it will either be forced to fit
somehow or it will be, as much as possible; ignored and unapplied. Does the fact that
there is no definitive text book on quantum mechanics (according to Evelyn Fox Keller in
1985, over fifty years after the success of the theory is relatively uncontested) suggest
science’s inability to observe the manifestations of its basic principles or, as is obviously
more likely, science’s lack of a narrative form – lack of an arsenal of naturally occurring
themes – with which to make sense of the new physics? The latter may very well be the
precise enactment of cognitive repression on the part of classical physics as a collective
cognitive enterprise. This attests to the narrativity of the scientific consciousness and the
vulnerability that should come with any self-reflexive, self-perpetuating consciousness.
If we can agree to work with the concept of the scientific consciousness, what can be
said, in psychoanalytic terms, about the subjective desires and possible neuroses of
science?

IIIC. A Psychoanalysis of the Authors of Objectivity: Reconciling Plato with
“Pleasure”

“…Begin to chart a terrain that amounts to a psychosociology of scientific knowledge.”
The perspective that science prizes (objectivity) is not some automatic human faculty with which we have been endowed in order to apprehend the true nature of things. Rather, it is an aspired to and preferred point of view, taught to budding scientists by the keepers of the tradition. Traditional science is conceived as any consciousness is conceived: with its own motivations and pursuits of pleasure.

"The individual scientist of course does not choose his or her 'relation and perspective' freely; they are a part of the process of socialization into the scientific community and into the culture of which that community is a part. Relation and perspective thus constitute the first stage of naming... [And] naming nature is the special business of science.".xxix

By achieving an objective "relation and perspective" to nature, science is able to accomplish its goal, knowledge. The word "knowledge," which derives from the word "gnosis" classically connotes an emphasis on the mind rather than the body. Knowledge is in the mind; the laws of nature are the ideas of God, driving, operating the physical, the manifest that exists after the essential idea. In this way, a rhetorical, narrativistic understanding that matter is subservient to the compelling, immaterial forces of mind/God has been made commonplace in science and in culture. In seeking objectivity, science seeks to discard its own body and become pure, uncorrupted mind. Science, then, looks to become thoughts and forms, equations that mirror the actual principles of the physical universe.
Science’s attempt to relinquish the body is driven by the will to be transfigured, the desire to be God, having all possible perspectives accounted for from nowhere/everywhere in time-space. This desire can be analyzed as having a two-pronged trajectory: 1) the desire to have god-like power over nature and 2) the desire to be removed from a shifting, unwieldy, threatening nature.

Evelyn Fox Keller traces the development of the scientific consciousness, which she feels is debilitatingly entrenched in categories of subject/object and mind/body, from its roots in Plato.

“...The particular relation of mind to nature on which our own science is based... [is due, in part] to Platonic epistemology that has continued to reverberate throughout Western intellectual history... By restricting knowledge to the domain of theory (as distinct from experiment) and nature to the realm of forms (as distinct from matter) Plato is able to map out a path to knowledge guided by love (Eros), and insulated from the aggression both he and his culture associate with sensible, material, and female nature.”

Keller attributes the general Athenian biases against the coupled images of femininity and nature, and Plato’s in particular to a widespread homoerotic impulse in ancient Graeco-Roman culture. This trend in sexuality in ancient Greece is commonly referred to and acknowledged.

“The union of mind with the essential nature of things is a union of like with like; accordingly, it is taken for granted throughout the Symposium and Phaedrus that Eros, which is significant as a step towards the world of Being is homosexual”

Keller’s explanation of Plato’s epistemology is characteristic of her tendency to privilege psycho-cultural factors in the development of what she calls the “scientific consciousness.” She is not a thoroughgoing social-constructivist about science, but she is willing to have a look at the non-scientific, narrativistic in science as a necessary, constitutive element of the discipline.
I feel it is important here to briefly mention that neither Keller nor I are suggesting that science's missteps are entirely due to an inherently homosexual opposition between feminine-nature and masculine-mind tropes. Keller is, admittedly, showing where science has come from in order to accentuate the fact that it does not have to continue along in the same way. But in the process of her argument, Keller makes it clear that she is against any and all gender identifications. That goes for the animate as well as the inanimate. In fact, it is the association between femininity and nature that is at issue here and not some necessary, maladaptive disassociation between homosexual men and femininity in whatever form. Since the terms with which we have traditionally made sense of the dichotomy between mind and nature are gendered though, Keller makes some suggestions about a feasible feminist science that is able to work according to a vocabulary of traditional gender categories. She suggests that, "the only imaginable model that might have offered an instance of reciprocal consummated sexuality, not automatically evoking aggression and inviting domination, would have come either from female homosexual experience or from a female perspective on heterosexual experience." The lack of "a female perspective on heterosexual experience" is perfectly illustrated in the case of Francis Bacon.

With Bacon, science takes up a hands-on, experimental philosophy, wherein "The object of study is no longer the Platonic Forms, a rarefied distillate of male sexuality, but material nature, the corporeal frame of female sexuality." As is to be expected, the feminine, nature, is subjugated by the masculine, mind. Bacon writes, "Let us establish a chaste and lawful marriage between mind and nature." Keller continues along psychoanalytic lines in criticizing Bacon's science. She uses a specific psychoanalytic approach called "object relations theory." Object relations theory is primarily concerned
with the variety of cognitive inclinations that tend to accompany a growing sense of autonomous identity in relation to the world and other individuals. As far as I can tell, the theory succeeds at being Freudian, without incorporating Freud’s basic sexism. It is immediately interested in early cognitive stages, which, it is argued, are not stages of self-identification, but rather stages of “connectedness.” Freud also considers early cognitive stages to be about “connectedness” or union with the mother. The maturation process can only begin once the individual identifies his or her autonomy or disconnectedness. This is the birth of the self. And along with this birth comes the splitting of the mind and the body, the subject and the object, the self and the other. For Keller, object relations theory is thoroughgoing in its explanatory power. From Plato to Bacon to contemporary science, the goal is as rigorous a split as possible.

“Having divided the world into two parts – the knower (mind) and the knowable (nature) – scientific ideology goes on to prescribe a very specific relation between the two. It prescribes the interactions which can consummate this union, that is, which can lead to knowledge. Not only are mind and nature assigned gender, but in characterizing scientific and objective thought as masculine, the very activity by which the knower can acquire knowledge is also genderized. The relation specified between knower and known is one of distance and separation. It is that between a subject and an object radically divided, which is to say, no worldly relation. Simply put, nature is objectified.”

When the insistence on this split is put in terms of psychoanalysis, we arrive at an interesting applied incarnation of Freudianism. Freud recommends extricating oneself from that connectedness with the mother/world for the sake of the civilizing process. Repression is the golden key to an enlightened, albeit discontented polity. So far as Keller is concerned though, the repression is too fierce in the case of science; the divorce between the subject and the object has become irreconcilable. “The oedipal boy’s wish to become the father of himself [has become]… a way of doing without the mother.”

This is not only seen as an appropriation of the feminine for the sake of creation and
being; it is also seen as a denial of the feminine for the sake of purity and objectivity.

Helene Cixous seems to penetrate this fierce extremity of the scientific consciousness in her article/poem, “Sorties.”

“...And dream of masculine filiation, dream of God the father emerging from himself in his son, - and no mother then... so no mother then?”xxxvii

Previously, we discussed “cognitive repression” as an explanatory model for the lack of consensus amongst scientists about the meaning and use-value of quantum mechanics. Now that we have explored the disposition of the scientific consciousness in more depth, it is appropriate to work towards a more precise explanation for science’s refusal to incorporate quantum mechanics into its narrative consciousness. Keller describes in detail the diversity of explanations that have been offered in order to make sense of quantum mechanics according to the classical conceptual paradigm. She then describes a range of positions taken by some physicists that she groups together due to a single commonality in approach. The commonality is that they offer “subjective interpretations of quantum mechanics – all loosely associated with the Copenhagen Interpretation.”xxxviii Not surprisingly, the Copenhagen Interpretation hasn’t enjoyed a lot of support among physicists. In fact, “In an effort to escape from this quagmire, theorists have proposed more and more outlandish alternatives.”xxxix Keller wastes no time in attributing this to the fact that subjective interpretations are not in accordance with the classical tradition. She states, “As with the child who is caught between cognitive paradigms, the ingenuity that physicists have displayed is quite impressive.”xl
"As such, it militates against the acceptance of a more realistic, more mature, and more humble relation to the world in which the boundaries between subject and object are acknowledged to be never quite rigid and in which knowledge of any sort is never quite total. In such a frame, I suggest that the antinomies of quantum mechanics would no longer be so problematic."

At the crux of her argument, Keller is asking science to admit its own arbitrary desire to and insistence on being objective, separated from and/or dominant over nature. In so doing, Keller is implicitly calling for a shifting of paradigms within science. It is important to note that her criticisms of science are not ironically based on a truth concept that is imaginably able to escape superstition, as are Lewontin’s. She discards the notion of truth, or at least “total” truth, for the sake of a set of values, which she deems more admirable, namely, maturity, humility and sensitivity. She is unwilling to disregard science altogether, since it is, for her, undeniably successful and useful. Rather, she suggests a rehashing of some of the basic premises of the scientific endeavor. For science to accept Keller’s proposal, it must admit subjectivity into the stated set of active variables in experimentation.

It is important to be careful not to slide all the way on the slippery slope of post-structuralism here. By embracing the subjective, creative, narrativistic elements in science, Keller is certainly stepping in that direction. Derrida exemplifies the extreme stance that post-structuralism takes on “truth,” and by implication, the stance it takes on any intellectual tradition that can trace its roots to Plato, science not withstanding. By erasing the difference between the signifier and the signified – collapsing the duality into a floating, playing signifier-system that hovers over the specter of the transcendental signified – by making everything a text without a source or a speaker – Derrida is, effectively, reducing the fraction of appearance over reality, myth over truth, and so on to
a common denominator that is overtly oppositional to the foundations of scientific thinking.

"For there are two heterogeneous ways of erasing the difference between the signifier and the signified: one, the classic way, consists in reducing or deriving the signifier, that is to say, ultimately in submitting the sign to thought; the other, the one we are using here against the other one, consists in putting into question the system in which the preceding reduction functioned: first and foremost, the opposition between the sensible and the intelligible. For the paradox is that the metaphysical reduction of the sign needed the opposition it was reducing. The opposition is systematic with the reduction."

Here is deconstruction in all of its confusing, eventually self-destructing ironies. It utilizes the equation of truth with "thought" in order to turn the equation in on itself, and render truth a discourse always-already at play in the physical body/text. Derrida extends his argument to deconstruct all of the basic oppositions that privilege the pre-linguistic or transcendent idea over matter. In particular, he takes up "...the opposition between nature and culture," with which Levi-Strauss is concerned. Foucault puts the equation of truth and discourse to work as well, but he is more interested in the applications this thinking might have for power relationships. Foucault is ultimately concerned with the arbitrariness (ungroundedness or uncenteredness) of power. He calls his project "critique." "Critique is the movement by which the subject gives itself the right to question truth on its effects of power and to question power on its discourses of truth." Keller is certainly engaged in this type of "critique" or questioning of power, but ultimately, she is interested in maintaining some notion of actual truth. That is, at no point does truth degrade into a purely physical, structural discourse of play for her, as it does for Derrida. Instead, Keller advises science to seek the truth, while keeping in mind the inevitable subjectivity of the pursuit.
Should science admit, at least partial subjectivity into the lab – as Keller suggests it ought to – will it provide more “pleasure” for the analyst; that is, will it diminish its use of forms and types and apprehend, with an increasing subtlety, the elusive – never definitive – perhaps, never knowable – actuality of becoming? Another way to ask this question is: if we relieve science of some its long standing and now, constitutive repression, will it become more erotic? If we are to take Keller’s cognitive approach in answering this question, we must suppose that a less mind-heavy, more feeling science, a science which would acknowledge its connected-never-completely-objective point of departure will indeed proceed in resisting forcing or subjugating nature into predictably repetitious types. Repression will ebb in the scientific consciousness resulting in a lack of rigorously forced distinctions, such as self from other. This progression from the subject/object dichotomy to the subject/object relationship has been aspired to and expressed in different terms by Roland Barthes.

“...The present configuration of forces: on the one hand, a mass banalization (linked to the repetition of language) – a banalization outside of bliss but not necessarily outside of pleasure – and on the other, a (marginal, eccentric) impulse toward the New – a desperate impulse that can reach the point of destroying discourse: an attempt to reproduce in historical terms the bliss repressed beneath the stereotype. The opposition (the knife of value) is not necessarily between consecrated, named contraries (materialism and idealism, revolution and reform, etc.); but it is always and throughout between the exception and the rule.”

For me, it is not that the new science needs to be marginal or eccentric, or that it needs to go to the extreme point of “destroying discourse.” Neither of these are necessary in order for it to be “between the exception and the rule,” not discounting either, but embracing each, in turn, by virtue of its use value.

Donna Haraway seems equally interested in this type of science and this treatment of an elusive factuality.
“I wish to translate the ideological dimensions of ‘facticity’ and ‘the organic’ into a cumbersome entity called a ‘material-semiotic actor.’ This unwieldy term is intended to highlight the object of knowledge as an active, meaning generating axis of the apparatus of bodily production, without ever implying immediate presence of such objects or, what is the same thing, their final or unique determination of what can count as objective knowledge at a particular historical juncture.”

Here, Haraway seems able to negotiate a tricky compromise between “material” actuality and “semiotic” meaning production. She will not grant the object “immediate presence,” which would amount to immanent being or transcendence – for Haraway, becoming is simply not accessible in that way – but she will grant it materiality, which translates to a posited actuality beyond the mind. Haraway and, to some extent Barthes seem to be offering a middle ground, wherein objectivity is not given up completely, but it is portioned out to subjective knowers. In so doing, they usher in the pleasure of the body – not denying it, not repressing it totally – while still allowing for the thinking mind, the individualized consciousness.

It is important to recognize that this recommendation for science, based on an analysis of its consciousness, is – like the science of objectivity, which we have given therapy – just another constructed feasibility. Its suggested normative standards are based on non-discovered, subjective values, which are admittedly arbitrary or, at least, absolutely unjustifiable. These reformative suggestions will not be made under the guise of Truth. Narrativistic science seems to me and to some of the metascientists I treat here to be a better program because it works according to a more acceptable strategy of respectful, sympathetic knowledge and action.

IV. Nature/Culture
I will now use science to make a point. The science I am using is, as it will be shown, not the science of separation and objectivity, but the enactment of a more creative, subjective, feeling science. This must be allowed within the recommended boundaries of a self-and-other-defining, narrativistic science because it self-consciously and explicitly performs the narrativistic act, relinquishing its view from absolute nowhere.

In 1983 Barbara McClintock was awarded the Nobel Prize in the field of physiology and medicine for her work on the theory of "gene transposition." Gene transposition basically is a theory of environmental influence over the structure of DNA. Keller recounts McClintock's findings in laypersons terms:

"Since needs are relative to the environmental context and hence subject to change, transposition, by application, indirectly allows for the possibility of environmentally induced and genetically transmitted change in an organism."xlvii

As McClintock argues herself, "genes function only with respect to the environment in which they are found." McClintock's findings are in direct opposition to Watson and Crick's original formulation of a model of genetic replication and organismal instruction.

"According to their account, the vital information of the cell is encoded in the DNA. From there it is copied onto the RNA, which, in turn, is used as a blueprint for the production of the proteins responsible for genetic traits. In the picture that emerged - DNA to RNA to protein - the DNA is posited as the central actor in the cell, the executive governor of cellular organization, itself remaining impervious to influence from the subordinate agents to which it dictates."xlvii

If Keller's cognitive approach to the scientific consciousness is applicable here, it is on the basis that the model that understands genes as director-chromosomes fulfills a collective psychological desire on the part of Baconian science to have a basic division between the master and the servant, the mind and the body. In this case, genetic coding would take the place of something like the Ten Commandments (only more forceful) as
the ideal that precedes-dominates existence. This equation of the gene with the mind or
the master is a longstanding point of contention in science. The “Master Molecule”
concept was being tossed around in the discourse, even before the discovery of the
structure of DNA.

“The emphasis has been very strongly in favor of one of these... The first we will
designate as the ‘Master Molecule’ concept... This is, in essence, the theory of the Gene,
interpreted to suggest a totalitarian government... The second concept we will designate
as the ‘Steady State’ concept. By this term... we envision a dynamic self-perpetuating
organization of a variety of molecular species which owes its specific properties not to
the characteristic of any one molecule, but to the functional relationships of these
molecular species.”

Evelyn Fox Keller has run up against a similar bias toward the “Master Molecule”
model in her own work on “cellular slime molds.” Keller developed a “pacemaker”
theory of slime mold aggregation according to which, “The different morphologies
appear through successive bifurcations of a single reaction-diffusion system and do not
require the expression of new genetic information.” Keller explains that her theory has
been difficult to swallow in the scientific community because of “…the predisposition to
kinds of explanation that posit a single, central governor.” The ideologue science that
looks for this kind of hierarchical structure, according to Keller, is too simple and
shortsighted for her purposes.

McClintock and Keller’s strategies as scientists illustrate a more sensitive, less
removed or divided approach to learning and knowledge, wherein, knowledge no longer
becomes gnostic. Keller contrasts the views of Ernest Schachtel with those of
McClintock in order to make the difference between the two approaches more explicit.
Schachtel develops the concept of “focal attention.” Focal attention enables us to
“progress from mere wishing and wanting to thinking and knowing.” But Schachtel is
also interested in “poetic” faculties. He describes the poetic, as distinct from the
scientific, as, “an experiential realization of the kinship between oneself and the other... a
realization [that] is made difficult by fear and by arrogance.” The difference between
Schachtel and McClintock, according to Keller, is that Schachtel divorces the “poetic”
from the scientific, without any vision or hope for reconciliation between the two,
whereas, McClintock traverses the boundaries by keeping vigilant of her kinship with the
object of inquiry, by being sensitive to its own inclinations as well her own. As Keller
puts it, McClintock has a “feeling for the organism.”

Barbara McClintock’s theory of gene transposition and Evelyn Fox Keller’s
“pacemaker” theory of slime mold aggregation are posed here as the fruits of an
alternative science. McClintock and Keller are not revolutionary in their approach, by
any means; they both engage in the standard scientific methodology, to some extent. The
difference is that McClintock and Keller conduct their investigations, not with absolute
objectivity or complete truth reduced from materiality as an end in mind, but with a
cooperative attitude toward the object. It is only according to their science that truth or
objectivity can exist as a non-totalizing concept.

McClintock and Keller have begun to show that nature and culture become each
other by way of their interactive, “transposition[ing]” constitutions. Their findings are
the results of a self-consciously reformed science. A science that – in the same way as
literary studies ought to – pursues individually framed questions, phrased in the symbols
and terminology appropriate to that field. Yet, on the cusps of both disciplines’
systematics, there is a set of interwoven concerns: the same human dilemmas about how
to go on living in the world.
V. Pantheism as a Paradigm

"The moral is simple: only partial perspective promises objective vision... [Partial] objectivity is about limited location and situated knowledge, not about transcendence and splitting of subject and object. In this way we might become answerable for what we learn how to see... Sustaining the possibility of webs of connections is called solidarity in politics and shared conversations in epistemology."

-Donna J. Haraway

Bridging the gap between nature and culture by way of both scientific discovery and narrativistic, authorial bias towards connectedness renders the world, at certain repeating times and places, unified and concurrent. The present concurrence is not one of rigorous logic. We have not civilized ourselves into another monotheism, in which absolute transcendence and unification is achieved in the form of principles, immaterial ideas. Rather, by incorporating the subject into science and incorporating culture into nature, we have arrived at a system of "situated knowledges" of truth. These situated knowledges are accepted as coexisting, despite the apparent contradictions that may arise and thereby upset our preferences for order and logic. Truth is now rendered elusive and continually becoming due to the diversity of those subjectivities apprehending/creating it, but it is not so extremely relativistic as to become always "the exception," as Barthes puts it. We will affirm that there are common elements of experience and, eventually knowledge. This is on the basis that we are all of the same stuff, which is a little bit less than an arbitrary faith, at best. With only this as our assumed common ground, our recourse to working knowledge must be by way of cooperation and sympathy for (rather than dominance over) the other.
In her book *Simians, Cyborgs, and Women*, Donna Haraway recommends a science that does not insist on a rigorous division between objectivity and subjectivity. She goes one step further than I do here, traversing the boundaries between nature and culture, and then, traversing the boundaries between nature and culture's contrivance's—technological contraptions, cyborgs. She considers the body a complicated web of communications technologies. Biological communications... neurotransmitters, scripted genetic coding, nervous messages racing on currents of electricity – these are only the first types of life giving-limiting-perpetuating technologies.

“My cyborg myth is about transgressed boundaries, potent fusions, and dangerous possibilities which progressive people might explore as one part of needed political work... A cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints... Communications sciences and biology are constructions of natural-technical objects of knowledge in which the difference between the machine and organism is thoroughly blurred; mind, body, and tool are on very intimate terms.”

By writing the body in terms of communications technology, Haraway is very clearly “blurring” the boundaries of body and machine. This rings true for me because the memory in my bodily tissue, my brain’s lobes, is slowing being replaced by the databanks in my computer. Without spellchecker, my secret would be revealed: that third graders are often better spellers than I am. The importance of this blurred boundary of definition – between me and my personal computer – is the same as when we collapse our notions of nature and culture. That is, there is an allowance being made in both cases for an interactive-not-either-or strategy for knowledge, action, agency and identity. As Haraway suggests, this interactive relationship has liberating implications. It will not liberate us from the limitations that nature has set; rather, it will liberate us from the narrative we have constructed for nature and help us to author a new one, one that is not
totally removed, “unlocatable” or “irresponsible” for the limitations and determinations of nature, but one that is inclined to assign alternative significances to those determinations.

Haraway’s blurring of basic dichotomies puts us in a position to re-ask the question about science: does the division between mind and body or subject and object, which takes its cognitive prompt from the psychological phenomenology of connectedness and separation leave us with a new epistemological scheme? If absolute objectivity or separateness from the body is relinquished as a feasible, desirable or even justifiable ambition, what can be salvaged of our notion of objectivity? For Haraway, partial knowledge is what should be built into our concept of objectivity.

“We need to learn in our bodies, endowed with primate colour and stereoscopic vision, how to attach the object to our theoretical and political scanners in order to name where we are and are not, in dimensions of mental and physical space we hardly know how to name.”

To call this kind of ambition for an explicitly stated subjectivity report “objective” seems like calling a red apple green. However, Haraway suggests that some trace of objectivity resides here. This is her way of making “…an argument for situated and embodied knowledges against various forms of unlocatable, and so irresponsible, knowledge claims. Irresponsible means unable to be called into account.” Absolute subjectivity is as undesirable then as rigorously distant, disassociated objectivity. For Haraway, “unlocatable” = “irresponsible.” And location must be sought on some common ground between autonomous subjectivities by way of mutually affirmative, mutually expressive communication.

“The alternative to relativism is partial, locatable, critical knowledges sustaining the possibility of webs of connections called solidarity in politics and shared conversations in epistemology.”
Shared conversations, with recourse to individual responsibility for claims, are conversations in a world that does not divide its subjects and its objects rigidly; it allows for some blurring, some contradiction, some messiness and some mind changing. It is the very non-essential, shared-substance of becoming. It is between the extremes of absolute objectivity and subjective relativism.

The basis for this blurring of boundaries, this bringing together – this reconciliation – is pantheism... the basis for the reconciliation between science and narrative is epistemological and academic pantheism. The basis for the reconciliation of the mind and the body, and on a larger scale, between nature and culture is ontological pantheism. McClintock’s theory of gene transposition and Keller’s research into slime mold aggregation can be put to work as evidence – not evidence as objective grounding, but as workable discovery and narrative creation – for the interconnectedness of nature and culture. One writes the other with its genes and the other, to some extent, chooses how to read, or how the writing will be “expressed.” There is a bond then, between these traditionally oppositional concepts; there is a common ground. We are working according to “a doctrine that the universe [is] conceived of as a whole: the doctrine that there is no God but the combined forces and laws that are manifested in the existing universe.”

The concept of difference must be worked into our pantheism because, while we agree to work according to an academic as well as ontological reconciliation, wherein there are no absolutely disparate fields of inquiry or existence, we also must agree to admit that we do not, and perhaps, can never know exactly the nature and intention of the apparent other. This is especially the case for academic fields as collective
consciousnesses. The cognitive themes of literary studies and those of science will always be only partial, according to whatever is directly proper to the discipline.

"The knowing self is partial in all of its guises, never finished, whole, simply there and original; it is always constructed and stitched together imperfectly, and therefore able to join with another, to see together without claiming to be another."\textsuperscript{161x}

The self, which is cognitively separate from the other – otherwise it can not be the self (inherent to the concept of the self is the separation from or proportional relationship with the other or the Other) – can still, regardless of its disconnectedness, engage the other so that the two can “see together.”

Seeing together necessarily involves an act of belief or affirmation beyond the apprehensions of whatever partiality. The fact that the necessity or prerequisite for a community is “seeing together” – which, inextricably involves seeing beyond individuality – implies a religious conception of the relationship between consciousness and world. Or, if we are to be precise, implies a partially religious conception and a partially objective – never complete – conception of the basis for knowledge. This is the reason I choose religious terminology.

If we are to put our pantheism into practice, we must consider the consequences for the subject and the object, which remain intact, but are more intimately related now. If we posit the object as becoming, as both influential/authorial over us and influenced/read by us, we must no longer treat it as passive or inert. Neither must we treat nature or some part of it as our “Master Molecule.” Instead, we must treat it as subject. For every self, as it is distinguished from the other, must affirm that that other is, indeed a subjective self, as well. This is the sameness in the other, the repetition in
difference, the pantheism at the base of our manifested individualized consciousnesses. This and no other is the equality we must affirm in order to make justice.

“...[Be] most insistent on some version of the world as active subject, not as resource to be mapped and appropriated in bourgeois, Marxist, or masculinist projects.”

Perhaps, treating the world as active subject will encourage a conversation between us. The academic conversation will be between science and narrative, whose boundaries should be partially, at times, transgressed; this will be the enactment of a reformatory cultural studies, a metametascience. And between nature and culture, whose cooperative, interactive relationship will be the constitutive give-and-take of our narrative of progress as we continue to discover and rediscover, construct and deconstruct it as a function of our ever-changing values. Admittedly, even reconciliation is a function of my values, my relatively arbitrary prioritizing of cooperation over domination and relation over disconnection.
I. Contextualizing Reconciliation

"It seems like this word always needs explanation... I mean "hegemony" here the same way that Michel Foucault tends to mean it: a co-dependent structure of knowledge/power relationships, in which even the dominated are playing an active, performative role.

The quotation is cited by E.O. Wilson at the beginning of Consilience


White, Hayden "Getting Out of History" from The Historical Dialectic p.147-148

The concepts are explicated in Buber’s book, I and Thou.

II. Reconciliation


Preface to The Origin of the Species by Walter Cronkite: Random House, Inc. New York, 1993; p.v

I am using the term to refer to Martin Buber’s concept of an “I/Thou” relationship, as he distinguishes it from an “I/It” relationship. The concepts are explicated in Buber’s book, I and Thou.

III. Science/Narrative

Introducing hybrid corn seed, which yielded a higher percentage of saleable cash crop for Canadian and American agriculture by way of gene technology.

Lewontin Biology as Ideology p.9-10

The Scientific Consciousness


A Psychoanalysis of the Authors of Objectivity: Reconciling Plato with “Pleasure”

Keller quoting: Bacon; p.36

Dover, K.J. Greek Homosexuality Vintage Books, New York, 1980; p.163

Kellerquot reflecting on Gender and Science p.32

Keller Reflections on Gender and Science p.13


Keller Reflections on Gender and Science p.17

Pleasure of the Text by Roland Barthes; p.61


The Newly Born Woman as it is reprinted in Modern Criticism and Theory: A Reader edited by David Lodge; Pearson Education Limited, New York, 2000; p.265

xxviii Keller, Evelyn Fox Reflections on Gender and Science p.13

xxix ibid. p.17

xxx Keller Reflections on Gender and Science p.13

xxxi Keller, Evelyn Fox Reflections on Gender and Science p.13

xxvii Cixous, Helene “Sorties” from The Newly Born Woman as it is reprinted in Modern Criticism and Theory: A Reader edited by David Lodge; Pearson Education Limited, New York, 2000; p.265

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Reading List for Metametascience Towards Reconciliation

1) The Structure of Scientific Revolutions Thomas Kuhn
2) The End of Science John Horgan
3) “Structure, Sign and Play in the Discourse of the Human Sciences” from Writing and Difference Jacques Derrida