

POSTMODERN [FN1] "PROGRESS": RECONSIDERING THE COPYRIGHT AND
PATENT POWER

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Most of us carry in our heart[s] the Jocasta who begs Oedipus for God's sake not to inquire further. [FN1]

As a strategic and emotional matter, I really am hostile to the Oedipal accounts and their mutants--not because I don't recognize their power but because I am too convinced of their power. [FN2]

[FN1]. Letter from Schopenhauer to Goethe, quoted in DIANE WOOD MIDDLEBROOK, ANNE SEXTON: A BIOGRAPHY 101 (1991) The quotation is the basis for the title of Sexton's poem, "For John, Who Begs Me Not to Enquire Further": "Not that it was beautiful,/ but that, in the end, there was / a certain sense of order there;/ something worth learning..." ANNE SEXTON, SELECTED POEMS OF ANNE SEXTON 26 (Diane Wood Middlebrook & Diana Hume George eds., 1988).

[FN2]. Cyborgs at Large: Interview with Donna Haraway, TECHNOCULTURE 9 (Constance Penley & Andrew Ross eds., 1991) [hereinafter Cyborgs at Large].

INTRODUCTION--OR WHY BE TRENDY?

Knowledge, as Oedipus discovered, can be destructive. Yet it also can be liberating. An idea is the ultimate renewable resource: we gain from Jocasta's (if not Jane's) pain. Like a perpetual motion machine, the force of an idea is undiminished by the number of times it is considered. Nor does being considered simultaneously by more than one person deprive an idea of its power. To the contrary, an idea's influence grows by being considered more than one time or by more than one person, and the consideration of an idea by others will lead to new ideas. Furthermore, the reflexivity of knowledge--that is, its capacity to influence human social practices, which in turn influence knowledge production--is a pervasive characteristic of our epoch of high modernity. [FN3] Tiresias guides us in the late twentieth century. [FN4]

What then is the mandate for Congress's copyright and patent power--its power with respect to knowledge? [FN5] Intellectual property scholars have not had the furious debates over original intent that have racked the ranks of constitutional law scholars over such topics, for example, as the Reconstruction amendments. [FN6] Moreover, because of the instrumental tone of the Copyright and Patent Clause ("to promote the Progress ... by securing"), no one truly disputes that such "Progress" is to be encouraged through the frankly instrumental use of laws. Thus, despite persistent undercurrents of natural law analysis, [FN7] *Lochner v. New York* [FN8] does not loom large in the intellectual property arena and most intellectual property scholars do not employ the rhetoric of fundamental rights or liberties. Some have posited that "Progress" is best promoted through market competition, [FN9] while others have found in the patent and copyright clause a mandate for innovation. [FN10] The courts have relied on these two main justificatory strands in intellectual property law through an ill-defined and dichotomous "incentive v. monopoly" paradigm. This doctrinal balancing test pits the encouragement provided to "Authors" and "Inventors" by the grant of limited rights against the dangers to the marketplace should those rights be over-extended into quasi-monopolies. [FN11] Innovation is aided by the former; competition hindered by the latter. [FN12] It is important, however, to recall that the actual constitutional text does not explicitly state these policies, nor do we have the benefit of extended contemporaneous accounts by

the Framers of the Constitution to guide us in our thinking. [FN13] In addition, it is not even altogether clear why "Progress" is ultimately desirable. Thus the relationship of "Progress" to values embedded within the Constitution deserves serious thought.

We can infer from the term "Progress of Science and useful Arts" an Enlightenment faith in knowledge, whether it be knowledge for its own sake or for other ends. Indeed, the existing meta-narratives of intellectual property law draw heavily, both in style and in substance, from the intellectual tradition of the Enlightenment. This tradition--what I will call throughout this article the modernist tradition [FN14]--accords "Progress" a privileged [FN15] conceptual status. Even this modernist tradition has not been mined completely for insights into the copyright and patent clause, however, for the standard legal interpretations of this clause have maintained a cheery and uncritical trust in "Progress" that ignores "the dark side of reason." [FN16] Turned on itself, reason inevitably confronts its own limits as a perceptual framework; the products of critical thought are themselves always subject to critique. But it is the postmodern critiques of the assumptions of modernism that most directly confront our Enlightenment-based romance with "Progress". A postmodern view of "Progress" rejects the view of "Progress" as a liberating upward trajectory. [FN17] A postmodernist asks in a much more insistent tone than a modernist: What is the nature of the "Progress" that is being promoted? And to what end? How does postmodernism really help us better understand the copyright and patent power (or as stated in the title to this section, "Why be trendy?")? I am not suggesting an analysis that would "turn every copyright and patent case into a mini-Marbury v. Madison" [FN18] or performance art. Rather, I believe the multiple perspectives of postmodernism help us to appreciate at least three broad prescriptions. The overall theme implied in these three items is that of stewardship--that the encouragement of knowledge production and knowledge deployment via the copyright and patent power is in the nature of a trust, of which the beneficiary is not just the American people or even human beings worldwide, but Gaia and all its inhabitants. [FN19] First, postmodern "Progress" deconstructs [FN20] the linear and forward nature of "Progress" (postmodern progress is circular, sideways, or even upside-down), thus accommodating calls for limits to growth such as the biologically-based sustainable development movement. [FN21] It also articulates the saturating, self-propagating, and iterative process of knowledge production, thus exposing the trustee role of Congress and the courts to the res of knowledge. [FN22] Postmodern "Progress" also recognizes the "global village" [FN23] phenomenon caused by the exponential increase in technological concentration and infiltration, thus highlighting both the need for distributional fairness of and decentralized control over knowledge, both within developing countries and between the developing and developed nations. [FN24]

A postmodern "Progress," then, would not simply be the increasing recognition of a plurality of claims and meanings, as some have described pure postmodern theory, [FN25] but would also be consistent with advancing certain normative themes. [FN26] To express the idea of stewardship, knowledge can be visualized as a natural resource commons, such as air or water, which is held in a public trust. [FN27] Such a public trust of information, upon which our interconnected lives must draw freely and which must be managed with extreme care by Congress and the courts, is an important yet highly undeveloped element of intellectual property law. Throughout this article, I will refer in shorthand to this concept of a public trust over a commons of information resources as the "Progress project." An alternative formulation of the "Progress" project is that all persons (not just authors and inventors) have a stake in--what could be termed a fundamental right of access to--this trust. This right is more basic, as a constitutional matter, than the provision of incentives to authors and inventors.

Postmodern "Progress" finally causes us to reconsider the freedom component of the "Progress" project. This component has been obscured by the modernist tradition's emphasis on sheer economic growth as a liberating force and even by critiques of that emphasis. Whether through economic theory or critical theory, modernists strive toward a utopian flame fueled by the increasing control of our natural and social world through the acquisition and manipulation of knowledge. Postmodernists, however, claim that increasing knowledge does not necessarily correspond to increasing control but merely to the reflexivity of knowledge. [FN28] Moreover, this type of "Progress," conceived in the Enlightenment fusion of religion with science, insufficiently

accounts for the fragile interdependence of all living things in the biosphere--something that biologists (admittedly trained squarely within the modernist tradition) attempt to bring to the attention of those in the other physical and human sciences. [FN29] This biological interdependence functions also as a metaphor for our social interdependence in the global village. What was missing throughout the modernist tradition until rather recently was the yellow light: caution about our ability to fashion a better world through direct knowledge manipulation per se. [FN30] In challenging the modernist tradition's direct causal equation, " 'Progress' of knowledge = progress," postmodernism causes us to reexamine the basic building blocks of our human liberty.

Part I of this article demonstrates the relative paucity of our conventional modernist understanding of the copyright and patent power by analyzing the rhetoric of recent decisions in the area of computer copyright law. Part II then compares the modern and postmodern views of "Progress." The first half of Part II traces the modernist concept of "Progress"; the second half describes the postmodern insistence that grand narratives such as "Progress" are self-deluding and examines the various normative programs tentatively suggested by a postmodern reading of "Progress." Part III articulates a right of access to knowledge that is a more fundamental constitutional mandate than that of providing incentives. Various writings of James Madison (who introduced the patent and copyright clause in the Constitutional convention) and Thomas Jefferson (who was the one of the first patent commissioners) indicate that property inheres in the first instance in an individual's freedom to use the knowledge of others rather than an individual's freedom to exclude others from the use of knowledge. These texts, associated strongly with Enlightenment thought, ironically link the seemingly irreconcilable modern and postmodern takes on "Progress." The "Progress" project then can be read more explicitly against a backdrop of access to knowledge as a fundamental right.

II. THE MISSING PROJECT OF PROGRESS: A RHETORICAL ANALYSIS

Courts interpreting the copyright and patent clause do not read the language of incentives against a background of individual rights of access to knowledge. Yet textual evidence suggests that the incentives provided by copyrights and patents are only second-order concerns which serve a higher purpose--the "Progress" project--which preserves and nurtures a commons of knowledge. When courts find that a particular slice of knowledge is not covered by a copyright or patent, their opinions seem unable to name the "Progress" project. The denial of property rights in knowledge is often accompanied by a rhetorical omission, as if it is almost counterintuitive to suggest that the "Progress" of knowledge is furthered by a finding of no copyright or patent right.

For example, the Supreme Court itself has inconsistently stated that the primary purpose of the patent and copyright clause is not to provide authors and inventors with incentives but rather to "promote the Progress of Science and useful Arts." [FN31] In other words, the provision of incentives to authors and inventors will not always coincide with the underlying objectives of that clause. Yet how are we to know when "Progress" is disserved by a grant of copyright or patent?

Congress has addressed this question by codifying certain legal standards that must be met before a copyright or patent is granted, and that presumably are indicia (however rough) of the promotion of "Progress." Thus, a work must be original before a copyright can issue, both in the sense of having some degree of originality and being original to the author applying for the copyright. [FN32] Moreover, a naked idea, no matter how original, does not suffice for protection; a copyright protects only an original expressive component of the idea. [FN33] Similarly, before a patent can issue to an inventor, the invention must meet the statutory requirements of utility, [FN34] novelty, [FN35] and non-obviousness. [FN36] Furthermore, under both the Copyright Act of 1976 and the Patent Act, [FN37] certain statutory subject matter is excluded from protection altogether. [FN38] Taken together, these statutory requirements are rough proxies for the constitutional mandate that only knowledge that contributes to the sum of human knowledge is accorded the status of property.

But these statutes are only the first cuts at defining protectable knowledge. For example, statutory subject matter is not self-evident. Whether patents

should issue for mathematical algorithms as a type of "process" has been a point of controversy between the Court of Appeals for the Federal Circuit and the Supreme Court. [FN39] The questions of whether copyright protection should extend to computer software, and to different aspects of computer software such as object code, [FN40] screen displays, or program structure, continue to give many courts pause. [FN41]

In addition, even the per se existence of a statutorily valid copyright or patent is not conclusive proof that the copyright or patent "promote[s] the Progress of Science and useful Arts." In the area of copyright law, courts have developed doctrines that differentiate between the validity and the scope of copyright protection. A work with a scanty expressive component, such as a computer-generated telephone directory, or one with many utilitarian features, such as a computer program, can have a thin, as opposed to broad, scope of copyright protection. [FN42] The scope of defenses, such as fair use in copyright law or the equitable defense of misuse in patent law is similarly accordion-like. [FN43] When ascertaining whether the underlying goals of copyright or patent law are furthered by the grant of a copyright or patent, courts often base their judgments on a balance between the benefits of providing authors and inventors with an "incentive" and the negative effects of a "monopoly" on certain information. [FN44]

However, this "incentive or monopoly" test is profoundly impoverished regarding the larger "Progress" project. The values underlying the refusal to designate any particular snippet of knowledge as protectable property are largely invisible. For instance, in *Feist Publications v. Rural Telephone Service Co. Inc.*, [FN45] the Supreme Court suggested that the overall purpose of the copyright and patent clause is simply to "advance the progress of science and art." [FN46] From this statement, it seems that mere accumulation of knowledge is the only significant constitutional concern. A few years earlier, the Court had stated that an "important public purpose of both a copyright and a patent ... is ... to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired." [FN47] This formulation seems to make the incentive or monopoly test into a constitutional requirement. The public's interest in the "free flow of ideas, information, and commerce" [FN48] is not more fundamental than the incentive to authors and inventors; rather, it competes with it.

Recent opinions in the computer copyright area mirror the Supreme Court's lack of vision with respect to the larger "Progress" project. [FN49] Various courts of appeals have had difficulty expressing the concept that knowledge should be kept in a trust that is publicly accessible. One example of this difficulty is the Second Circuit's opinion in *Computer Associates International, Inc. v. Altai, Inc.* [FN50] The Altai court faced an elusive issue: whether a computer program's non-literal elements (aspects of a computer program that are not code) [FN51] could receive copyright protection. The 1976 Copyright Act provides virtually no guidance on this question, either by way of direct statutory language or legislative history. [FN52] Direct copying of a code would be an infringement of the plaintiff's copyright [FN53] for two reasons: (1) Congress clearly wanted to protect some aspect of computer software; [FN54] and (2) computer code is analogous to a literary work (a category of work of authorship protected under the Copyright Act of 1976 [FN55]) such as a book. But the defendant Altai had taken great pains to ensure the new code was created independently of the plaintiff's code, although the underlying structures of the two programs were similar. [FN56] Independent creations, even if identical to the copyrighted work, are not actionable. The Altai court thus had to decide whether the plaintiff's program structure was protectable. [FN57]

The Third Circuit had previously held, in *Whelan Associates v. Jaslow Dental Laboratory*, [FN58] that certain non-literal elements of computer software were protectable by copyright. [FN59] The Third Circuit's test was widely criticized because it protected practically every aspect of a computer program besides its purpose (which the court equated to a non-protectable "idea"). [FN60] The Altai court, by contrast, opted for a less protective test, the "abstraction-filtration-comparison" test, and ultimately decided that none of the non-literal elements of plaintiff's program merited copyright protection. [FN61]

What is of interest here is not the doctrinal difference between the Third Circuit's test and that of the Second Circuit, but instead the absence of language and concepts with which the Second Circuit could justify its refusal to accord copyright protection to the knowledge embodied in program structure. The opinion is profoundly devoid of persuasive reasons to keep the program structure accessible, although the court clearly wanted to reason in that direction. For example, the *Altai* court whittled away at the property right through what it called a "filtration" step, which is basically an assignment of presumptively protected expressive aspects of the program back to the commons of unprotected knowledge. [FN62] Part of the court's filtration test was based on the concept of the public domain, a term that has come to mean non-appropriable knowledge. [FN63] With respect to knowledge in the public domain, the court stated:

Such material is free for the taking and cannot be appropriated by a single author even though it is included in a copyrighted work. We see no reason to make an exception to this rule for elements of a computer program that have entered the public domain by virtue of freely accessible program exchanges and the like. [FN64]

But the court never discussed the crucial question of why certain knowledge is kept within the public domain and is therefore inappropriable, nor does it describe (except by a throw-away reference to program exchanges) how one determines whether a bit of knowledge is in the public domain. [FN65] The public domain is simply one of three prongs of the filtration test, and its nurturance is not considered to be a crucial policy factor. [FN66]

Under the section of the opinion entitled "Policy Considerations," the strongest statement the *Altai* court could make was that, "The interest of the copyright law is not in simply conferring a monopoly on industrious persons, but in advancing the public welfare through rewarding artistic creativity, in a manner that permits the free use and development of non-protectable ideas and processes." [FN67] This formulation of the policies underlying copyright law begins with the presumption of protectability, for it is only after a chunk of knowledge is deemed "non-protectable" that its free use is permitted.

The term "public welfare" is linked to "rewarding artistic creativity." By contrast, non-protectability is not determined by reference to any specific goal or value. There is a blank where there should be a term that expresses a vital goal of our society--the "Progress" project of a commons of knowledge held in trust.

The *Altai* court tried to fill in this blank with two Supreme Court cases, *Twentieth Century Music Corp. v. Aiken* [FN68] and *Feist Publications v. Rural Telephone Service Co. Inc.* [FN69] The quote selected from *Aiken*, that "private motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts." [FN70] provides partial guidance. The quote indicates that protection under copyright law is not always a given because the greater good of the public availability of that knowledge is not always served by a grant of copyright. This "public availability" justification conveys, however tersely, the missing "Progress" project. But the Second Circuit's reliance on the language in *Feist*--that "the primary objective of copyright is not to reward the labor of authors," [FN71]--does not give us insight into the blank term. Rather, the *Altai* court's use of *Feist* highlights the absence of a rhetorical opposition to the "reward of artistic creativity." [FN72]

Setting aside for a moment the fact that *Feist* dealt with factual compilations, which have had an uneasy relationship to copyright law for very different reasons than those for computer software, [FN73] what are the other possible objectives of copyright law? The *Altai* court never answers this obvious question, which is only partially answered by the *Feist* court's ending to its sentence, namely, that the primary objective of copyright is to "... promote the Progress of Science and useful Arts." [FN74] The Supreme Court's own rationale, however, is unfinished because it omits the larger value or goal that is served by promoting such "Progress".

The *Altai* court's reliance on *Feist* is also revealing because the nature of the knowledge at issue in the two cases is highly dissimilar. Groping for a policy basis for its decision, the *Altai* court relied on the straw argument provided by the facts of *Feist*. [FN75] The *Feist* court had rejected the most extreme form of incentive justification: that "sweat of the brow" alone

justifies protection whether or not the product of that sweat has any expression unique to the author. [FN76] The knowledge in Feist was simply a collection of facts (entries in a telephone directory) that had little original expression in and of themselves. [FN77] The knowledge in Altai was of an altogether different sort, as computer program structures express an enormous amount of original expression.

The Altai opinion, although analytically able, is peculiarly unable to support emphatically its judgment. The opinion demonstrates the lack of depth to which we have explored the mandates underlying our legal treatment of knowledge. The court's decisional urge, which stems from the problematic application of the low standards of originality for copyright protection to a high-tech product with utilitarian characteristics, could not be framed in terms that give the decision much persuasive impact. The opinion feels practical rather than visionary, although it is an important opinion in a controversial area of copyright law. The court voices its dilemma in the following, somewhat elliptical manner: "Generally, we think that copyright registration--with its indiscriminating availability--is not ideally suited to deal with the highly dynamic technology of computer science." [FN78] The Altai court faced the problem of not having a sufficiently rich "ground" or semiotic context for its decision. [FN79] If the mandate behind the "Progress" of knowledge were more fully explored and articulated, then the Altai court could have avoided the conceptual monopoly or incentive trap.

At least one other recent court of appeals opinion in the area of computer copyright is equally tongue-tied regarding the larger "Progress" project. In *Sega Enterprises, Ltd. v. Accolade, Inc.*, [FN80] the Ninth Circuit described the "public benefit" that may result from an otherwise infringing use of a copyrighted work. [FN81] Like Altai, this decision favored the allegedly infringing defendant. [FN82] In the context of a fair use analysis, [FN83] the court described public benefit as "an increase in the number of independently designed video game programs offered for use with the Genesis console" and added that "It is precisely this growth in creative expression, based on the dissemination of other creative works and the unprotected ideas contained in those works, that the Copyright Act was intended to promote." [FN84] But is this "growth in creative expression" to be valued simply for its own sake? The court never elaborated on this assertion but simply repeated it, mantra-like, when later summarizing its findings with respect to fair use. [FN85] In a later section, the court shifted ground, returning to the good old incentive justification by suggesting that the "fundamental purpose of the Copyright Act is to encourage the production of original works...." [FN86]

My quibbles with Altai and other opinions are not merely aesthetic. By "rhetorical analysis," I do not mean merely to analyze how persuasive a court's argument is or ought to be. My point is that all of us who think and write about intellectual property are coping with an omission: the missing project of "Progress." In the difficult, boundary-making cases such as Altai, this absence is keenly felt. But even the Supreme Court in Feist, faced with much better facts than the Second Circuit had at its disposal in Altai, could only muster a watered-down endorsement of the larger project of "Progress," stating that "copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work.... This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art." [FN87] The missing project of "Progress" must be found and articulated. The search commences in the following section.

II. THE PROJECT OF "PROGRESS"

A. "Progress" and Modernity

The incentive or monopoly balancing test is an incomplete method of determining whether a patent or copyright promotes "Progress." The question of whether "Progress" is promoted can only be answered by reference to what we are attempting to do by promoting the "Progress of Science and Useful Arts." In other words, what is the project of "Progress?" One possibility raised by modernist values is progress itself, suggesting a recursivity within the clause. Indeed, as we have seen, courts often conflate this progress (in the larger sense but with a small "p") with the simple increase in the sum of human knowledge represented by "Progress" in the copyright and patent clause.

From the modernist perspective, "Science and useful Arts" can be reduced to the single term "knowledge." "Science" in the mid-eighteenth century did not have the narrow meaning that we ascribe to it today. Rather, it referred to " 'a whole body of regular or methodological observations or propositions ... concerning any subject of speculation' ... a kind of knowledge or argument, rather than a kind of subject." [FN88] Only recently has the term come to mean "the systemized knowledge of nature and the physical world." [FN89] Thus, the Framers of the Constitution meant something broader in scope than we do now when we refer to the word "science."

In the mid-eighteenth century, "science" was often contrasted to "Art," with the former connoting theoretical knowledge of any kind, the latter connoting skill or applied knowledge. [FN90] Thus, its juxtaposition to "useful Arts" in the patent and copyright clause was not unusual. [FN91] The "useful Arts," what we would now call applied science or technology, were often distinguished from "fine arts," then as now denoting art that is more aesthetic than practical, such as poetry, painting, sculpture, and the like. [FN92] We can therefore refer to "Progress of Science and useful Arts" in shorthand as the "Progress" of knowledge, as that is what the term has consistently meant over the past two hundred years.

"Progress" of knowledge is an essential tenet of modernism, which in all its guises is characterized by optimism in the effects of progress from and through the liberating power of knowledge. [FN93] The modernist faith in the emancipatory potential of knowledge points to some other larger goal of the copyright and patent clause aside from the mere accumulation of knowledge. That "Progress" is intended in turn to promote progress is obvious once one considers the Enlightenment-influenced beliefs prevalent at the time the patent and copyright clause came into being.

The "Progress" mandate is tied directly to the various Enlightenment projects.

In his study of the influence of Enlightenment thought on American intellectual history, Henry F. May claims that Enlightenment thought existed with religion and as religion. [FN94] He defines Enlightenment as religion bipartitely: "First, that the present age is more enlightened than the past; and second, that we understand nature and human s best through the use of our natural faculties.... All are excluded, that is, who think that the surest guide for human beings is revelation, tradition, or illumination." [FN95] The faith in reason characteristic of American Enlightenment thought relies heavily on the widespread and free availability of knowledge.

May's spare definition of Enlightenment as faith, which is shaped by the problem of having to include many diverse and contradictory Enlightenment thinkers, does not quite capture what is so inevitably good about progress. At least three different strains in American intellectual thought combined to link the idea of progress with the idea of improvement. These can be classified roughly into the millenarian, pragmatic, and growth ideologies.

The millenarian strain derived from the marriage of reason to religion to produce an idea of progress "in the arts and sciences [that] is held to be at once a sign of the imminence of the golden age of the spirit on earth and a cause of this imminence." [FN96] This utopian faith in progress produced an optimism that knowledge will surely yield good results rather than bad, and improvements rather than regressions. The idea of improvement in this utopian or Christian millenarian strain of progress was enhanced by the pragmatic ideology of progress. This ideology focused on the deliberate, rational acts of persons that increasingly brought the natural and social world under control. [FN97] These utopian and pragmatic elements in the idea of progress were captured by the assumption of limitless economic growth in conjunction with what Christopher Lasch termed "Adam Smith's r ehabilitation of d esire." [FN98] He wrote:

It was not the secularization of the Kingdom of God or even the new stress on processes intrinsic to historical development that chiefly distinguished progressive ideology from earlier views of history. Its original appeal and its continuing plausibility derived from the more specific assumption that insatiable appetites, formerly condemned as a source of social instability and personal unhappiness, could drive the economic machine--just as man's insatiable curiosity drove the scientific project--and thus ensure a neverending expansion of productive forces. [FN99]

In Lasch's view, material growth, rather than material or moral improvement, was inevitable once progress was linked to unrestrained desire. [FN100] This growth ideology nonetheless relies on the idea of forward movement through knowledge manipulable by humankind. "Progress" is inextricable from the "Progress" of knowledge.

This "Progress" of knowledge catalyzes as well as mirrors the historical progress of increasingly enlightened thought and action. Central to the modernist tradition is a type of "Progress" defined by the "privileging of ego-centered reason... in which the rationalist self knows few (if any) limits on its ability to understand and rationalize the world." [FN101] Faith in reason replaces faith. Few phenomena are considered incapable of being apprehended fully by well-reasoned thought. Enlightenment as faith does not recognize limits to its transformative potential. The Enlightenment-influenced American intellect viewed (and continues to view) progress as the path to a permanently improved condition of life for humankind. Whether or not modernist progress is primarily associated with utopian, pragmatic, or growth perspectives, without it one cannot meaningfully interpret the constitutional mandate for "Progress of Science and useful Arts." The encouragement of knowledge is a key element of the " 'master narratives' of the Enlightenment--progress toward material well-being, truth, and justice (... or bread, knowledge, and freedom)." [FN102] It is also a key precondition for these narratives.

Regarding justice, Americans of course were intensely involved in the creation of a practical political experiment that had as its purpose the furtherance of human "[l]ife, [l]iberty, and the [p]ursuit of [h]appiness." [FN103] "Useful Arts" and "Science" presumably aided in achieving these political ends, as an enlightened citizenry could better engage in building a strong republic and in participatory democracy. [FN104] A government's power to regulate information through the grant copyrights is historically associated with its policies governing the freedom of the press and the freedom of expression, [FN105] as well as its policies on universal education. [FN106]

But Enlightenment as faith spawned numerous projects for human self-actualization in addition to political ones. One end was the improvement of socioeconomic conditions, which at that time were often unforgiving, even for the well off. The first American association of scientists, the American Philosophical Society, was concerned with "all ... experiments that let light into the nature of things, tend to increase the power of man over matter, and multiply the conveniences or pleasures of life." [FN107]

Americans were also keenly aware of the disadvantages in their socioeconomic and cultural status vis-a-vis European nations. Donald Meyer describes how "[t]hroughout most of the eighteenth century the American provincials were dependent on England particularly for their books and for most of the other implements of culture, including everything from precision tools and scientific apparatus to literary style and ideas." [FN108] In the diaries written in Europe while the Constitution was in the process of being framed, Jefferson listed "Objects Worthy of Attention for Americans," including "Agriculture," with respect to which he stated: "Everything belonging to this art and whatever is related to it. Useful or agreeable animals that might be transported to America. New species of plants for the farm or garden, according to the climates of the different states." [FN109] At the time, the United States was a net importer of ideas and technology; in other words, a lesser developed country. [FN110] Thus, another end to which the stimulus of "useful Arts" and "Science" could be harnessed was an improved global socioeconomic status. [FN111]

Lasch writes that "the idea of democracy came to be associated more and more closely with the prospect of universal abundance." [FN112] The Enlightenment conflation of political well-being ("justice") with economic well-being ("bread") always existed, although perhaps at first there was less emphasis on sheer growth and more on the improvement of adverse conditions. But whatever the political or economic ends to which "useful Arts" and "Science" were practically directed, they seemed to occupy a unique position within Enlightenment as faith. Observation of phenomena through one's natural faculties played a fundamental role within this faith. Even the most deeply skeptical of continental Enlightenment thinkers, those who questioned the idea of reason, thought positively of science, particularly what we now call

applied science. [FN113] Yet it is important to note "the Americans drew not only on science but on what Jefferson called 'the harmonizing sentiments of the day' for moral guidance." [FN114] Knowledge was important, even essential, to the democracy project; scientific validity was not, however, the sine qua non of its utility. Knowledge evolved symbiotically with the uses to which it was put. This point is one link between the modernist and postmodernist traditions, discussed in the next section.

The "Progress" project of the patent and copyright clause is twined with the progress mandate of the Enlightenment. Recall the second part of May's definition of Enlightenment as religion: "[T]hat we understand nature and man best through the use of our natural faculties." [FN115] This principle accordingly nourished a role of knowledge that is essential, indeed inseparable, from whatever progress project was at hand. As one writer noted:

[I]t is the object of scientific research to understand the human benefits for which creation was intended... [A]ny discovery of the workings of nature, even any particular fact, from a new plant to mastodon bones ... was bound to prove useful to [hu]man[s]--that was how all nature had been framed. [FN116]

While the enthusiastically teleological view of science and nature shared by the members of the American Philosophical Society prior to the American Revolution [FN117] is not the dominant view today, the basic Enlightenment take on knowledge leaves more than a mere residue on our current endeavors. The essential characteristics of the Enlightenment as faith continue to dominate legal as well as other forms of discourse. Enlightenment perspectives which are still very much with us today include the privileging of individual-centered reasoning as a primary means of apprehending the world, the emphasis on empiricism or positivism as required characteristics of any intellectual project of integrity, and the continual insistence (even on the part of those deeply suspicious of both individual-centered reasoning and of empiricist and positivist approaches) that critical thinking (a more "progressive" way of thinking) will point the way to transformative action. [FN118] But these perspectives are increasingly challenged and critiqued by postmodernist theory, and it is to these challenges and critiques that I now turn.

B. "Progress" and Postmodernity

If "a distinctive feature of [the historical age of] modernity is its faith in the link between human power and human freedom," [FN119] a distinctive feature of postmodern critiques of the assumptions of modernity can be performed in a question which I would like you, dear reader, to answer immediately: What kind of music shall I buy? [FN120]

This question evidences one characteristic of postmodernism: acts, including written texts, are necessarily embedded in a culture of consumption created by communication technology such as sound recordings. [FN121] This communication technology (protected largely by intellectual property law) transforms modern society into the postmodern information society, a society in which knowledge continually reflects back into social practices, which in turn create knowledge. [FN122] And asking you, the anonymous reader, to spontaneously answer the needs of my self (whom you do not know), highlights the postmodern view that I am not an autonomous, self-directing agent that reaches normative decisions through reasoned thought. [FN123] The postmodern self that I am is a contingent self, defined through contingent structures within language and culture, [FN124] within the context of "accelerating bureaucratization, commodification and commercialization of legal and other ... systems." [FN125] Yet another: the grand narratives of law--liberty, justice, property (yes, even civil procedure)--exist only through the local practices of these decentered selves. Global intersects with local to produce "glocality." [FN126] Just one more: the text itself--as well as my writing it, your reading it, our thinking about it--is an act even when it is not self-consciously an act (as in a command or a question); and our intellectual and other responses to it are acts. Knowledge is performed. [FN127] Finally (fooled you!), the question illustrates the style and substance of postmodernism as "following ... the ironic twists and turns of difference, discontinuity, and disjuncture." [FN128] What does music have to do, have to do with it, to paraphrase Tina Turner? [FN129]

Critiques of progress that derive from the modernist tradition share a focus on the negative effects of progress: that the largest hurdle facing efforts to build a more satisfying society may be "a distinctively modern faith in technology...." [FN130] From postmodern perspectives (to the extent they can be lumped together), the problem with progress, like the trouble with tribbles, is even more manifold. Beyond the recognition that material progress does not necessarily lead to an improved way of life, only to a different one, postmodernism rejects progress as one of the delusionary grand narratives of the Enlightenment. The Enlightenment views of progress inscribe in it a universality as well as a forward linearity that is inconsistent with progress being "made" by acts of contingently located individuals. [FN131] Rather than relying on concepts such as a progress that derives in a direct linear fashion from knowledge production (mastodon bones = facts = utility to humans = better social/political/economic organizations = heaven on earth), postmodernists "affirm instead the infinite play of desire, non-identity, difference, repetition and displacement earlier thinkers had decried as an expression of alienation and estrangement." [FN132] Postmodern "Progress," unlike modern "Progress," lacks the latter's knee-jerk faith in the emancipatory potential of progress per se, but not just because the negative effects of progress have been revealed. It does so because that Enlightenment view of progress is insufficiently attentive to the everyday acts, which may or may not be emancipatory, of the decentered individual. [FN133]

Yet, importantly, a postmodern "Progress" is not defined simply by the eschewal of the grand story line of modern progress. "Postmodern" progress is progress that is consistent with the "bottom-up" approach of postmodernism, [FN134] one that recognizes that "progress"ive acts may be backward as well as forward, perhaps sideways, and most often circular (as exemplified by the accelerated reflexivity of knowledge [FN135]). Thus it more readily accommodates limits to growth, such as the calls for sustainable development. It is one that operates "self-consciously" within a global context of information technology, and thus pays heed to differences in access to information and to the consequences of knowledge distribution. It is also one that encourages the iterative (though erratic) relation of knowledge to human social practices--the perpetual feedback of information to human beings who in turn act on that information, changing it in the process. Postmodern "Progress," therefore, necessarily changes the relatively undifferentiated incentive or monopoly doctrinal framework that characterizes current intellectual property case law.

Challenges to the promise of material well-being abound in the late twentieth century. Each example of a technological fix such as the polio vaccine can be countered by an example of a technologically generated problem such as acid rain. Optimism in a progress without externalities has been questioned and found wanting. Perhaps the main hubris of Enlightenment as faith is its premise of the idea of limitless growth, a premise whose falseness is now attracting widespread attention. [FN136] Fused with the consumer-driven economy, the modern idea of "Progress" no longer recognizes the temporal, spatial, and moral limits that characterized previous ideologies, both religious and political. The promise of universal abundance distributed in some fashion to all of humankind provided a social justification for an enterprise that would be otherwise based solely on individual desire. [FN137]

That quest for universal abundance is now deeply suspect. [FN138] A spectacular increase in growth has not resulted in a minimally acceptable standard of living for even a quarter of the world's population. [FN139] Progress's

best line of defense, ... [one that] links progress to an indefinite expansion of the demand for consumer goods[,] ... presupposes conditions that no longer obtain. It presupposes a constant revision of material expectations, a never-ending redefinition of luxuries as necessities, continual incorporation of new groups into the culture of consumption, and ultimately the creation of a global market that embraces populations formerly excluded from any reasonable expectation of affluence. [FN140]

Recent estimates of the increase in industrial output that would be required to place developing countries on a consumption par with industrialized countries by the time the world population stabilizes at some point in the

next century indicate that such output would have to be five to ten times what it is today. [FN141] It is unlikely, however, that these prerequisites to universal abundance are environmentally sustainable. The technologies upon which the developed world currently relies prey upon resources that in some cases are reaching their limits. Aside from the depletion of natural resources, industrialization creates major externalities. In the two-year period during which the World Commission on Environment and Development undertook to study the concept of sustainable development, four major industrial accidents occurred, including the incidents at Bhopal and Chernobyl. [FN142] A biologist has predicted that one-fifth or more of the world's species of plants and animals could disappear within the next 30 years of increasing development. [FN143] The tissue of the ecosystem, of which humans are only one (albeit very powerful) part, and on which they depend, is fraying at a drastic rate. Postmodern "Progress" incorporates ecologically-based limits to economic growth, as well as the need for the redistribution of existing material wealth within present and between present and future generations. [FN144] That is, progress moves backwards and sideways, as well as forward.

While economic growth has provided the majority of Americans with an extremely elevated standard of living (evidenced by the vast quantities of music from which to choose), it has also changed the very nature of our participatory democracy. [FN145] The information saturation affects our social, cultural, and ultimately political practices profoundly. (Although this claim might seem to move from universal to particular in violation of one of the tenets of postmodernism, postmodernists are neither ahistorical nor completely severed from structural notions of economy, society, and polity.) [FN146] Even within a modernist discourse that has experienced the negative consequences of technology, technologically optimistic readings of this change outshout the more cautionary accounts. [FN147] This pervasive infusion of media in American lives is like a carnival of images, a cause for and instantiation of Dionysian celebration by some self-described communication junkies. [FN148] The technologies for collecting, organizing, and distributing information create an unparalleled access into (or at least observation of) the formal political process [FN149] and create new opportunities for grass-roots political participation.

Yet, as with unadulterated material growth, an Orwellian dark side exists to this increased access to information: a decrease in grass-roots control over the use and consequences of information. This loss of control has many sources. In the highly industrialized countries like the United States, a relatively small number of giant private entities control imagery through intellectual property laws. [FN150] Criticism, mockery, or the construction of countervailing images have become increasingly difficult endeavors, even if performed by other corporate entities, much less individuals. [FN151] Yet American media culture is not passively consumed. Fans of television shows, movies, comic books, and rock bands themselves participate in the creation of that culture. Henry Jenkins has observed that pop culture "fans passionately embrace favored texts and attempt to integrate media representations within their own social experience. ... Such participation challenges the very notion of literature as a kind of private property to be controlled by textual producers and their academic interpreters." [FN152] Rosemary Coombe argues that the postmodern individual's response to media images is itself a creative and ultimately political act that militates against the overprotection of shared cultural imagery by trademark and right of publicity laws. [FN153]

Moreover, through recent technological developments, the United States information and communication industries are on the cusp of a corporate concentration of previously unimaginable proportions. A "data highway" of communications networks will impact virtually every home and office. Government agencies, [FN154] cable television companies, newspaper publishing empires, telephone companies, entertainment and information conglomerates, and computer companies are motivated into partial cooperation by the beckoning billion-dollar markets of high-definition television, interactive shopping, and video-on-demand. [FN155] This commercial, "private" focus has already impacted the debate on the terms and conditions of access to this data highway; cultural and political expression is taking a back seat to economic concerns. [FN156] Intellectual property law has not developed a vocabulary adequate to express the need for brakes or checks on the control of information by the private sector. If one or two corporate

conglomerates, such as AT & T or Time/Warner, control both phone and cable lines for the data highway, as is very possible, [FN157] it seems likely that such highly concentrated ownership will reduce, rather than increase, the ability of ordinary citizens to participate in their political environment, both through suppression of "objectionable" information and through the necessary decrease in diversity of information should access to the data highway be controlled by a few rather than by the many.

The Altai [FN158] case illustrates how crucial intellectual property laws are to any information policies that would apply to a postmodern "information society" dominated by privately-owned industries. Interoperability and open architecture (both in "technical architecture, industry structure, and access to networks" [FN159]) of computer systems are key components to any decentralized, grass-roots participation in the data highway. [FN160] These features would allow small communities of individuals (e.g., NFL-hating, recovering shopaholics-who-worship-Star Trek: The Next Generation) to communicate with each other through the same cable lines that support Monday Night Football and the QVC Home Shopping Channel. Yet we have seen in section I how difficult it is for courts, such as those in Altai and Sega, to beat back the incentive argument that is profoundly embedded in standard copyright doctrine. Any attempt to prevent the interoperability of systems will have the strong semiotic grounding of incentive. The courts' inarticulate responses to this incentive argument illustrate just how important it is to develop a vocabulary within intellectual property doctrine that is able to express important countervailing public interests. The danger of monopoly, the accumulation of knowledge, or even the free use of ideas are insufficient conceptual constructs. Informed by postmodernism, the "Progress" project demands a richer lexicon that takes into account the public interest in access to knowledge, in order to retain and exercise cultural and political control in an environment of an increasingly private concentration of information.

As Sega [FN161] also demonstrates, doctrine which has developed around the fair use defense to copyright infringement is affected by the underlying lack of vision in the modernist tradition's "Progress" project. Although the fair use defense provides the best statutory basis for reclaiming the cultural and political values that are thrown into relief by postmodern "Progress," the defense is threatened by the overly-narrow reading that has been accorded to it by some courts [FN162] and by the continuing effort of certain computer industry interests to restrict its interpretation even further. [FN163] Copyright law must be able to articulate why open architecture and interoperability of systems are fundamentally desirable, not as an economic matter but because they promote grass-roots democracy and a diversity of viewpoints.

Within the lesser developed world, where "bread" issues predominate, the information "tragedy" stems largely from the disparity in information resources between the developed and developing worlds [FN164] rather than between the public and private interests. Technology developed within the context of a highly industrialized country with predominantly Western values may be exported with little consideration of its appropriateness for any particular developing country. [FN165] A coercive transfer of technology represents a loss of control over the conditions of access to knowledge. [FN166] Conversely, certain types of technology could be very helpful to the developing world but are not transferred due to cultural and political differences regarding the efficacy of intellectual property laws. For example, many lesser developed, and even moderately industrialized, countries refuse to allow pharmaceuticals to be patented. The primary reason for this is that pharmaceutical prices would then rise, impeding consumer access to the benefits of this technology. [FN167] Western drug companies view this simply as a denial of fair market access. [FN168] The exclusive focus by the developing world on market access and market protection delegitimizes concerns of countries with a relative lack of access to highly specialized knowledge. Postmodern "Progress" would facilitate decision-making by the developing world over whether knowledge should be made available, and if so, on what terms. Knowledge (in particular, the "useful Arts") is not inevitably good, but must be assessed in relation to other needs. Thus, a highly industrialized country that needs access to technology in order to increase market share in other highly industrialized countries should have a higher standard of intellectual property protection than would a less developed country that needs access to technology in order to provide basic health care services.

Again, this type of "Progress" differs fundamentally from the concept of inexorable advancement of knowledge that is over-represented in the concept of "Progress" developed via the modernist tradition. [FN169] In a postmodern reading of "Progress," the copyright and patent power is interpreted against a complex context of disparities in control over knowledge rather than simply against the provision of incentives to inventors.

Can a modern "Progress" that is aware of its flawed assumptions, or a postmodern "Progress," reinscribe meaning into the copyright and patent power?

The prospect of postmodern "Progress" is uncertain. Knowledge has numerous effects, both good and bad. Even assuming the death of the modernist tradition (which, according to some postmodernists themselves, is greatly exaggerated), [FN170] "Progress" is not a concept devoid of utopian content. Knowledge holds for humans the idea of renewability; unlike natural resources, knowledge cannot be depleted through use. Knowledge, moreover, has a reflexive as well as increasingly saturated relationship to human social practices that makes access to it a necessary component of human freedom. The iterative effects of postmodern knowledge are not always within our control. Nonetheless, since "the chronic revision of social practices in the light of knowledge about those practices is part of the very tissue of modern institutions," [FN171] even-handed access to knowledge is a prerequisite for democratic decision-making. Knowledge, as the Framers recognized (and as postmodernists affirm), is an important tool (act). It has a liberationist role within a tragically aware modern or even postmodern "Progress." [FN172]

III. ORIGINALITY AND INTENT

Ironically, the works of two Framers of the Constitution closely associated with the copyright and patent power--James Madison and Thomas Jefferson--give us a textual basis (or if you prefer, a postmodern act) that links the Enlightenment to the postmodern "Progress" project. [FN173] Although knowledge was certainly essential to the Enlightenment project of progress, the relation of knowledge to the other constituent elements of the constitutional framework (life, liberty, happiness, property) is not resolved in the constitutional text itself, just as the relationship among these other elements was left unresolved. [FN174] In light of the Enlightenment emphasis on the capacity of the intellect in general, and the utility of facts and scientific observation in particular, both Madison's and Jefferson's ideas on property indicate that access to knowledge might be a fundamental civil right, and freedom to apply that knowledge to a specific task a fundamental civil liberty. Identifying these strains within their work not only gives more depth to the modern views of progress, but also underscores the availability of the constitutional text for postmodern progress.

A. Madison's Views

As Jennifer Nedelsky writes, it was not possession or use of property that was the starting point for Madison's discussion of property rights, but rather something quite different:

Madison's claim for the priority of property in The Federalist, No. 10, is very special and precise: the first object of government is the protection of "the faculties of men from which the rights of property originate," namely, "the different and unequal faculties of acquiring property." ... But what did it mean to protect "the different and unequal faculties of acquiring property?" [FN175]

Madison's 1792 article on property gives us an insight: "[Man] has an equal property in the free use of his faculties and free choice of the objects on which to employ them." [FN176] Moreover, it "is not a just government, nor is property secure under it, where arbitrary restrictions, exemptions, and monopolies deny to part of its citizens that free use of their faculties, and free choice of their occupations, which ... are the means of acquiring property." [FN177] In the context of the Enlightenment faith, Madison could very well have meant, by "free use of ... faculties," the freedom of a person's intellect and creativity. That is, freedom to have and to use ideas, to apprehend the world of which she is a part, and to put the resulting knowledge to use. [FN178] Laura Underkuffler claims Madison's "broader understanding of property ... included rights to freedom of conscience, freedom of expression, physical liberty, and the ability to use one's intelligence and creative powers, which is radically different from the ordinary understanding of property today." [FN179]

Madison would accord the free exercise of intellect and creativity privileged status as property, [FN180] as well as the fruits of that free exercise. He wrote, "In a word, as a man is said to have a right to his property, he may be equally said to have a property in his rights." [FN181] Madison's conception of freedom to use knowledge seems radically different from the current legal construct of intellectual property. At the same time, this conception is very consistent with the postmodern view of knowledge as a constitutive act. That is, it is the individual's ability to use knowledge to gain property, rather than the individual's ability to protect knowledge already gained, that Madison sought to protect (as property) in the first instance. Under this view, freedom to gain knowledge and to apply that knowledge to useful ends would be a fundamental civil liberty.

Is there an inconsistency in Madison's simultaneous acknowledgement of property as knowledge and knowledge as property? For many reasons, I do not believe that any inconsistency (even assuming it existed) is problematic. Neither Madison nor Jefferson (who I will discuss below) had a unified narrative of intellectual property that a reason-demanding modernist might want as an ultimate verification of knowledge. But postmodernism does not demand consistency, and in fact expects and exalts inconsistency as being a defining characteristic of a more authentic form of knowledge. The rationalist's insistence on an internally logical, consistent narrative of Madison's thoughts on intellectual property is simply irrelevant to a postmodernist.

Moreover, any inconsistency between intellectual property as access to knowledge and as the protection of the fruits of one's intellect seems to be inscribed in the copyright and patent clause itself--and this is precisely what postmodern theory (in particular, the practice of deconstruction) shows. Scholars have inferred from Madison's *The Federalist* No. 43, [FN182] and from the fact that he introduced the copyright clause into the proceedings of the Constitutional Convention, a commitment only to the latter definition of property. [FN183] Yet both texts suggest with equal persuasion that Madison was prepared to allow inconsistent conceptualizations of intellectual property. The copyright and patent clause does not authorize incentives to all inventors and authors for any concepts, but only to those who would "promote the Progress of Science and useful Arts." As discussed above, the text does not decide for us how to determine whether the grant of patent or copyright would encourage knowledge, and for what end.

Similarly, *The Federalist* No. 43 states with respect to the patent and copyright clause that "[t]he public good fully coincides ... with the claims of individuals." [FN184] In a postmodern framework, this assertion does not necessarily contradict Madison's definition of property as inhering in access to information, because the ambiguity in the text is something to be explored rather than resolved. But to satisfy a modernist, any such inconsistency may have been deliberate because as a matter of rhetorical (and ultimately political) strategy, Madison claimed repeatedly throughout the *Federalist* papers that there is no contradiction between simultaneously maximizing self-interest and the public good. [FN185]

Another possible modernist reason for this apparent inconsistency, and one about which Madison could not have been self-conscious, is that the subject matter of the early copyright statutes was so narrow so as not to threaten access to knowledge, [FN186] and therefore did not threaten his and John Locke's tenet that property ownership "leave s to every one else the like advantage." [FN187] The current copyright statute, by contrast, covers not only textual works such as books, but works that can only exist now because of the development of communications technology--works such as sound recordings, motion pictures, and screen displays of computers. Furthermore, with respect to patentable subject matter, at least, Madison may have viewed the freedom to use one's intellect as a right deriving from natural law and, at the same time, approved of patent grants by the state. [FN188] Under this interpretation, the property right in the free use of one's faculties would be the primary or preexisting right.

Finally, both Madison and Jefferson occasionally associated copyright and patent with other, more despised forms of monopoly. In a letter to Jefferson written soon after the constitutional convention ended, Madison expressed some

ambivalence with respect to the granting of copyrights and patents:

With regard to Monopolies, they are justly classed among the greatest nuisances in Government. But is it clear that as encouragements to literary works and ingenious discoveries, they are not too valuable to be wholly renounced? Would it not suffice to reserve in all cases a right to the public to abolish the privilege at a price to be specified in the grant of it? [FN189]

As will be seen below, Jefferson occasionally shared the same sentiments. Madison's later essay on property again clearly signals his mistrust of sovereign power in the form of "arbitrary restrictions, exemptions, and monopolies." [FN190]

Regardless of whether access to or restrictions on the use of knowledge is the more fundamental property right, Madison did not have an egalitarian view of the consequences of freedom of intellect and creativity. He acknowledged freedom of intellect and creativity would not necessarily lead to an equal or just distribution of property. Although freedom of intellect is an aspect of property in its "larger and juster meaning," [FN191] Madison equated this aspect with the concept of inequality. In Federalist No. 10, Madison conveyed, in the words of Underkuffler, that "It is the exercise of diverse, individual faculties which is the source of unequal distributions of property." [FN192] Madison apparently believed that although each person was free to exercise his or her intellect, such freedom did not guarantee an equality of result. The resulting unequal distributions of property might lead to factionalism within the republic, but Madison felt that consequence was inevitable given that the first object of government was to protect these different and unequal faculties of acquisition. His thinking about property may have been influenced by Locke, who can be read to endorse a "just deserts" basis for property rights. [FN193]

B. Jefferson's Views

Jefferson's letters and diaries reflect both an implicit rejection of a Lockean justification for intellectual property qua property as well as a quintessentially Enlightenment optimism in progress. [FN194] Rather than being meted and bounded like an acre of land of which the fruits of one's labor justifies the ownership, the invention that is the outcome of an idea does not inevitably enjoy protection. There is something different about ideas and their progeny, inventions. Jefferson wrote that:

Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody. Accordingly, it is a fact, as far as I am informed, that England was, until we copied her, the only country on earth which ever, by a general law, gave a legal right to the exclusive use of an idea. In some other countries it is sometimes done, in a great case, and by a special and personal act, but, generally speaking, other nations have thought that these monopolies produce more embarrassment than advantage to society; and it may be observed that the nations which refuse monopolies of invention, are as fruitful as England in new and useful devices. [FN195]

The "encouragement" of which Jefferson spoke, the incentive justification for protection of certain types of knowledge, resembles Locke's theory that property is a reward for labor. [FN196] But in 1813, Jefferson clearly did not see the patent or copyright as being a natural right; rather he viewed it as a fungible right which was within the state's discretion to grant. [FN197]

Jefferson the scientist and diplomat was all too aware that "the more America cut herself off from the Old World, the more she lost the necessary means of scientific progress." [FN198] Protectionism and isolationism retarded, not encouraged, scientific progress. A clue to Jefferson's attitude toward restrictions on knowledge can be gleaned from his obsession, while a diplomat to France, with investigating agriculture that could be transplanted to America. This led him even to "smuggle a sack of rice out of Lombardy, despite the fact there was a penalty of death for anyone caught taking it out of the country." [FN199] The spread of ideas and inventions was of a higher priority to Jefferson than was the obedience of laws that restricted the spread of those ideas and inventions. [FN200]

Jefferson implied that the same encouragement to authors and inventors might be provided through a system of financial rewards. In fact, Madison's proposals to the Constitutional convention included a measure "[t]o encourage, by proper premiums and provisions, the advancement of useful knowledge and discoveries." [FN201] The American Philosophical Society, the "leading American scientific society both before and after the American Revolution," [FN202] engaged in a private reward system for various useful discoveries and inventions, [FN203] as did some of the states prior to the formation of the republic. [FN204] Indeed, Jefferson suggests governmental encouragement might be withheld altogether. [FN205]

Perhaps Jefferson's reluctance to classify inventions as a type of property can be attributed, in retrospect, to his underestimation of the ability of property law to accommodate new forms of property. [FN206] Certainly we know he partially relented from this reluctance as early as 1788, [FN207] for he served as one of the first commissioners administering the Patent Act of 1790. [FN208] Nonetheless, his writings suggest there is a different aspect to an idea than there is to mere property.

Why are ideas so wonderful? Jefferson linked them to "the moral and mutual instruction of man, and improvement of his condition." [FN209] Thus, like many Enlightenment-era intellectuals, he appears to have thought of ideas instrumentally, valuable because of their potential for improvement of human existence. [FN210] His measurement of that value might have been similar to what we term today sustainable development--a measure that includes the distributional as well as sheer growth aspects of progress. [FN211] In that sense, he may have been different from Madison. [FN212]

But one might also read into his reluctance to impose restrictions in knowledge the notion that he valued the freedom to acquire knowledge as a fundamental right. Thus Jefferson's views, like those of Madison, provide a link between modern and postmodern progress. The Enlightenment as faith required human beings to observe and record clues about the natural world, and deduce from this evidence ways to improve humankind. Thus ideas--the vehicle of this faith--should be minimally restricted. Postmodern progress emphasizes the practices of individuals that are also highly dependent on free access to knowledge as a means of performing knowledge.

Returning to the text of the Constitution, the "Progress of Science and Useful Arts" is to be promoted by Congress. [FN213] The subsequent language of incentive in the copyright and patent clause obscures the starting premise that access to knowledge is a type of property right. [FN214] Madison and Jefferson recognized, if inconsistently, this other side of intellectual property. Knowledge--the outcome of human beings exerting their "faculties" upon the natural world--is something all citizens can freely attain and of which they should have free use.

The modernist treats knowledge as a means of rationally progressive improvement of human conditions. Knowledge is an integral component of progress, as well as a result of progress. With respect to the goals of the Constitution, knowledge assists in promoting liberty and happiness. It does so directly by enlightening citizens. It does so indirectly by freeing them from certain tangible restraints such as hunger, homelessness, etc. Congress promotes the "Progress of Science and useful Arts" because knowledge is fundamental to progress: to bread, knowledge, freedom. However, a modern "Progress" read in light of both Madison's and Jefferson's views on intellectual property requires not just that incentives be provided to authors and inventors to increase knowledge, but that each human being have the right to use that knowledge. [FN215]

Postmodern "Progress" is also premised on knowledge but seeks a different relationship to it. Progress is an inevitability, but neither an ever-advancing one nor a rationally induced or deduced one. Knowledge is an act, which may or may not be expressive of progress. Postmodern "Progress," to the extent it is definable a priori, occurs through the acts of knowledge as well as other acts performed by contingently-situated individuals. More importantly, it acknowledges the consequences of disparity in control over knowledge and technology. It attends to the saturation of culture by media technology, and ensures that individuals are free to respond to media images. Madison and Jefferson's notions of free access to knowledge encourage the performance of these responses, which in turn perform the copyright and patent

clause.

IV. CONCLUSION: THE PROSPECT OF PROGRESS

If one agrees with the Altai outcome, or more generally with the premise that intellectual property rights regimes should be structured so as to secure access to knowledge by all, then, a fortiori, one must believe that this is the best way to promote some end. "Progress of Science and useful Arts", as I have argued, was essential to the Enlightenment-influenced optimism in progress. I have sketched how this view necessarily relied on the creative and intellectual faculties of individuals, and ergo access to a commons of ideas. This vision of knowledge within our political, economic, and social structure has been largely obscured.

In brushing off the modernist vision of knowledge, we face its limits. We have seen the future envisioned by the Enlightenment, and it is not utopian. In some senses, Jocasta had the right impulse. Progress-- if by that we mean improvement of the human condition--has let us down.

But progress is inevitable, even if it is not necessarily forward in motion or positive in effect. Instead we have the postmodernist age, stemming from the radically restructured capitalism that is characteristic of the late twentieth century; "on the one hand, ... a way of operating or a style (e.g., of art, architecture, protest, or scholarship) that we can, through an act of will, decide to cast off; on the other hand, ... [a] condition of life to which we are shackled." [FN216]

Whether viewed by a modernist or postmodernist, knowledge is still a key to progress. We must clarify to what end we are progressing because "the value-- or, rather, power--of knowledge lies not in its mere possession, but in the range of possible uses and users for it." [FN217] The patent and copyright clause is, as ever, instrumental. However, we cannot decide how to "promote the Progress of Science and useful Arts" before we have debated the terms of progress. An idea of progress that rejects sheer material growth as its sine qua non changes the focus of our intellectual property laws from competition policy to the complicated interface between science and society.

Because the copyright and patent clause is so clearly instrumental in tone, we tend to forget that the grant of a copyright or a patent is an exception. When we explore the question to which it is an exception, we see that competition and innovation are not the only or even the primary mandates of that clause. Access to knowledge as an essential component of liberty is the "thing" to which a patent and copyright is an exception. The Altai court, with this understanding, may have been able to articulate a justification for its opinion that could rely on the strong conceptual pull that "free use of faculties," as a type of property right (and as a type of civil right), could exert. It would have been able to expand the public domain to more than just the undefined third prong of a test into a much more powerful concept: A commons of knowledge held in stewardship by the courts and guarded by them against over-appropriation. Computer software development pierces the seeming inevitability of knowledge protection because, as the Altai court inchoately recognized, the right kind of software development depends much on keeping large portions of knowledge in the a trust accessible to everyone--a commons of information. Thus, the "Progress of useful Arts" in this case cannot be encouraged by copyright, because progress (larger, but with a small "p") would be impeded.

The project of the patent and copyright clause must be understood as access to knowledge, which is a type of property and civil right. Copyrightable subject matter encompasses far more than books written by learned men, and patents cover far more than devices deriving from Newtonian physics. All areas of federal intellectual property are blending into each other; [FN218] the subject matter of intellectual property, rather than knowledge itself, seems "expansible over all space." [FN219] Free use of one's faculties and the free choice of objects upon which to exert them--Madison's vision--could challenge Madison Avenue's version of a democratic society.

[FNal]. Even before the author is identified, she acknowledges trepidation at applying the modifier "postmodern" to anything--not least to the subject of intellectual property protection of computer technology, which is intimidating enough even without the aid of abstruse French terms such as "differance." The first epigraph will remind us, however, that ignoring something will not make

it go away. Moreover, communications technology is largely responsible for our postmodern condition, and turn about is fair play: it seems appropriate to apply the insights of both the theory of postmodernism and the condition of postmodernity to the subject of technology.

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[FN3]. See ANTHONY GIDDENS, *THE CONSEQUENCES OF MODERNITY* 39 (1990) ("We are abroad in a world which is thoroughly constituted through reflexively applied knowledge, but where at the same time we can never be sure that any given element of that knowledge will not be revised.").

[FN4]. See Rene Girard, *Tiresias and the Critic*, in *THE STRUCTURALIST CONTROVERSY: THE LANGUAGES OF CRITICISM AND THE SCIENCES OF MAN* 15 (Richard Macksey & Eugenio Donato eds., 1972).

[FN5]. "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, <section> 8, cl. 8. I use the term "intellectual property law(s)" throughout this article to denote this particular constitutional text as well as the statutes and cases dealing with it. It can (but for my present purposes does not) include federal trademark law, which rests on Congress's commerce power, the Trademark Cases, 100 U.S. 82 (1879), and state law concerning trade secrets or unfair competition.

[FN6]. See Denis J. Brion, *Performing the Constitution*, 49 WASH. & LEE L.REV. 293 (1992) (arguing that the constitution must be performed rather than canonized); William M. Wiecek, *The Constitutional Snipe Hunt*, 23 RUTGERS L.J. 253 (1992) (also arguing that the constitution must be performed).

[FN7]. See, e.g., BRUCE W. BUGBEE, *GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW* (1967); Michael Davis, *Patents, Natural Rights, and Natural Property*, in *OWNING SCIENTIFIC AND TECHNICAL INFORMATION: VALUE AND ETHICAL ISSUES* 241 (Vivian Weil & John W. Snapper eds., 1989) [hereinafter "Weil & Snapper"]; Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO.L.J. 287 (1988); Alfred C. Yen, *Restoring the Natural Law: Copyright as Labor and Possession*, 51 OHIO ST.L.J. 517 (1990).

[FN8]. 198 U.S. 45 (1905) (striking down state labor law on substantive due process grounds), overruled by *Day-Brite Lighting, Inc. v. Missouri*, 342 U.S. 421 (1952).

[FN9]. See, e.g., Paul Goldstein, *The Competitive Mandate: From Sears to Lear*, 59 CAL.L.REV. 873 (1971) (discussing a constitutional mandate for a competitive economy and its relationship to federal and state law monopolies).

[FN10]. See, e.g., Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U.CHI.L.REV. 1017 (1989) (analyzing the proper scope of an experimental use exemption from patent infringement liability); Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965 (1990) (examining the public domain in copyright law via the gulf between what authors actually do and the way the law perceives them).

[FN11]. See, e.g., *Whelan Associates v. Jaslow Dental Lab.*, 797 F.2d 1222, 1237 (3d Cir.1986) ("The rule proposed here, which allows copyright protection beyond the literal computer code, would provide the proper incentive for programmers by protecting their most valuable efforts, while not giving them a stranglehold over the development of new computer devices that accomplish the same end.").

[FN12]. Pamela Samuelson specifically characterizes this as a "tension that exists in intellectual property law between the interests of innovators and the interests of competitors...." Pamela Samuelson, *Innovation and Competition: Conflicts over Intellectual Property Rights in New Technologies*, in Weil & Snapper, *supra* note 7, at 169. Other less commonly accepted

justifications for intellectual property laws include the exchange-for-secrecy rationale, the quality-control principle, and the prospecting theory. These justifications are summarized in Rochelle C. Dreyfuss, General Overview of the Intellectual Property System, in Weil & Snapper, *supra* note 7, at 17, 19-20.

[FN13]. The rather terse discussion of the intellectual property clause in THE FEDERALIST NO. 43 (James Madison) is discussed in section III *infra*. For the relevant text, see 3 THE FOUNDERS' CONSTITUTION 40 (Philip B. Kurland & Ralph Lerner eds., 1987) [hereinafter Kurland & Lerner].

[FN14]. For purposes of this article, modernism is defined as a world view or cognitive framework based on "ego-centered reason [that] affirms the validity of the rule of reason as determined by the individual rationalist self." Pierre Schlag, Missing Pieces: A Cognitive Approach to Law, 67 TEX.L.REV. 1195, 1210-11 (1989) [hereinafter Schlag, Missing Pieces]. Schlag and others contrast modernism with rationalism. According to Schlag, modernism differs from rationalism in that "[t]he rationalist ... allows the ego to stand outside of the inquiry and adjudicate the validity of the statement in the court of individual consciousness [whereas the] modernist relinquishes this philosophical idealism and stands inside." *Id.* at 1215. I focus on their shared characteristics and therefore collapse the two categories into the modernist label.

[FN15]. "Privileged" is a postmodernist's term of art. It springs from the idea that "binary oppositions are pervasive in and undergird Western thinking and language. When we think or write about something, we do so assuming certain dichotomies, with one pole of the opposition dominating the other." Peter C. Schanck, Understanding Postmodern Thought and Its Implications for Statutory Construction, 65 S.CAL.L.REV. 2505, 2525 (1992). The dominant pole is the "privileged" pole. While certain privileged poles have been explicitly challenged by various legal theories (e.g., "male" by feminist legal scholars; "objective" by critical theorists of all stripes; "public" by a variety of scholars, including constitutional law scholars), "Progress" seems to be privileged across a spectacularly wide spectrum of ideological and methodological viewpoints.

[FN16]. Schlag, Missing Pieces, *supra* note 14, at 1218. Freud, for example, while trained in the Enlightenment tradition, recognized that the individual is not purely self-directing and rational but is motivated in part by her or his unconscious. By undermining the Enlightenment assumption of a wholly rational subject, he also contributed to the late modernist recognition of limits to the liberating power of reason and ultimately to the postmodernist death of the subject.

[FN17]. See GIDDENS, *supra* note 3, at 177 ("Many of the phenomena often labeled as post-modern [sic] actually concern the experience of living in a world in which presence and absence mingle in historically novel ways. Progress becomes emptied of content as the circularity of modernity takes hold....").

[FN18]. *Acuff-Rose Music, Inc. v. Campbell*, 972 F.2d 1429, 1440 n. 2 (6th Cir.1992) (Nelson, J., dissenting), cert. granted in part, 113 S.Ct. 1642 (1993) (arguing that copyright law should not be constitutionalized).

[FN19]. See EDWARD O. WILSON, THE DIVERSITY OF LIFE 272, 346-348 (1992) (discussing man's stewardship role in sustaining biodiversity).

[FN20]. "Deconstruct" is another favorite postmodern term of art, one also employed by modernists with "progress"ive politics. It means to:
reconfigur[e] and reconstruct[] a dichotomy and, in the process, demonstrat[e] that a text can be read to assert a different thesis or convey a different meaning from those it had been commonly assumed to assert or convey. The text can be said to contain both a thesis and its antithesis. This reconfiguration of a binary opposition is done not by dreaming up various bizarre arguments or interpretations, but by laying bare alternative understandings of the dichotomy through the words of the text itself or implicit assumptions underlying those words.
Schanck, *supra* note 15, at 2527 (discussing the works of Jacques Derrida).

[FN21]. The concept of sustainable development is not fixed, but the following definition captures most of its qualities:

Humanity has the ability to make development sustainable--to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits--not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities.

WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 8 (1987) [hereinafter OUR COMMON FUTURE]. The Carnegie Commission on Science, Technology, and Government recommended that long-term science and technology goals necessarily include the "sustainable use of resources." CARNEGIE COMMISSION ON SCIENCE, TECHNOLOGY, AND GOVERNMENT, SCIENCE, TECHNOLOGY, AND GOVERNMENT FOR A CHANGING WORLD 70 (Apr. 1993) (concluding report).

[FN22]. As discussed in section II below, the public trust of information is maximized when innovators in the computer software industry concede to certain public interests embodied in the compatibility of computer systems developed by second-comers. See Dreyfuss, *supra* note 12, at 26.

[FN23]. This term was first coined in MARSHALL McLuhan & Bruce R. Powers, *THE GLOBAL VILLAGE: TRANSFORMATIONS IN WORLD LIFE AND MEDIA IN THE 21ST CENTURY* 6 (1968).

[FN24]. See C.G. Weeramantry, *Human Rights, Technology, and Development*, in *HUMAN RIGHTS AND SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT* 151 (C.G. Weeramantry ed., 1990). Those in the developing world express this need as the "right to development," which includes a right to choose and control as well as to enjoy technology. *Id.* Cf. BEN H. BAGDIKIAN, *THE MEDIA MONOPOLY* 223 (3d ed. 1990) ("To give citizens a choice in ideas and information is to give them a choice in politics: if a nation has narrowly controlled information, it will soon have narrowly controlled politics.").

[FN25]. Christopher Norris points out that this "free-for-all attitude of hermeneutic license that often gets mistaken for 'deconstruction' by friends and enemies alike" is refuted by a close reading of the works of the founding fathers of deconstruction, Jacques Derrida and Paul de Man. Christopher Norris, *Law, Deconstruction, and the Resistance to Theory*, 15 *J.L. & SOC'Y* 166, 174 (1988). See also PAULINE M. ROSENAU, *POST-MODERNISM AND THE SOCIAL SCIENCES: INSIGHTS, INROADS, AND INTRUSIONS* 15-16, 111 (1992) (comparing "skeptical" postmodernism with "affirmative" postmodernism).

[FN26]. Pierre Schlag critiques the colonialization of postmodernism by rationalist forms and practices, and argues that even postmodern legal academics never acknowledge the privileged position of normativity in their own legal writings. Pierre Schlag, "Le Hors de Texte, C'est Moi": The Politics of Form and the Domestication of Deconstruction, 11 *CARDOZO L.REV.* 1631, 1636 (1990); Pierre Schlag, *Normativity and the Politics of Form*, 139 *U.PA.L.REV.* 801, 847 (1991). However, normative legal writing is really all academic lawyers have in common anymore. See Edward L. Rubin, *On Beyond Truth: A Theory for Evaluating Legal Scholarship*, 80 *CAL.L.REV.* 889, 903-04 (1992) ("The purpose of legal scholarship is most accurately described as prescription, or recommendation.... The entire field crackles with normativity, and it is this characteristic that renders the scientific concept of validity so unhelpful as a basis for evaluation."). This commonality of normativity, to me, is an important reason to keep (and privilege) it, regardless of the fact that judges seem to be paying less and less attention to professors.

[FN27]. See Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 *MICH.L.REV.* 471 (1970) (arguing that the public trust doctrine vests a legal right to resources in the general public, a right which the government has a duty to protect).

[FN28]. GIDDENS, *supra* note 3, at 43-44.

[FN29]. Modernist "Progress" has increasingly severed human beings from the biological basis for our existence and inserted us into environments shaped by communications technology. Hence, one defining characteristic of postmodernity is that we are all products of a consumer culture or information society. *Id.* at 1-2. But it does not free us from biological constraints on our existence. WILSON, *supra* note 19, at 347.

[FN30]. Vaclav Havel writes:

The past era has taught us, survivors of the totalitarian regime, one very good lesson--man cannot command wind and rain.... Man is not an omnipotent master of the universe, allowed to do with impunity whatever he thinks, or whatever suits him at the moment. The world we live in is made of an immensely complex and mysterious tissue about which we know very little and which we must treat with utmost humility.

Vaclav Havel, *Rio and the New Millennium*, N.Y. TIMES, June 3, 1992, at A21.

[FN31]. *Feist Publications v. Rural Tel. Serv. Co. Inc.*, 111 S.Ct. 1282, 1290 (1991) (quoting U.S. CONST. art. I, <section> 8, cl. 8); *Harper & Row v. Nation Enterprises*, 471 U.S. 539, 546 (1985); *Sony Corp. of America v. Universal City Studios*, 464 U.S. 417, 429-30 (1984); *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966). But see *BUGBEE*, supra note 7, at 9 ("[L]eading Supreme Court decisions for at least a century have held that the United States patent laws are primarily intended to provide inventors with a 'stimulus,' 'inducement,' 'incentive,' 'encouragement,' or 'stimulation' to further discoveries.").

In this section of the article, I will use "idea" as a copyright law term of art; that is, the unprotectable core of a "writing." In other sections of this article, I will treat "idea" in its more general usage to denote a slice of knowledge or a concept.

[FN32]. Copyright Act of 1976, 17 U.S.C. <section> 102(a) (1988).

[FN33]. *Id.* <section> 102(b).

[FN34]. Patent Act, 35 U.S.C. <section> 101 (1988).

[FN35]. *Id.* <section><section> 101-102.

[FN36]. *Id.* <section> 103.

[FN37]. Copyright Act of 1976, 17 U.S.C. <section><section> 101-1010 (1988); Patent Act, 35 U.S.C. <section><section> 101-376 (1988).

[FN38]. In the case of copyrights, for example, the "102(b) exceptions" provide that no copyright protection is available for an "idea, procedure, process, system, method of operation, concept, principle, or discovery." Copyright Act of 1976, 17 U.S.C. <section> 102(b) (1988). Analogously, patents cannot be granted unless the invention falls into one of four categories: "process, machine, manufacture, or composition of matter." Patent Act, 35 U.S.C. <section> 101 (1988). Thus the patentability of mathematical algorithms or formulae has always been, and continues to be, problematic.

[FN39]. Until *Diamond v. Diehr*, 450 U.S. 175 (1981) (granting a patent for a process of curing synthetic rubber, even though the process utilized a specific mathematical formula), the Supreme Court consistently reversed the Court of Appeals for the Federal Circuit (and that court's predecessor, the Court of Customs and Patent Appeals) on the issue of patentability of algorithms. See *Parker v. Flook*, 437 U.S. 584 (1978) (denying a patent for an invention that relied on a mathematical formula); *Gottschalk v. Benson*, 409 U.S. 63 (1972) (denying a patent for an algorithm that converted binary decimal numbers to binary numbers). Justice John Paul Stevens's dissent in *Diehr* summarizes this battle. *Diehr*, 450 U.S. at 193 (Stevens, J., dissenting).

[FN40]. A computer code is equivalent to a written text. A code is a set of written instructions to the computer expressed in binary form as a series of "0s" and "1s". Object codes are composed of machine instructions, and are compiled or assembled from source codes, which are more easily interpretable by humans.

[FN41]. A trio of Third Circuit cases supports this claim. See, e.g., *Whelan Assocs. v. Jaslow Dental Lab.*, 797 F.2d 1222 (3d Cir.1986) ("structure, sequence, and organization" is protectable); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir.1983) (object code is protectable); *Williams Elecs. v. Artic. Int'l*, 685 F.2d 870 (3d Cir.1982) (screen displays are protectable).

[FN42]. See *Feist Publications v. Rural Tel. Serv. Co. Inc.*, 111 S.Ct. 1282, 1289 (1991) (finding that in a case involving telephone directory "the copyright in a factual compilation is thin."); *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F.Supp. 37, 66 (D.Mass.1990) (finding unprotectable functional elements of spreadsheet program, such as rotated "L" screen display and use of the forward slash key ("/") to invoke the menus); Jane C. Ginsburg, *Creation and Commercial Value: Copyright Protection of Works of Information*, 90 COLUM.L.REV. 1865, 1868 (1990) ("the scope of copyright protection in an informational work may be quite scanty.").

[FN43]. For example, compare the court of appeals opinion in *Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir.1992) (finding the defense of fair use appropriate), to the district court opinion in the same case, *Sega Enters., Ltd. v. Accolade, Inc.*, 785 F.Supp. 1392 (N.D.Cal.1992) (finding the fair use defense inappropriate).

[FN44]. See, e.g., *Whelan Assocs. v. Jaslow Dental Lab.*, 797 F.2d 1222, 1235 (3d Cir.1986) ("[W]e must remember that the purpose of the copyright law is to create the most efficient and productive balance between protection (incentive) and dissemination of information, to promote learning, culture and development.").

[FN45]. 111 S.Ct. 1282 (1991).

[FN46]. *Id.* at 1290. See also *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966) (stating, "Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must 'promote the Progress of ... useful Arts.' ").

[FN47]. *Harper & Row v. Nation Enters.*, 471 U.S. 539, 546 (1985) (quoting *Sony Corp. of America v. Universal City Studios*, 464 U.S. 417, 429 (1984)).

[FN48]. *Sony*, 464 U.S. at 429.

[FN49]. See *infra* notes 50-87 and accompanying text (discussing cases in this area).

[FN50]. 982 F.2d 693 (2d Cir.1992).

[FN51]. Code, as explained above, is language. See *supra* note 40. Non-literal elements can include the "general flow charts as well as the more specific organization of inter-modular relationships, parameter lists, and macros. In addition ... the list of services that [the program] ... obtain[s] from [its] respective operating system[]." *Altai*, 982 F.2d at 702.

[FN52]. Legislative history to the Copyright Act contains only two brief references to the question of copyright protection of computer technology. See H.R.REP. NO. 1476, 94th Cong., 2d Sess., 57 (1976); H.R.REP. NO. 1307, 96th Cong., 2d Sess., pt. 1, at 23-24 (1980). Congress delayed the enactment of provisions relating to the protection of computers in the 1976 Act; instead, it appointed the National Commission on New Technological Uses of Copyrighted Works ("CONTU") to study the question of whether computer technology should be protected by copyright. Courts frequently cite to the Final Report of this Commission as a type of legislative history to the 1980 amendments. UNITED STATES, NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS (1978) [hereinafter CONTU REPORT]. The CONTU REPORT is silent on the question of whether program structure is protectable by copyright.

[FN53]. The district court in *Altai* found a copyright infringement of an earlier version of the program on appeal. *Altai*, 982 F.2d at 700-01. Unbeknownst to defendant *Altai*, a former employee of the plaintiff, who had come to work for *Altai*, had purposely copied the plaintiff's code when developing the earliest version of *Altai*'s program. *Id.* at 699-700. Upon discovery of the infringement, *Altai* developed a newer version of the program that purged all of the copied elements from plaintiff's program. *Id.* at 700. Although plaintiff sought to recover for infringements involving both programs, the District Court found infringement only with regard to *Altai*'s original program. *Id.* at 701.

[FN54]. Section 101 of the Copyright Act of 1976 was amended in 1980 to include a definition of a computer program as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." Act of Dec. 12, 1980, P.L. 96-517, 94 Stat. 3015, 3028 (codified as amended at 17 U.S.C. <section> 101 (1988)). Congress also amended <section> 117 of the Act to include a "computer fair use" provision. Id. at 3028-29 (codified as amended at 17 U.S.C. <section> 117 (1988)).

[FN55]. Section 102 provides: "Subject matter of copyright: In general ... [w]orks of authorship include the following categories: (1) literary works...." Copyright Act of 1976, 17 U.S.C. <section> 102 (1988).

[FN56]. *Altai*, 982 F.2d at 700. The decision whether to afford copyright protection to non-literal elements of a computer program is also significant because the same program can be written in different languages; protection of literal code only would not prevent this type of copying.

[FN57]. *Altai*, 982 F.2d at 702.

[FN58]. 797 F.2d 1222 (3d Cir.1986).

[FN59]. Id. at 1248.

[FN60]. The test was based on the assumption that computer programs have one idea, and that everything else is expression (and hence protectable by copyright). *Altai*, 982 F.2d at 705.

[FN61]. Id. at 706-11, 715. The "abstraction-filtration comparison" test involves a three-part analysis. First, the court examines the computer program's structure and isolates each separate idea. Id. at 706-7. Next, the court filters out of the remaining expression all non-protectable knowledge. The court then compares the filtered program structure to the infringing program structure, to ascertain whether the two structures are substantially similar. Id. at 707.

[FN62]. Id. at 708-10.

[FN63]. *Litman*, supra note 10, at 967 ("the current trend is to characterize material in the public domain as unprotectable or uncopyrightable.").

[FN64]. *Altai*, 982 F.2d at 710 (citations omitted).

[FN65]. The *Altai* opinion quotes *Brown Bag Software v. Symantec Corp.* to the effect that "'[p]laintiffs may not claim copyright protection of an ... expression that is, if not standard, then commonplace in the computer software industry.'" Id. at 710 (quoting *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465, 1473 (9th Cir.1992)). It is not clear from the structure of the citation within the sentence whether the Second Circuit adopts this definition or is simply endorsing it as a possible definition.

Litman argues that "[t]he public domain should be understood not as the realm of material that is undeserving of protection, but as a device that permits the rest of the system to work by leaving the raw material of authorship available for authors to use." *Litman*, supra note 10, at 968.

[FN66]. The filtration step entailed two other analyses, both of which were tied very tightly to market considerations: the court stated that elements dictated by either efficiency or external factors (such as hardware constraints) are also not protectable. *Altai*, 982 F.2d at 707-10.

[FN67]. Id. at 711 (emphasis added).

[FN68]. 422 U.S. 151 (1975) (holding that radio reception of copyrighted songs did not infringe on the copyright, since reception did not constitute performance of the works).

[FN69]. 111 S.Ct. 1282 (1991) (holding that the white pages of a telephone directory were not protected by copyright).

[FN70]. *Altai*, 982 F.2d at 711 (quoting *Aiken*, 422 U.S. at 156).

[FN71]. Id. (quoting Feist, 111 S.Ct. at 1290).

[FN72]. Id. at 711-12.

[FN73]. See generally Ginsburg, supra note 42 (examining application of copyright law to information compilations). Feist, of course, is the extreme test of the incentive justification because there is so little "originality" and so much "labor" involved in creating a telephone directory.

[FN74]. Feist, 111 S.Ct. at 1290.

[FN75]. Altai, 982 F.2d at 711.

[FN76]. Id.

[FN77]. Feist, 111 S.Ct. at 1286.

[FN78]. Altai, 982 F.2d at 712. The court suggests that were software held to patentability standards, which are much more rigorous than copyright standards, most software would not be protected. Id.

Judge Learned Hand had precisely the same rhetorical difficulty when he elegantly expressed the boundary-making activity at play in copyright decisions, stating that "Nobody has ever been able to fix that boundary, and nobody ever can." Nichols v. Universal Pictures Corp., 45 F.2d 119, 121 (2d Cir.1930).

[FN79]. The concept of the "ground" in semiotics is that of a context within which we assign meaning to a word. "Functionally, the ground provides a set of assumptions within which we immediately experience any text." Brion, supra note 6, at 306. As Brion writes, "a court is sometimes complicit with the ideology that the ground of its language embodies. Sometimes, a court is resistant to this ideology. Sometimes, a court consciously tries to shift it. The ground, however, necessarily plays a strong role in the meaning that the legal process generates." Id. at 315.

[FN80]. 977 F.2d 1510 (9th Cir.1993).

[FN81]. Id. at 1523.

[FN82]. Id. at 1514.

[FN83]. Copyright Act of 1976, 17 U.S.C. <section> 107 (1988) (codifying the "fair use" defense to copyright infringement, including the factors to be considered in determining whether a fair use was made of the work).

[FN84]. Sega, 977 F.2d at 1523 (citing Feist Publications v. Rural Tel. Serv. Co., Inc., 111 S.Ct. 1282, 1290 (1991), citing Harper & Row v. Nation Enterprises, 471 U.S. 539, 556-57 (1985)).

[FN85]. Id. at 1527. The statement raises a number of questions in my mind.

Is the growth of creative expression measured by an increased access to technology for would-be creators/competitors who thus decentralize market power in the video game industry? Does it facilitate new and useful technological innovations through encouraging inter-operable and open architecture systems? Or does it promote greater access to technology by consumers (through lower prices)? Can it lead to greater control and real choice by consumers over the fruits of technology or simply to another row of video game cassettes at Toys-R-Us?

[FN86]. Id.

[FN87]. Feist, 111 S.Ct. at 1290.

[FN88]. RAYMOND WILLIAMS, KEYWORDS: A VOCABULARY OF CULTURE AND SOCIETY 233 (1976). The Oxford English Dictionary defines "science" as "The state or fact of knowing; knowledge or cognizance of something specified or implied." 9 THE OXFORD ENGLISH DICTIONARY 221 (1933).

[FN89]. WEBSTER'S NEW WORLD DICTIONARY OF THE AMERICAN LANGUAGE, 1275 (2d College ed. 1984); accord 9 OXFORD ENGLISH DICTIONARY, supra note 88, at 222 ("In modern use, often treated as synonymous with 'Natural and Physical

Science,' and thus restricted to those branches of study that relate to the phenomena of the material universe and their laws, sometimes with implied exclusion of pure mathematics.").

[FN90]. Five of the first six definitions of "art" in the OXFORD ENGLISH DICTIONARY refer to some sort of skill. Definition eight is "[a] practical application of any science; a body or system of rules serving to facilitate the carrying out of certain principles. In this sense often contrasted with science." 1 OXFORD ENGLISH DICTIONARY, supra note 88, at 468. Science is "[c]onstradistinguished from art ... [by the former's] concern[] with theoretic truth, and an art with methods for effecting certain results." Id. at 221.

[FN91]. Some have suggested that the word "Science" was originally associated with the work of "Authors," whereas the term "useful Arts" referred to the work of "Inventors." See e.g., PAUL GOLDSTEIN, COPYRIGHT, PATENT, TRADEMARK AND RELATED STATE DOCTRINES 20-21 (Rev.3d ed., 1993) (stating "Colonial usage and syntax indicate that the Constitution's framers, in speaking of "Science" in clause 8, were referring to the work of authors, and by "useful Arts" meant the work of inventors."). If this was the original understanding, at the latest it had collapsed by the time the Supreme Court decided Baker v. Selden, 101 U.S. 99, 103 (1879) (stating that "[t]he very object of publishing a book on science or the useful arts is to communicate to the world the useful knowledge which it contains.") (emphasis added). That is, the clause could be constructed as:

Science	useful Arts
Authors	Inventors
Writings	Discoveries

An equally plausible construction is:

Science and the useful Arts	
Authors	Inventors
Writings	Discoveries

The second interpretation is bolstered by the modifier "respective," for "Writings and Discoveries," but not for "Authors and Inventors."

[FN92]. See WILLIAMS, supra note 88, at 34. While other terms in the clause have received careful attention (see the Trademark Cases, 100 U.S. 82, 94 (1879)), "Science and useful Arts" is characterized by ambiguity. One could argue, based on the simultaneous inclusion of "useful Arts" and omission of "fine Arts" from the clause, that the latter were not intended to be covered. However, the distinction between "useful Arts" and fine arts has become irrelevant or blurred for copyright purposes, and the latter has apparently been incorporated into the former. See *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 249 (1903) (dismissing the "suggestion that painting and engraving unless for a mechanical end are not among the useful arts, the progress of which Congress is empowered by the Constitution to promote. The Constitution does not limit the useful to that which satisfies immediate bodily needs."). The distinction has retained its relevance in patent law via the statutory requirement of utility. 35 U.S.C. <section> 101 (1988) ("Inventions patentable: Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter ... may obtain a patent therefor...") (emphasis added). More recently, the Supreme Court has tended to associate copyright more with the fine arts than with science. See *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (holding that a grant of copyright must promote "literature, music, and the other arts."). Justice Sandra Day O'Connor's recent opinion in *Feist* refers to arts and science in the current vernacular, while carefully defining "Author" and "Writings" as terms of art. *Feist Publications v. Rural Tel. Sev. Co. Inc.*, 111 S.Ct. 1282, 1288 (1991).

[FN93]. An extreme but not atypical example of such optimism is the millennialists' "notion of history as a process generally moving upward by a series of majestic stages, culminating inevitably in some great, transforming event, which is to solve the dilemmas of society...." E.L. TUVESON, MILLENNIUM AND UTOPIA (1949), quoted in ROBERT NISBET, HISTORY OF THE IDEA OF PROGRESS 127 (1980).

[FN94]. HENRY F. MAY, THE ENLIGHTENMENT IN AMERICA (1976).

[FN95]. Id. at xiv (1976). The first part of May's definition is consistent with our current notion of progress in the temporal or spatial sense: A "moving forward or onward," as well as in the cultural sense of "advanc[ing] toward perfection or to a higher or better state; improve." WEBSTER'S NEW WORLD DICTIONARY, supra note 89, at 1135. That is, Enlightenment as faith approximates the meaning of progress and, in fact, the original meaning of progress was amplified by the Enlightenment. Raymond Williams notes that the sense of forward movement in the word progress began to develop at the end of the seventeenth century, a meaning that was given momentum by the idea of a linear (rather than circular) movement of history in the eighteenth century. WILLIAMS, supra note 88, at 205-06. Prior to that, it simply meant a march, but not necessarily a forward-moving one. Id. at 205.

[FN96]. NISBET, supra note 93, at 127. Nisbet quotes Sacvan Bercovitch's "The American Jeremiad":

American millennialism pervaded the entire spectrum of social thought. Educators planned for a "spiritual revolution" that would bring humanity to perfection. Political and moral reformers advertised their programs as the "revolutionary consummation of God's plan." Prominent thinkers urged that technology would "revolutionize the land" into being a "human-divine paradise," where "mechanical power [would] be matched by a new access of vitality ... imaginative, utopian, transcendent; and the acquisitive spirit would 'typify' the 'infinite' reaches of the soul...." Id. at 197-98.

[FN97]. DONALD H. MEYER, THE DEMOCRATIC ENLIGHTENMENT 153 (1976) ("It suggests purpose that is not implicit in the historical process nor imposed on it from above by a benevolent deity, but is worked out through history by men acting deliberately, coming to decisions and devising the means of implementing them.").

[FN98]. CHRISTOPHER LASCH, THE TRUE AND ONLY HEAVEN: PROGRESS AND ITS CRITICS 52 (1991) [hereinafter LASCH, TRUE AND ONLY HEAVEN].

[FN99]. Id. Adam Smith's *The Wealth of Nations* was published in 1776, and influenced a number of constitutional founders, including James Madison, although "almost everyone who responded to it blended the parts they approved of with ideas or biases they had previously entertained, and thus ended up with something different from the original." FORREST MCDONALD, NOVUS ORDO SECLORUM: THE INTELLECTUAL ORIGINS OF THE CONSTITUTION 128 (1985). Both Smith and David Hume believed in stages of progress through which all societies evolved. Id. at 132. In the commercial stage, "The spirit of the age affects all the arts; and the minds of men, being once roused from their lethargy, and put into a fermentation, turn themselves on all sides, and carry improvements into every art and science." Id. at 133 (quoting Hume).

[FN100]. LASCH, TRUE AND ONLY HEAVEN, supra note 98, at 52; cf. Robin Paul Malloy, *Is Law and Economics Moral?--Humanistic Economics and a Classical Liberal Critique of Posner's Economic Analysis*, 24 VAL.U.L.REV. 147 (1990) (arguing that Adam Smith intended values other than growth to be part of neoclassical economic theory).

[FN101]. Schlag, supra note 14, at 1210-11.

[FN102]. Regenia Gagnier, *Feminist Postmodernism: The End of Feminism or the Ends of Theory?*, in THEORETICAL PERSPECTIVES ON SEXUAL DIFFERENCE 21, 23 (Deborah L. Rhode ed., 1990).

[FN103]. THE DECLARATION OF INDEPENDENCE para. 2 (U.S.:1776). "America was itself an experiment in an 'age of experiments.'" MEYER, supra note 97, at vii. Thomas Jefferson liked to use the term "experiment" to describe the

American political process and the Constitution. DANIEL J. BOORSTIN, THE LOST WORLD OF THOMAS JEFFERSON 212 (1948).

[FN104]. The idea that the exchange of ideas was necessary for the happiness of a democratically governed people is evident, for example, in the Massachusetts Constitution of 1780, which states: "Wisdom and knowledge, as well as virtue, diffused generally among the body of the people, [is] necessary for the preservation of their rights and liberties...." MASS. CONST. of 1780, ch. 5, sec. 2, reprinted in 3 Kurland & Lerner, supra note 13, at 39; see also BUGBEE, supra note 7, at 114, 116, 117 (discussing the preambles to the first copyright acts of Massachusetts, New Hampshire, and Rhode Island, respectively).

Christopher Lasch wrote in 1992 that:

Political equality--citizenship--equalizes people who are otherwise unequal in their capacities, and the universalization of citizenship therefore has to be accompanied not only by formal training in the civic arts but by measures designed to assure the broadest distribution of economic and political responsibility.... It is in this sense that universal citizenship implies a whole world of heroes."

Christopher Lasch, A Reply to Jeffrey Isaac, 93 SALMAGUNDI 98, 107 (1992).

[FN105]. As Benjamin Kaplan observed after recounting the origins of copyright in England, "copyright has the look of being gradually secreted in the interstices of the censorship." BENJAMIN KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT 4 (1967); see also L. Ray Patterson, Free Speech, Copyright, and Fair Use, 40 VAND.L.REV. 1 (1987) (arguing that copyright power and the First Amendment are inseparable).

In England, copyright protection originated as an authoritarian impulse to exert control over printed works. For example, in 1557 Queen Mary chartered the Stationers' Company, an association of printers and publishers who had the exclusive right to print books licensed by the state, to suppress Protestant literature in an attempt to reverse the English Reformation. BUGBEE, supra note 7, at 50. Copyright protection in the states prior to the adoption of the Constitution was not tied to government censorship, although there had been some government control of publishing through monopolies and censorship in some colonies such as Massachusetts. Barbara Ringer, Two Hundred Years of American Copyright Law, in TWO HUNDRED YEARS OF ENGLISH AND AMERICAN PATENT, TRADEMARK & COPYRIGHT LAW 117, 120-21 (1977).

[FN106]. It had a profound effect, for example, on Jefferson's views on education. See BOORSTIN, supra note 103, at 217-25; MCDONALD, supra note 99, at 191 n. 10.

[FN107]. Benjamin Franklin, A Proposal for Promoting Useful Knowledge Among the British Plantations in America (letter dated May 14, 1743), in 6 THE WORKS OF BENJAMIN FRANKLIN 14, 16 (Jared Sparks ed., 1838). This letter contained the first proposal for the American Philosophical Society.

[FN108]. MEYER, supra note 97, at xx.

[FN109]. THOMAS JEFFERSON, THOMAS JEFFERSON'S EUROPEAN TRAVEL DIARIES 36 (James M. Morris & Persephone Weene eds., 1987) [hereinafter JEFFERSON'S TRAVEL DIARIES]. With respect to "Courts," by contrast, Jefferson stated that "[a] slight acquaintance with these regal assemblies will suffice to show you that under the most imposing exterior they are the weakest and worst part of mankind." Id. at 37. "Mechanical Arts," "Lighter Mechanical Arts," "Gardens," and "Politics" merit attention, however. Id. at 36-37. Jefferson's earlier NOTES ON VIRGINIA reveal the same concentration of detail on practical uses of science. Dean M. Sagar, Introduction to JEFFERSON'S TRAVEL DIARIES, supra at 9, 11-12.

[FN110]. MEYER, supra note 97, at xxi ("In ideas, the Americans were ... importers rather than exporters throughout most of the eighteenth century.").

[FN111]. In light of the United State's then-status as a "lesser developed country," it is interesting to note Barbara Ringer's claim that the absence of protection for foreign works in the original Copyright Act of 1790 impeded the growth of a domestic writing industry by neglecting the impact of inexpensive editions of English books. Ringer, supra note 105, at 127-28.

[FN112]. LASCH, TRUE AND ONLY HEAVEN, supra note 98, at 68.

[FN113]. Meyer writes that many Enlightenment thinkers "frequently insisted on the limitations of man's rational powers." MEYER, supra note 97, at xii.

However,

Science was the one common piety of the French Skeptics. Though they praised Newton as the greatest genius in history, they abandoned in practice the easy profundities of the early Newtonian popularizers. Physical theory was seldom one of their major interests; the preference for pure as against applied science is a nineteenth- or a seventeenth-century phenomenon. The Encyclopedists found the greatest excitement in the useful arts, engineering, agriculture, and technology. These pursuits were often contrasted with useless speculation in metaphysics and theology.

MAY, supra note 94, at 109.

[FN114]. MEYER, supra note 97, at 104.

[FN115]. MAY, supra note 94, at xiv (emphasis added).

[FN116]. Id. at 217 (emphasis added).

[FN117]. As May explains,

Despite their large range ... the active members of the [American] Philosophical Society shared a common view of nature and science.... [They] saw nature as designed by a wise creator for the use and edification of man.

The most famous example of the[ir] teleological view of nature comes from Jefferson, who insisted in discussing mastodon bones that the mastodon must exist somewhere, because for a form of life to disappear would serve no purpose in the economy of nature.

Id. at 215-16.

[FN118]. David Luban, Legal Modernism, 84 MICH.L.REV. 1656, (1986) ("What are the roots of Critical Legal Studies? 'The immediate intellectual background ... is the ... achievement of early twentieth century modernism.' ") (quoting Roberto Unger, The Critical Legal Studies Movement, 96 HARV.L.REV. 561, 587 (1983)).

[FN119]. Jeffrey Isaac, On Christopher Lasch, 93 SALMAGUNDI 82, 85 (1992).

[FN120]. "As Russell Baker (1991) writes: 'Nowadays Whitman would not hear America singing.... He would write, "I see America listening to nearly perfect Japanese technological reproduction of singing.'" Steven L. Winter, For What It's Worth, 26 LAW & SOC'Y REV. 789, 794 (1992).

I also insert here the semi-obligatory postmodern footnote that footnotes do not necessarily provide supporting authority for propositions stated in this section of the article. See Rosemary J. Coombe, Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue, 69 TEX.L.REV. 1853, 1856 n. 22 (1991) [hereinafter Coombe, Objects of Property]; Schlag, supra note 14, at 1248 n. 200.

[FN121]. See Coombe, Objects of Property, supra note 120, at 1862. She writes:

Postmodernity is distinguished by a dramatic restructuring of capitalism in the post-war period, a reconstruction of labor and capital markets, the displacement of production relations to non-metropolitan regions, the consolidation of mass communications in corporate conglomerates, and the pervasive penetration of electronic media and information technologies. Such processes have coalesced in the Western ... societies oriented toward consumption.

Id. See also Winter, supra note 120, at 796. The individual reacts to:

The escalating processes of commodification and consumerization characteristic of postmodernity. It is common to think of the conspicuous consumption that typifies consumer culture as a matter of individual consumers acting out their materialistic values. But the postmodernist notion of performativity suggests that the meaning of consumer goods should be read in the social practices in which they participate.

Id.

[FN122]. See GIDDENS, supra note 3, at 38. He writes that:

With the advent of modernity, reflexivity takes on a different character. It is introduced into the very basis of system reproduction, such that thought and action are constantly refracted back upon one another....

The reflexivity of modern social life consists in the fact that social practices are constantly examined and reformed in the light of incoming information about those very practices, thus constitutively altering their character.

Id.

[FN123]. See generally ROSENAU, *supra* note 25, at 42-61 (chapter entitled "Subverting the Subject").

[FN124]. The postmodern demise of the subject is related to the structuralist emphasis "on the formal laws of a system's functioning, on the linguistic construction of these structures, on the symbolic meaning they carry, and/or on change as manifest in structural transformations," as opposed to "a subject with any personal capacity to maintain or change social relations." Id. at 46.

[FN125]. Winter, *supra* note 120, at 802.

[FN126]. Saskia Sassen, *Regulatory Fractures in the Global City*, paper presented at the Law & Society 1993 Annual Meeting (May 28, 1993). Giddens feels that:

The advent of modernity increasingly tears space away from place by fostering relations between "absent" others, locationally distant from any given situation of face-to-face interaction. In conditions of modernity, place becomes increasingly phantasmagoric: that is to say, locales are thoroughly penetrated by and shaped in terms of social influences quite distant from them.

GIDDENS, *supra* note 3, at 18-19; see also DAVID HARVEY, *THE CONDITION OF POSTMODERNITY* 3-9 (1989) (discussing Jonathan Raban's perception of the urban city in Raban's book *SOFT CITY*).

[FN127]. See generally MICHEL DE CERTEAU, *THE PRACTICE OF EVERYDAY LIFE* (Steven F. Rendall trans., 1984) (arguing that readers of text are as active as writers of text in the production of meaning).

[FN128]. Schlag, *supra* note 14, at 1241.

[FN129]. Music in fact has much to do with postmodernism. One subtle irony posed by this question is that the common piety of postmodernists is the idea (which is also the act) of performance. Postmodern performance puts each of us on a stage even if we can't hold a note. In various ways, this question subverts the generally held idea of performance of the music as the performance itself (Tina Turner being the example par excellence of the performer qua performer): My choice of music is, to postmodernists, a type of performance (the consumer qua performer); the question about choice of music is also a performance, albeit textual (the text qua performer); and Russell Baker's rewriting of Walt Whitman's poem (see *supra* note 120) is a postmodern performance that transforms the first type of performer to the last.

[FN130]. Isaac, *supra* note 119, at 83.

[FN131]. Kitty Calavita and Carroll Seron, *Postmodernism and Protest: Recovering the Sociological Imagination*, 26 *LAW & SOC'Y REV.* 765, 766 (1992) ("While postmodernism defies easy classification and is almost by definition resistant to definitional boundaries, at base the postmodernist approach seems to entail a critique of social research, questioning Enlightenment values including notions of causality, commonality, and progress.").

[FN132]. Schlag, *supra* note 14, at 1218 (quoting MARTIN JAY, *MARXISM AND TOTALITY* 511-512 (1984)).

[FN133]. "[C]onsciousness is understood to be not a form of revealed wisdom but something that is constructed through social interaction; it is not an attitude or an idea but 'a way of operating,' enacted in social practices." Patricia Ewick, *Postmodern Melancholia*, 26 *LAW & SOC'Y REV.* 755, 760 (1992).

[FN134]. ROSENAU, *supra* note 25, at 22 (Some postmodernists "substitute [for

theory] a substantive focus on the local, on daily life, and on traditional narrative for the hegemonic theory of mainstream social science."). As one author noted:

This emphasis on specific historical locations does not deny that large-scale movements are possible, moreover. It instead envisions such movements in terms of potential alliances constructed through interaction among differently situated citizens rather than through the acceptance of an overriding meta-narrative and singular identity.

Michael W. McCann, *Resistance, Reconstruction, and Romance in Legal Scholarship*, 26 LAW & SOC'Y REV. 733, 747 (1992).

[FN135]. See *supra* note 3 and accompanying text (discussing the notion of the reflexivity of knowledge).

[FN136]. Lasch claims that the most significant Enlightenment impact on the idea of progress came from Adam Smith's rehabilitation of "ordinary ambition, vanity, [and] greed" as the driving forces of an economy. LASCH, *TRUE AND ONLY HEAVEN*, *supra* note 98, at 55.

[FN137]. According to Lasch:

The promise of universal abundance has always contained egalitarian implications without which it would have carried very little moral authority. Those implications were open to conflicting interpretations. Some people argued that it was enough to increase the general pool of goods and services, in the expectation that everyone's standard of living would rise as a result. Others demanded more radical measures designed not merely to increase the total wealth but to distribute it more equitably. But no one who believed in progress conceived of a limit on productive capacity as a whole. No one envisioned a return to a more frugal existence; such views fell outside the progressive consensus.

Id.

[FN138]. The movement termed "sustainable development" has an ecology-based critique of progress. See INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES, *WORLD CONSERVATION STRATEGY: LIVING RESOURCE CONSERVATION FOR SUSTAINABLE DEVELOPMENT* (1980) [hereinafter *WORLD CONSERVATION STRATEGY*].

[FN139]. See generally, *OUR COMMON FUTURE*, *supra* note 21.

[FN140]. LASCH, *TRUE AND ONLY HEAVEN*, *supra* note 98, at 168-69.

[FN141]. *OUR COMMON FUTURE*, *supra* note 21, at 213.

[FN142]. *Id.* at 228-29.

[FN143]. WILSON, *supra* note 19, at 346.

[FN144]. As the *WORLD CONSERVATION STRATEGY* states:

Human beings, in their quest for economic development and enjoyment of the riches of nature, must come to terms with the reality of resource limitation and the carrying capacities of ecosystems, and must take account of the needs of future generations.... For if the object of development is to provide for social and economic welfare, the object of conservation is to ensure earth's capacity to sustain development and to support all life. *WORLD CONSERVATION STRATEGY*, *supra* note 138, at I. The World Commission on Environment and Development also notes that:

Meeting essential needs requires not only a new era of economic growth for nations in which the majority are poor, but an assurance that those poor get their fair share of the resources required to sustain that growth.... [S]ustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs.

OUR COMMON FUTURE, *supra* note 21, at 8-9.

[FN145]. "Instead of the spectacular displays of power embodied in the sovereign, dramatized by the scaffold and played before an assembled audience, power is now invisibly and anonymously inserted into daily life." Ewick, *supra* note 133, at 758. "The point is ... this materialist conception of postmodernity asserts that those who would challenge power are now up against

something altogether different." Id. at 756.

[FN146]. Allan C. Hutchinson, *Doing the Right Thing? Toward a Postmodern Politics*, 26 LAW & SOC'Y REV. 773, 779 (1992). Hutchinson writes:

Postmodernism does not denigrate or dismiss the value and truth of historical experience or human suffering--that would be nonsensical and unpardonable. Instead, it avoids essentializing its value or truth by insisting on a multiplicity of values and truths....

In rejecting History, it does not ignore the lessons of history, and in rejecting Telos, it does not eschew the value of criticism. As all claims are located within a dynamic set of social practices, postmodernism insists that all theorizing pay attention to the structural circumstances of that social milieu and, in particular, to theorizing its own embeddedness in such historical contexts.

Id.

[FN147]. See generally Rob Kling, *Computerization and Social Transformations*, 16 SCIENCE, TECHNOLOGY AND HUMAN VALUES 342 (1991).

[FN148]. WIRED, which made its debut in the spring of 1993, is a computer magazine--early Rolling Stone meets PC Week--that celebrates this ethic of computer culture. A telling interview with Camille Paglia in its premiere issue, a portion of which is reproduced with the interviewee's handwritten corrections and comments (no Jeffrey Masson problem here), states:

[I was very i]nfluenced by McLuhan.... We all thought, "This is one of the great prophets of our time." What's happened to him? Why are these people reading Lacan or Foucault who have no awareness at all of mass media? Why would anyone go on about the school of Saussure? In none of that French crap is there any reference to media. Our culture is a pop culture. Americans are the ones who have to be interpreting the pop culture reality.

Stewart Brand, *Scream of Consciousness*, WIRED, Premiere Issue 1993, at 53 (copy with handwritten corrections on file with the author).

[FN149]. In just one half-week in July 1993, I noticed three cross-media instances of this phenomenon in just one newspaper. The New York Times reported Norman Mailer's observation that watching Oliver North's testimony on television was as addicting as watching cartoons. Scott Spencer, *Lawrence Walsh's Last Battle*, N.Y. TIMES, July 4, 1993, <section> 6, at 11. On the same day, it reviewed a new videotape that cut and pasted together similarly addictive testimony of Professor Anita Hill and Justice Clarence Thomas. Caryn James, *Television View; Hill and Thomas Testify Again for \$24.95*, N.Y. TIMES, July 4, 1993, <section> 2, at 26. The op-ed page a few days later carried several letters refuting Robert Bork's assertion that Supreme Court nomination hearings should not be televised. *High Court Nominations Were Always Political*, N.Y. TIMES, July 8, 1993, at A18.

[FN150]. See Duncan M. Davidson, *Reverse Engineering Software Under Copyright Law: The IBM PC BIOS*, in Weil & Snapper, *supra* note 7, at 147, 154- 56 (discussing successful attempts by IBM and Apple in preventing competitors from cloning software); Jon Wiener, *Murdered Ink*, THE NATION, May 31, 1993, at 743 (describing the Walt Disney Company's successful efforts to "kill" critical books). See generally BAGDIKIAN, *supra* note 24, at 3-26 (pointing out that twenty-three corporations control most of the U.S. media); CONTU REPORT, *supra* note 52, at 36 (Hersey, Commir., dissenting) ("The country has lately seen an alarming trend toward the concentration of economic power in all the communications industries.").

[FN151]. The Supreme Court recently granted certiorari in a copyright infringement case involving the music group 2 Live Crew's song "Ugly Woman," which is a parody of Roy Orbison's song "Pretty Woman." *Acuff-Rose Music, Inc. v. Campbell*, 972 F.2d 1429 (6th Cir.1992), cert. granted in part, 113 S.Ct. 1642 (1993). This case implicates racially-based rather than corporation-based cultural control, as well as sexism that transcends racial categories. The replacement of Orbison's sentimental lyrics and sappy melody with rap lyrics that an eight-year-old misogynist would find uproarious is not any type of progress. However, I do think that the claimed parody is a true parody--of unself-consciously "white bread" culture. One wonders how readily Roy Orbison's estate would have granted permission to a muzak-maker to pipe a muzak version into Wal-Marts across the land.

[FN152]. Henry Jenkins III, *Star Trek Rerun, Reread, Rewritten: Fan Writing as Textual Poaching*, in *CLOSE ENCOUNTERS: FILM, FEMINISM AND SCIENCE FICTION* 171, 172-73 (Constance Penley et al. eds., 1991).

[FN153]. Rosemary J. Coombe, *Author/izing the Celebrity: Publicity Rights, Postmodern Politics, and Unauthorized Genders*, 10 *CARDOZO ARTS & ENT.L.J.* 365, 366 (1992); Coombe, *Objects of Property*, *supra* note 120, at 1864.

[FN154]. The National Research and Education Network ("NREN"), a.k.a. the "data highway," was authorized by the High-Performance Computing Act of 1991, Pub.L. No. 102-194, <section> 102, 105 Stat. 1594, 1598-99 (1991), and is scheduled to be in place by the mid-1990's. Various government agencies, including the National Science Foundation, the Departments of Energy and Defense, and N.A.S.A. have been placed in charge of this research project that is being developed for educational purposes and which will be put to the service of private industry. See Patrick J. Leahy, *New Laws for New Technologies: Current Issues Facing the Subcommittee on Technology and the Law*, 5 *HARV.J.L. & TECH.* 1, 7 (Spring 1992). The NREN is designed to eventually replace the Internet, which is a loose, decentralized, and enormous web of computers that communicate with each other through 7,000 computer networks. Kevin Cooke & Dan Lehrer, *The Internet: The Whole World Is Talking*, *THE NATION*, July 12, 1993, at 60, 61; Priscilla A. Walter & Eric H. Sussman, *Protecting Commercially Developed Information on the NREN*, *THE COMPUTER LAWYER*, Apr. 1993, at 1, 2.

[FN155]. Mitchell Kapor, *Where Is the Digital Highway Really Heading? The Case for a Jeffersonian Information Policy*, *WIRED*, July/Aug. 1993, at 53; John Markoff, *Microsoft and 2 Cable Giants Close to an Alliance*, *N.Y. TIMES*, June 13, 1993, at 1, 31; Herbert I. Schiller, *The 'Information Highway': Public Way or Private Road?*, *THE NATION*, July 12, 1993, at 64.

[FN156]. See Kapor, *supra* note 155 (discussing the changing alliances in the development of the "digital highway" and their potential impact).

[FN157]. Cooke & Lehrer, *supra* note 154, at 62.

[FN158]. *Computer Assocs. Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir.1992); see also *supra* notes 50-79 and accompanying text (discussing the Altai opinion).

[FN159]. Kapor, *supra* note 155, at 54. "Interoperability" refers to the ability to use the same software on different types of hardware or, conversely, many different kinds of software on a single type of hardware. "Open architecture" is a computer design environment that easily accommodates software and hardware components made by different developers.

[FN160]. See *id.* at 54-55; Leahy, *supra* note 154, at 8-9; Christian H. Nandan & James W. Morando, *Standardization and Interoperability Become Key Factors in Copyright Law*, *THE COMPUTER LAWYER*, Apr. 1993, at 12; see also Victoria Slind-Flor, *Industry Groups in Conflict Over Software Protection*, *NAT'L L.J.*, Apr. 19, 1993, at 17, 20 (describing the American Committee for Interoperable Systems).

[FN161]. *Sega Enters., Ltd. v. Accolade Inc.*, 977 F.2d 1510, 1523 (9th Cir.1993) (accepting the fair use defense because the defendant had copied the plaintiff's code in order to study the requirements for compatibility).

[FN162]. See, e.g., the Sixth Circuit majority's reading in *Acuff-Rose Music, Inc. v. Campbell*, 972 F.2d 1429 (6th Cir.1992), cert. granted in part, 113 S.Ct. 1642 (1993) (holding that the rap parody is not fair use).

[FN163]. See, e.g., Jonathan Band & Laura L.F.H. McDonald, *The Fair Use Bill: A Funny Thing Happened on the Way to Congress*, *THE COMPUTER LAWYER*, Mar. 1993, at 9 (describing how some computer industry lobbyists attempted to block the recent amendment to section 107 of the Copyright Act of 1976, extending the fair use defense to unpublished works).

[FN164]. See Tom J. Farer, *Human Rights and Scientific and Technological Progress: A Western Perspective*, in *HUMAN RIGHTS AND SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT*, *supra* note 24, at 60, 63-64.

[FN165]. C.G. Weeramantry, *supra* note 24, at 151, 153. Weeramantry notes that:

[A] conscious choice on the part of the recipient country must determine what technology it will accept or reject. That choice is not purely a scientific one, but depends upon social and economic factors and the expertise of many disciplines. This becomes all the more important when we realize that science is essentially a social product.

Id.

[FN166]. *Id.* at 153-56.

[FN167]. D.C. JAYASURIYA, REGULATION OF PHARMACEUTICALS IN DEVELOPING COUNTRIES: LEGAL ISSUES AND APPROACHES 79-80 (WHO 1985).

[FN168]. See Arthur Wineburg, U.S. Trade Threats Spur Asian Laws on Intellectual Property, NAT'L L.J., July 13, 1992, at 29.

[FN169]. See Weeramantry, *supra* note 24, at 156 ("In other words, there has to be a break from the deterministic theory regarding technology which holds that technology runs an inevitable course and that it cannot be resisted as it has a motive force of its own."). Article 27 of the Declaration of Human Rights recognizes that "[e]veryone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits," although it goes on to state "[e]veryone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." Universal Declaration of Human Rights, G.A.Res. 217A(III), U.N.Doc. A/810 (1948).

[FN170]. See, e.g., Schlag, *supra* note 14, at 1248. Schlag notes that:

[T]he cognitive orientations that dominate judge-made law are largely prerationalism and rationalism. Now, in one sense, this can seem very amusing: law apparently is one field in which twentieth century thought can routinely encounter the thought of the eighteenth and lose ... frequently. But in another sense, this is not amusing at all--... it is eighteenth century conceptions--conceptions of responsibility, of agency, of harm, of language and meaning itself--that continue to rule the decisions of a late twentieth century technological society. Such a state of affairs is at once an intellectual embarrassment and a form of violence.

Id.

[FN171]. GIDDENS, *supra* note 3, at 40.

[FN172]. See U.S. CONST. art 1, <section> 8, cl. 8.

[FN173]. In doing so, I note that I am relying heavily on historical records of the most exclusionary kind, at least in the United States: intellectual history of white males. However, my purpose is not to reconstruct a "truer" version of history but merely to unearth one of many past perspectives so as to bring a fresh "insight, reminder, and argument" into the problem of knowledge and property. See Laura S. Underkuffler, *The Perfidy of Property*, 70 TEX.L.REV. 293, 305 n. 87 (1991) (book review) [hereinafter Underkuffler, *Perfidy of Property*] (quoting JEREMY WALDRON, *THE RIGHT TO PRIVATE PROPERTY* 136 (1988)). But see Robert W. Gordon, *Historicism in Legal Scholarship*, 90 YALE L.J. 1017, 1037 (1981) (noting that the "resigned" variety of historical scholarship recognizes that textual interpretation is historically contingent--but hey, "that's life.").

[FN174]. See JENNIFER NEDELSKY, PRIVATE PROPERTY AND THE LIMITS OF AMERICAN CONSTITUTIONALISM: THE MADISONIAN FRAMEWORK AND ITS LEGACY 5-6 (1990); cf. BOORSTIN, *supra* note 103, at 194 (stating that for Jeffersonians, a "list of 'rights' substituted for a systematic theory of government.").

[FN175]. NEDELSKY, *supra* note 174, at 28-29.

[FN176]. James Madison, *Property*, in 6 THE WRITINGS OF JAMES MADISON 102 (Gaillard Hunt ed., 1906) [hereinafter MADISON, WRITINGS] (emphasis added).

[FN177]. *Id.* (emphasis added).

[FN178]. Laura Underkuffler interprets the "free use of ... faculties" as many aspects of a property right. This understanding can be traced back to seventeenth century Whig ideology, in which these aspects of property were viewed as "natural rights which appertain to man, the protection of which was the chief object of the state's existence." Laura S. Underkuffler, *On Property: An Essay*, 100 YALE L.J. 127, 137 (1990) (citing CASIMAR J. CZAJKOWSKI, *THE THEORY OF PRIVATE PROPERTY IN JOHN LOCKE'S POLITICAL PHILOSOPHY* 23 n. 62 (1941)).

[FN179]. *Id.* at 136 (emphasis added).

[FN180]. In discussing the historical "comprehensive approach" to property shared by Locke, Madison, and others, Underkuffler states:

By distinctly tying the broad range of human rights contained within the concept of property to the development of human personality, the comprehensive approach not only assumes a collective role in the definition or limitation of individual property rights, but also assumes a collective context for their exercise and realization.

Id. at 140.

[FN181]. *Id.* at 135 (quoting 6 MADISON, WRITINGS, *supra* note 176, at 101).

[FN182]. After conclusionally stating "The utility of this power [of Congress with regard to patents and copyrights] will scarcely be questioned," he states, "The public good fully coincides in both cases with the claims of individuals." THE FEDERALIST NO. 43, at 271-72 (James Madison) (Clinton Rossiter ed., 1961).

[FN183]. Karl Fenning, *The Origin of the Patent and Copyright Clause of the Constitution*, 17 GEO.L.J. 109, 112-13 (1929). Madison introduced a set of proposals on August 18, 1787, which included provisions authorizing the national legislature "[t]o secure to literary authors their copy rights for a limited time" and "[t]o encourage by premiums & provisions, the advancement of useful knowledge and discoveries." BUGBEE, *supra* note 7, at 126. Charles Pinckney of South Carolina proposed a slightly different set. *Id.* The Convention referred both proposals to the Committee on Detail, which then drafted a clause which is virtually identical to the present clause. *Id.* at 126, 129.

[FN184]. THE FEDERALIST NO. 43, *supra* note 182, at 272.

[FN185]. Meyer posits and answers the following question:

How may self-interest and the public good both be given maximum protection? ... First, on the moral and rhetorical level, The Federalist makes a moral appeal to all Americans to transcend narrow self-interest and rise to the cause of the 'public good,' addressing itself to the good sense and the patriotism of the American people. Second, on what may be called the mechanical level, The Federalist demonstrates how the new Constitution provides a form of government that counterbalances private interests, protects basic rights, and ensures social order, thus showing that a political society can be intelligently engineered to achieve maximum moral efficiency.

MEYER, *supra* note 97, at 160-61.

[FN186]. The scope of the copyright statutes that existed in the United States and England between 1783-1786 was quite narrow compared to the subject matter embraced by the Copyright Act of 1976. At that time, such statutes generally only covered books. See *Alfred Bell & Co. v. Catalda Fine Arts, Inc.*, 191 F.2d 99, 100-01 (2d Cir.1951) (noting that all but one of the states had copyright statutes, but only Connecticut and North Carolina covered maps and charts in addition to books). The Virginia Copyright Act introduced by Madison granted copyrights to authors for their books for a term of twenty-one years. BUGBEE, *supra* note 7, at 121-22.

[FN187]. See John Locke, *The Second Treatise of Government* <section> 131, in TWO TREATISES OF GOVERNMENT 353 (Peter Laslett ed., student ed. 1988).

[FN188]. The question of whether copyright was a creation of the state, rather than a natural right appurtenant to authors, had been answered in the affirmative in England but not in the United States by the time Madison wrote

THE FEDERALIST No. 43. See *Donaldson v. Beckett*, 1 Eng.Rep. 837 (H.L.1774). That question was resolved in this country in *Wheaton v. Peters*, 33 U.S. 591, 661 (1834).

[FN189]. BUGBEE, *supra* note 7, at 130 (quoting 5 MADISON, WRITINGS, *supra* note 176, at 274-75).

[FN190]. NEDELSKY, *supra* note 174, at 29. This reference to monopolies could be to the long history of the sovereign simultaneously granting a monopoly of publication to specific printers for the exclusive right of publishing books, in exchange for their suppression and censorship of certain publications. KAPLAN, *supra* note 105, at 3-4; see also BUGBEE, *supra* note 7, at 44, 46, 50 (discussing Venetian and English efforts to control publishing). The English system of patent monopolies did not have the same history of abuse by the sovereign. The granting of patents was discretionary, but were not limited to specific groups of inventors. See Edward Armitage, *Two Hundred Years of English Patent Law*, in *TWO HUNDRED YEARS OF ENGLISH AND AMERICAN PATENT, TRADEMARK AND COPYRIGHT LAW* 3, 4 (1977). But both copyright and patents were closely associated with other forms of state monopolies. BUGBEE, *supra* note 7, at 35, 50.

[FN191]. Underkuffler, *Perfidy of Property*, *supra* note 173, at 135 ("In its larger and juster meaning, [property] embraces every thing to which a man may attach a value and have a right; and which leaves to every one else the like advantage.") (quoting 6 MADISON, WRITINGS, *supra* note 176, at 101) (emphasis in original).

[FN192]. 6 MADISON, WRITINGS, *supra* note 176, at 134.

[FN193]. "The Whig view of property found its most articulate and influential spokesman in John Locke. Locke's views exerted a powerful influence on the American Founders and on the early years of American jurisprudence." *Id.* at 138.

[FN194]. Jefferson wrote:

That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813) [hereinafter *Jefferson-McPherson Letter*], reprinted in Kurland & Lerner, *supra* note 13, at 42.

[FN195]. *Jefferson-McPherson Letter*, *supra* note 194, at 42-43.

[FN196]. Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO.L.J. 287, 296-330 (1988) (using Locke's theory of property to justify intellectual property).

[FN197]. Like Madison, Jefferson was not consistent in this view that freedom of access to knowledge was never to be relinquished to other property rights. Compare Letter from Thomas Jefferson to James Madison (July 31, 1788), in 5 THE WRITINGS OF THOMAS JEFFERSON 43, 47 (Paul L. Ford ed., 1895) [hereinafter *JEFFERSON, WRITINGS*], with Letter from Thomas Jefferson to James Madison (Aug. 28, 1789) in 5 *JEFFERSON, WRITINGS*, *supra* at 107, 113 (demonstrating Jefferson's changing views on the necessity of monopolies).

[FN198]. MAY, *supra* note 94, at 218.

[FN199]. Sagar, *Introduction to JEFFERSON'S TRAVEL DIARIES*, *supra* note 109, at 12.

[FN200]. Meyer states:

Ideas are more easily imported than objects and institutions. Because of this, the Americans absorbed many eighteenth-century ideas while possessing few of the institutions, artifacts, and conventions that gave them special meaning. While this imposed obvious limitations on the American mind, it also presented Americans with special opportunities. Institutions hamper ideas as well as sustain them, and their institutional

shortcomings allowed the Americans, almost without thinking about it, to put many of their imported ideas to work without opposition. MEYER, supra note 97, at xx-xxi.

[FN201]. Records of the Federal Convention, in 3 Kurland & Lerner, supra note 13, at 40.

[FN202]. MAY, supra note 94, at 84.

[FN203]. Id. at 217.

[FN204]. BUGBEE, supra note 7, at 84-103.

[FN205]. Even England, "fruitful ... in new and useful devices," did not grant patents as a matter of right. In the mid-eighteenth century the royal grant of a patent was discretionary to an extreme. Armitage, supra note 190, at 4 (citing Jefferson-McPherson Letter, supra note 194, at 43).

[FN206]. Kenneth J. Vandavelde, The New Property of the Nineteenth Century: the Development of the Modern Concept of Property, 29 BUFF.L.REV. 325 (1980). But Jefferson recognized that even ownership of real property was a social construct rather than a natural right. He wrote: "Stable ownership is the gift of social law, and is given late in the progress of society." Jefferson-McPherson Letter, supra note 197, at 42.

[FN207]. Letter from Thomas Jefferson to James Madison (July 31, 1788), in 5 JEFFERSON, WRITINGS supra note 176, at 43, 47.

[FN208]. BUGBEE, supra note 7, at 149.

[FN209]. Jefferson-McPherson Letter, supra note 194, at 42.

[FN210]. "The history of human progress from the Jeffersonian point of view was thus 'the history of the condition of man.' Man's condition could and would be improved. But under American circumstances it was hard to distinguish improvement from expansion, progress from enlargement." BOORSTIN, supra note 103, at 225. "When the Jeffersonians spoke of 'happiness' it was ... in such phrases as 'the happiness of the species' or 'the happiness of mankind' which signified material prosperity and survival power." Id. at 53.

[FN211]. His European Travel Diaries, for example, record what might seem a random mix of observations of soil, air temperature, water, geological formations, crops, social organizations, clothing, food, and wine quality. But he was attentive to the differential impact of agricultural knowledge and technology on a people's standard of living (for example, red grape growers as opposed to white; women as opposed to men):

At Pommard and Volnay I observed (laborers) eating good wheat bread; at Meursault, rye. I asked the reason of this difference. They told me that the white wines fail in quality much more often than the red and remain on hand. The farmer therefore cannot afford to feed his laborer so well. At Meursault only white wines are made because there is too much stone for the red. On such slight circumstances depends the condition of man! JEFFERSON'S TRAVEL DIARIES, supra note 109, at 41.

[FN212]. Nedelsky notes an interchange between Jefferson and Madison regarding property that suggests Jefferson was not wedded to existing property distributions. NEDELSKY, supra note 174, at 32-33. But Boorstin doubts that Jefferson was concerned with distributional aspects of property. BOORSTIN, supra note 103, at 199. Meyer writes that "[t]he ideal Jeffersonian state would liberate the active intellect as well as the entrepreneurial initiative, but it would do little to encourage or compensate those in whom years of social injustice arrested the intellect or destroyed initiative." MEYER, supra note 97, at 123.

[FN213]. U.S. CONST. art. I, <section> 8, cl. 8.

[FN214]. "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries...." Id.

[FN215]. KAPLAN, *supra* note 105, at 2. He writes:

[I]f man has any 'natural' rights, not the least must be a right to imitate his fellows, and thus to reap where he has not sown. Education, after all, proceeds from a kind of mimicry, and "progress," if it is not entirely an illusion, depends on generous indulgence of copying.

Id.

[FN216]. Ewick, *supra* note 133, at 756.

[FN217]. Steve Fuller, *Studying the Proprietary Grounds of Knowledge*, in *TO HAVE POSSESSIONS: A HANDBOOK ON OWNERSHIP AND PROPERTY* 105, 109 (Floyd W. Rudmin ed., 1991).

[FN218]. See, e.g., *Atari Games v. Nintendo of Am.*, 975 F.2d 832, 839-40 (Fed.Cir.1992) ("If the patentable process [protected by Title 35] is embodied inextricably in the line-by-line instructions of the computer program ... then the process merges with the expression [protected by Title 17] and precludes copyright protection."); *Lasercomb Am. v. Reynolds*, 911 F.2d 970 (4th Cir.1990) (holding that the misuse of copyright is a valid defense to a copyright infringement action); Michael T. Helfand, *When Mickey Mouse Is as Strong as Superman: The Convergence of Intellectual Property Laws to Protect Fictional Literary and Pictorial Characters*, 44 *STAN.L.REV.* 623 (1992) ("Courts have merged, in an unprecedented fashion, the different intellectual property laws that protect against unauthorized use of [fictional literary and pictorial characters]."); Stephanie Strom, *Enlisting the Copyright Law In Battling the 'Gray Market'*, *N.Y. TIMES*, July 21, 1992, at D1 (reporting a fragrance company's use of copyright rather than trademark law to protect the distribution of its products).

These same insights can be applied to other branches of intellectual property. Trademarks have become expressive of things other than manufacturing source and have strong cultural components. See Rochelle Cooper Dreyfuss, *Expressive Genericity: Trademarks as Language In the Pepsi Generation*, 65 *NOTRE DAME L.REV.* 397 (1990). See generally Coombe, *Objects of Property*, *supra* note 120, at 1880. In the area of trade secrets, public interests such as health and environmental concerns might take precedence over the right of innovators. See Mary L. Lyndon, *Secrecy and Innovation in Tort Law and Regulation*, 23 *N.M.L.REV.* 1, 55 (1993) (arguing that "[t]rade secrecy doctrines ... should not be applied to health and environmental information" in the developed world).

[FN219]. *Jefferson-McPherson Letter*, *supra* note 194, at 42.

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