

Thirty-Two Short Stories About Intellectual Property

LORIE GRAHAM* AND STEPHEN MCJOHN**

CITE AS: 3 Hastings Sci. & Tech. L. J. 1
<http://hstlj.org/content/vol3/iss1/v3i1graham.pdf>

I. Introduction

In the United States, intellectual property law is usually viewed as serving an economic policy by providing an incentive for authors and inventors to create works. The incentive policy, however, ill fits the actual contours of intellectual property law and how artists and inventors use it. Adding other approaches offers a fuller explanation. Intellectual property plays a greater role than economic theory suggests in disclosing technology, and in serving to coordinate cultural values in technology. Intellectual property can serve human rights (similar to the moral rights approach in some jurisdictions) by allowing people to control the way that their works are publicly exploited and by allowing groups (such as indigenous peoples) to implement rights of self-determination, education, and media. In assessing doctrine and theory, deductive reasoning from economic or legal principles is no more important than literary tools, like interpretation and narrative. These points can be illustrated by some stories.

II. Fiction Stranger than Hypothetical

A copyright hypothetical: In a novel, *Atavistic Avatar*, a robot arrives on Earth in a spaceship disguised as a 1967 Cadillac. The robot looks and behaves as much like a human as its makers could manage, working from radio waves that reached their planet (some decades back, to give time for the programming to reach them, a ship and robot to be built, and to travel here). Despite their advanced technology, the robot's makers could not muster sufficient artificial intelligence for automatic translation of conversational speech.¹ The robot speaks from a vast library of canned phrases gleaned from earthly broadcasts: "Sometimes words have two meanings."²; "I'm sorry, Dave. I'm afraid I can't do that."³; "Don't worry about a thing, 'cos every little thing is gonna be alright."⁴ Suppose the character quoted 100 lines from 100 different songs and movies during the course of the novel.⁵ The novel's author could infringe 100 copyrights (for statutory damages of at least \$75,000, and possible much more) or no copyrights, depending on how a court applied fair use.⁶

According to recent cases, even such minimal quotes might be infringement. Fair use was held inapplicable, where a song repeatedly copied the words "Bow wow wow, yippie yo, yippie yea" from George Clinton's *Atomic Dog*.⁷ But sprinkling song lines in a novel is different than repeating the same line throughout a song, in an industry with established licensing for such uses. Author could decide to rely on fair use. If risk averse,⁸ Author could use legal

strategies to reduce the chances of infringement. Author could use lines from just one movie or song, reducing the amount of possible statutory damages—but raising the chance of infringement, due to increased copying from that work. Author could just use lines from public domain sources (pre-1920 works, government works like judicial opinions or presidential speeches, purely factual works). But that would mean giving up Bob Dylan for Herbert Hoover. To use technicalities, Author could copy only from works whose copyright has not been registered, because statutory damages would not be available (and actual damages would be hard to prove).

Novelist Carl Hiassen independently came up with a better solution (likely without even thinking of copyright law). In Hiassen's *Sick Puppy*, one character drops the words of rock songs into everyday conversation—but always comically wrong. His utterances are fair use, because they take only part of fragments of the quoted works and Hiassen added creative expression by transforming rather than simply quoting.⁹ Nor is there a licensing market for misquotations, as opposed to sampling in the recording industry.¹⁰

Beyond showing that novelists are more creative than law professors,¹¹ this gently tests a hallowed principle of copyright law. Copyright has fair use and the nonprotection of ideas as “built-in protections for freedom of speech” on the theory that copyright exists to spur creativity and must give way where necessary to encourage subsequent creative works.¹² But the very constraints of copyright can serve as an impetus for creativity.¹³ Constraints trigger creativity in many ways, from censorship (from movies under the Hays code to modern writers contending with web filters, authors can layer meaning to defy restrictions), literary forms (from the unities in Greek drama to poetic forms like sonnet and haiku), to the internal constraints of a work's plot and characters. Constrained artists sometimes can be more creative. “Deprivation is for me what daffodils were for Wordsworth.”¹⁴ That does not counsel imposing censorship, shrinking fair use, or putting artists in garrets. It suggests looking beyond incentive in copyright policy. The Constitution¹⁵ and courts speak in terms of copyright as a carrot. But that rationale hardly fits the shape of copyright law, whose contours go well beyond the protection necessary to encourage creation of works.¹⁶ Copyright law, if it served only to provide incentives to create works, would only apply to certain categories of works and would have real limits on duration. But copyright automatically attaches to any work, even works that would be created without copyright (diaries, academic works, hobbyist software, etc.) and lasts seventy years past the author's death. Copyright, increasingly, makes more sense as balancing the rights of authors to control their works against the interests of others in using the work.¹⁷

III. Case of the Missing Case

Three Supreme Court cases dominate any discussion of fair use. *Sony* held that it was fair use for consumers to use video cassette recorders to time shift television programs.¹⁸ *Harper and Row* held that it was not fair use for The Nation to quote several hundred key words from the autobiography of former President Gerald Ford.¹⁹ *Campbell* held that it could be fair use for 2 Live Crew to make a parody version of Roy Orbison's *Pretty Woman*.²⁰ Those cases are likely to appear whenever fair use is an issue.

One case will be absent from such a discussion. In *Stewart v. Abend*,²¹ the Supreme Court held that it was not fair use for the producers of Alfred Hitchcock's film *Rear Window* to continue showing the film after their rights were terminated in the underlying story, *It Had To Be Murder*. *Stewart* was decided between *Sony* and *Harper & Row*. But appellate opinions and law review articles devote pages of analysis to the big three, but rarely even a glancing reference to *Stewart*. *Stewart*'s fair use analysis does not appear in leading copyright casebooks²² or supplemental texts on intellectual property for law students.²³ *Sony*, *Harper & Row*, and

Campbell appear together every time, like three musketeers. The case of Hitchcock's film does not even make a cameo.

Fair use is a notoriously difficult doctrine to apply. Three Supreme Court cases comprise a small set of authoritative precedent. In such a fact-bound area, one more Supreme Court case on point would enrich the law. *Stewart* has much to offer. Unlike the other cases, *Stewart* involves a dispute between a copyright holder and a licensee. Many copyright disputes involve parties that had licensing agreements. *Stewart* also helps explore the boundaries of fairness. The defendants had bargained for movie rights to the story, but lost them through unanticipated changes in the law and the happenstance of the author's death. Whether it would have been appropriate to allow them to continue showing their movie, but allow the copyright owner to license other uses, raises interesting questions about the "fair" in fair use.

But *Stewart* has disappeared, like a character in *Rear Window*. As to the reason, there are several suspects. Brevity could have been mistaken for lack of depth. The fair use discussion in *Stewart* is short, but acute. Most of the opinion deals with a complex interpretation of the copyright statute's termination provision. Maybe the audience does not stick around for the fair use part of the opinion. Perhaps *Stewart* was excluded by our taste for grouping things in three. No more than three scientists may share a Nobel Prize. An Olympic podium has three spots. Innumerable stories, from *Harry Potter* to *Huckleberry Finn*, have three principal characters. Most likely, *Stewart* was simply passed over in the narrative structure of case law. In interpreting the common law, we repeat the story that we have heard in earlier cases. In analyzing the case law on fair use, *Harper & Row* left *Stewart* on the cutting room floor and discussed *Sony*. *Campbell* then relied on *Harper & Row* and *Sony*. Lower courts take their cue from the Supreme Court, and *Stewart* simply did not become part of the story. Just as *Rear Window* reminds us we cannot always trust our eyes, so the story of *Stewart* reminds us to look a little deeper into the stories we rely on. After the parties finally resolved their copyright dispute, *Rear Window* was successfully rereleased. Perhaps *Stewart's* fair use analysis will likewise find a renewed audience.²⁴

IV. The Power of Suggestion

Trademark law's distinctiveness requirement often pits businesses against their lawyers. To market a product, the business would like to use a name that describes the product. But a merely descriptive term is not protectable as a trademark, so competitors can also use that descriptive term to market their products.²⁵ An arbitrary or fanciful term, which has no logical connection with the product, will be interpreted by consumers as a trademark and so is protectable.²⁶ But such a symbol tells potential buyers nothing about the product.²⁷ Trademark law offers a middle ground: protection for suggestive marks, symbols which indirectly give information about the product.²⁸

Perhaps no industry has used the suggestive mark as skillfully as the pharmaceutical industry. Their lawyers and marketers have smoothly navigated the constraints of trademark law to find terms that are attractively suggestive. Some examples:

- Claritin and Flonase, clarity and flow for allergy sufferers;
- Cardura, lending strength against high blood pressure;
- Requip, against Parkinson's disease;
- Ambien, Stilnox, and Lunesta, as respites from insomnia;
- Provigil, for sleepiness;
- Zoloft, Wellbutrin, Prozac to lift from depression; and
- Abilify, for schizophrenia.

With drugs, suggestiveness comes into play not just as a marketing tool. The user's mental state can affect how well the user considers the product to work. The placebo effect is strong. We might speculate that a suggestive name could have a stronger placebo effect than an outright descriptive name. Descriptions we can deal with at a more conscious level, armed with the tools of skepticism and rationality. Subtle suggestions may take hold beyond those barriers. Suggestive marks might also have advantages in the regulatory realm. The regulations of the United States Food and Drug Administration bar misleading names.²⁹ But those regulations bar only names that make baseless claims for therapeutic value or are confusingly similar to drugs already on the market.³⁰ To test whether one of the redolent names above was truly misleading would require double-blind trials of the sort used to test drugs themselves. So a legal constraint—the bar for protection of descriptive names—provides an incentive to create suggestive names, which may prove more valuable for other reasons.

The mental associations involved in drug marketing can play out to reduce trademark protection. When the patent expires on a drug, generic manufacturers will sell substitutes. In order to win over purchasers, a generic seller may wish to sell the drug in the same form: the same shape tablet, in the same color. In traditional trademark law terms, the shape and color of a tablet could be protected as trade dress. The product is a biologically active chemical: its chemical function does not depend on the shape of the tablet or its color. But courts have held that the shape and color may have lost their trademark function,³¹ just as "Aspirin" lost its trademark function when it became the generic term for acetylsalicylic acid.³² Because of the strong mental association the consumer has with the familiar tablet, as well as the consumer's suspicion that a different looking tablet will not work as well, the shape and color could have become generic for that category of product—or even functional, because they affect how effective the drug will actually be for the consumer.³³ A trademark becomes a product.

V. Guilt by Association

Trademark law is intellectual property, but also physical property, in a sense. Trademark protects the mental association between a commercial item and its source.³⁴ The standard for trademark infringement, like the standard for priority of trademark ownership, is whether a challenged symbol is likely to cause confusion or deception among potential buyers.³⁵ A mark receives increasing protection if it becomes well-known: "The more deeply a plaintiff's mark is embedded in the consumer's mind, the more likely it is that the defendant's mark will conjure up the image of the plaintiff's product instead of that of the junior user."³⁶ Famous marks receive their own category of protection, against dilution by tarnishment or blurring.³⁷ Commercial parties recognize as much, speaking of competing for brain space as they compete for shelf space in a supermarket, just as they seek to attract "eyeballs" for ads. Trademark rights mean ownership over the contents of a consumer's brains—in a very limited way. One can know many marks, and freely use them—or think with them. Only use of the mark for commercial purposes in a potentially deceptive or confusing manner infringes, so most uses of those words remain unencumbered.

An empirical research project, nevertheless, would be to attempt to estimate just how much of our brains have been so propertized. Brain imaging technology is a long way from being up to such an exact task,³⁸ so proxies would be required. There are some three hundred thousand entries in the *Oxford English Dictionary* (OED).³⁹ The USPTO's Trademark Electronic Search System contains over three million marks (whether live, dead, or pending).⁴⁰ That number, however, does not represent the number of separate words used as marks. It includes many duplicates (because the same word can be a mark in different commercial sectors, as in United

Airlines and United Van Lines), many non-word symbols (such as designs or coined marks), many composite marks (made up of two or more words) and even a few sounds. Perhaps one could use a similar method to that used in estimating the size of a person's vocabulary. One can take a section of the dictionary and see what percentage of the entries a person recognizes, and extrapolate that to the entire dictionary. If Subject recognizes forty percent of the words in a sample of the OED, then we can estimate that Subject would recognize forty percent of the OED, or has a vocabulary of one hundred and twenty thousand words. We could take a section of the OED, and see how many of those words are registered as marks, to give an estimate of how much of English has been trademarked. We could also take the words that people recognized from a sample of the OED, and see what percentage of those were registered marks, which would give a rough estimate of the percentage of a person's vocabulary that has been trademarked. But that might be overinclusive (because the person might know that word in its literal, rather than trademark sense) and underinclusive (because it would leave out the many marks that are not in the dictionary, not being words). We could start at the beginning. Linguists also make lists of the first words acquired by children. It would be quite telling to see what percentage of a child's first few hundred words were trademarks (like "Barney" or "Elmo").

VI. Demons as Collateral

For some artists, copyright law seems to provide an incentive for creative legal thinking. Woody Allen brought cases raising the issues of whether the right of publicity applied to a celebrity look-alike⁴¹ and whether it applied to a celebrity non-look-alike (a photo of the celebrity in disguise).⁴² Terry Gilliam successfully sued the American Broadcasting Corporation to prevent Monty Python episodes from being bowdlerized.⁴³ The case fills a gap in United States copyright law, which provides little protection for the moral rights of artists.⁴⁴ Under *Gilliam*, artists may sometimes be able to use that old workhorse, contract law, to protect their work from the editor's scissors. Gilliam was later held liable for copyright infringement for a minor use of another's drawing in his film *12 Monkeys*, an important precedent for such issues as whether sampling from a copyrighted song is fair use.⁴⁵

Annie Leibovitz created a portrait of a pregnant Demi Moore for the cover of *Vanity Fair*. The producers of the film *Naked Gun* used a parody of the photograph in advertising, one which substituted the blocky head of comic actor Leslie Nielsen for Ms. Moore's.⁴⁶ Leibovitz sued for copyright infringement, but lost on the grounds of fair use. The advertisement was held to transform the image. Rather than preventing further publication of the parody, the lawsuit caused it to be published much more widely. The photograph went from the movie section of the newspaper to the front page, the *National Law Journal*, copyright casebooks, classroom power points and other educational and reporting fair uses. The case also highlights a contrast in comparative copyright. Where the moral rights of authors receive greater protection than in the United States, the case might have triggered an artist's right to prevent distortion of her work.

Another lawsuit involving Ms. Leibovitz tests the possibilities of treating copyright as property.⁴⁷ Ms. Leibovitz put up as collateral a proverbial floating lien in the copyrights to her existing work and any future works. In jurisdictions that grant strong recognition to moral rights, Ms. Leibovitz might not have been able to grant such broad rights. An artist's rights to such future works could be inalienable. But in the United States, copyrights are treated like typical personal property. A party can effectively put up collateral property she will own in the future.⁴⁸

The case also raises questions about enforceability. The creditors might have the right to Ms. Leibovitz's future copyrights, but she might not create new valuable works. From Ms. Leibovitz's point of view, if in default on the loan, she might not have a financial incentive to create new works that would benefit only her creditors. But that views copyright from only the incentive rationale. Her creative drive would continue. "An artist is a creature driven by demons. He doesn't know why they choose him and he's usually too busy to wonder why."⁴⁹ Without financial constraints, her purely artistic impulses might have greater freedom. Or perhaps the creativity of her lawyers might provide another way. If she became an employee, her employer would be the author and therefore copyright owner in any work she created. In short, the case shows considerable tension between the idea of copyright as incentive for artists and the actual forces that drive artists.

VII. Point of View

The United States Postal Service decided to issue a stamp with the image of the Korean War Veterans Memorial, with its sculpture of soldiers on patrol.⁵⁰ The USPS chose a beautiful image of the sculpture in snow.⁵¹ The USPS signed a licensing agreement with the photographer, but did not seek permission from the sculptor.⁵² We might expect no copyright issues, because U.S. Government works are not copyrighted. But the sculptor was an independent contractor, not a federal employee, so the copyright had vested in him.⁵³ When he sued for infringement, the USPS defended on the basis of fair use, arguing that the snowy image was a transformative fair use.⁵⁴

From the USPS's point of view, fair use might seem plausible. The four statutory factors are the nature of the use, nature of the work, the amount used, and the effect on the market for the copyrighted work.⁵⁵ The photograph was itself a creative work that added something to the work. Public sculptures commissioned by the United States, commemorating historical events, might seem amenable to public use. The stamp did not show all of the sculptures, and some were partially covered in snow. The use of the sculpture on a stamp might not cut in to other markets for the work.

From the sculptor's point of view, another picture emerges. The United States had offered the sculptor a commission to create a work. He agreed, but was adamant about keeping the copyright. With respect to market effect, the United States routinely places national monuments on stamps, an entirely foreseeable market at the time of the agreement. The photographer made the picture as a private gift to his father, a veteran.⁵⁶ When the United States offered the photographer a licensing fee to use the image on a stamp, the photographer advised them that they would also need permission from the sculptor.⁵⁷ The United States did not add any creative elements to the image (beyond adapting it for use on the stamp), undercutting its claim of transformative use. Viewed this way, applying fair use would hardly further the creative freedom of artists. It would simply allow hiring parties to rewrite contracts unilaterally.

The case illuminates the elusive nature of fair use. The fair use framework attempts to capture the analysis in four factors. This echoes the lawyer's term for a case: fact pattern. Fair use cases, however, can rarely be sorted into four neat factors. The cases take on an individual narrative logic. After several landmark Supreme Court cases, and dozens of thoughtful lower court analyses, fair use law can present a case with a new category of facts.

VIII. Derivative Fair Use: Piggybacking Allowed?

Photographer takes a photo of a painting hanging in a museum. Beyond trying to just get a good rendition of the painting, Photographer includes several other elements. She picks an

angle a little bit to the side and below the normal line of vision. She waits until the sunlight creeps down the wall. She gets the shadow of a viewer with head cocked and elbows akimbo. Photographer does not have permission to take a picture, but may well be within fair use—especially if we put our thumb on the hypothetical scale and say that Photographer has no commercial use in mind and is simply making a picture for an art class.

Artsypixels.com gets wind of the picture, perhaps from Photographer's teacher. Artsypixels.com makes nice money by putting interesting images online and selling ads alongside. If Artsypixels.com put the image on its website, that raises the question of fair use: in particular, the extent to which Artsypixels.com can rely on any transformative use made by Photographer. The case law to date has not yet addressed it, but courts have touched on related questions. In deciding whether a use is commercial or not, courts look to the use of the defendant. Where a copy shop was sued for making course packs containing substantial excerpts from copyrighted books and articles, its use was held commercial. The copy shop could not rely on the fact that it was making the copies to sell to students, who would be making noncommercial, education use of the works.⁵⁸ In *Sony*, the question was whether a consumer using a video cassette recorder to time shift television programs for future viewing was protected by fair use.⁵⁹ The Supreme Court characterized it as a private, noncommercial use—even though the ultimate issue was whether the sellers of the VCR's were liable for contributing to alleged infringement by consumers.

But whether transformative use carries over is different. Two hypotheticals at either extreme demonstrate as much. Suppose Parodist writes a scathing parody of Author's short story. That would likely be fair use (although we would have to spell out the facts more specifically to be sure). Author wisely desists from suing Parodist—but could Author recover from any website or print publisher that made, sold, or distributed copies, on the theory that they were not making a transformative use, simply making copies? Surely Parodist's transformative use rubs off a little on those that distribute the work—or else fair use would have little meaning to someone that did not have their own media outlet. In this case, transformative use would seem to transfer.

As an exercise, Author writes a script for a movie she has no intention to make, *Harry Potter 8*. The sequel transforms, so to speak, the Potter saga to university life. Author writes to vent her creative force, comment on the *Harry Potter* books, sharpen her writing skills, amuse her friends, and to meet an assignment for her class in screenwriting. That would be fair use. If her teacher sends the script to Movie Studio, though, it surely could not make and distribute the film, reaping millions of dollars, simply because writing the script was fair use. So in some cases, transformative use does not carry.

There appears, however, to be no case law on point. Certainly many decided cases could have addressed the issue. 2 Live Crew did not personally press the records in *Campbell*,⁶⁰ and the author of *The Wind Done Gone* did not have her own printing press.⁶¹ But evidently neither litigant differentiated between the roles of the parties there—which were more closely linked than the ones in our two hypothetical stories. There are plenty of uncharted waters in fair use.

IX. Transformative Determinative

*The Victor Sees his Fairy Gold,
Transform'd, When Won, to Drossy Mold.*⁶²

The word “transform” has taken on importance in intellectual property law. Under *Campbell*,⁶³ fair use is more likely to apply if a “transformative use” is at issue. The Supreme Court, following a law review article by Judge Pierre Leval, held that parody would often qualify as transformative.⁶⁴ Lower courts have placed even greater importance on the term, even as they moved away from its literal meaning.⁶⁵ Thumbnail versions of photographs, displayed by Google to users searching for images, were held transformative—not because there was creativity in making the small, low-resolution, and purposefully inferior images. The use was considered transformative because the images were used for a different purpose—to facilitate searching for images online.⁶⁶ Similarly, putting student papers into a database for detecting plagiarism was sufficiently different from their original use to be held “transformative.”⁶⁷

An influential California Supreme Court case held that whether a use was “transformative” was key to whether use of someone’s image was protected by the First Amendment from claims of violation of the right of publicity.⁶⁸ A transformative work is “not only especially worthy of First Amendment protection, but it is also less likely to interfere with the economic interest protected by the right of publicity.”⁶⁹ Whether the work was transformative depended not on whether it portrayed the celebrity at issue, but whether the work’s message was to portray the celebrity or to convey the defendant’s expression.⁷⁰ The case has meaning for trademark law as well, because a broad right of publicity can spill over into a trademark-like right.⁷¹

The Federal Circuit, for a time,⁷² made “transformative” determinative of whether a process is patentable.⁷³ So enamored of the “transformative” test was the court, that it paid little heed to conflict with rather clear language in Supreme Court opinions.⁷⁴ As with “transformative” in fair use, the court did not require a literal transformation. Transformation of data about an object would be sufficient, even if the object itself did not change in form.⁷⁵

So “transformative or not” became the test for several difficult issues in intellectual property, each involving conflicting policies. The copyright statute provides a four factor analysis for fair use issues, but the issue of author’s rights versus rights of others to express themselves with those works remains one of the most vexing. Despite decades of case law on patent subject matter, the boundary between patentable inventions and nonprotectable ideas is likewise impossible to locate with any confidence. The conflict between the right of publicity and rights of free expression is similarly complex. The courts looked to the word “transform” to resolve these disparate questions. Courts did not rely on the literal meaning of the word. Something that “transform” connotes must make it attractive. Courts use the phrase “magic words” disparagingly.⁷⁶ Ironic, then, that courts place so much importance on whether something is “transformed,” the classic word magicians use to describe their illusions.

X. How to Sue Yourself

Copyright law differs from patent law in many ways. A patent applicant must claim her invention, submitting patent claims that distinctly define the invention. An author need not even register a work to have copyright.⁷⁷ If she does register, she need merely deposit copies of the work, without defining what elements are protected.⁷⁸ She need not separate her original creative expression from the uncopyrightable elements, such as facts, ideas, and material from other sources.⁷⁹ She can claim copyright very easily, with the “©” symbol on copies of the

work. She can also send menacing letters to alleged infringers, again, without spelling out what protected elements are infringed.

So copyright lends itself to spurious claims. Publishers may put copyright notices on books that contain material from the public domain, whether old folk songs, government information, or literary classics. Some justify the notice on the theory that they have added some creative material. West Publishing even once claimed copyright in compilations of judicial reports. West claimed not just copyright in material that West wrote, such as keynote summaries, but copyright in the opinions themselves, on the theory that it had creatively added . . . page numbers.⁸⁰ Another category of spurious claims involves cases where the works are indeed under copyright, but the use at issue is well within the boundaries of fair use, such as snippets of quotations used in literary analysis. Publishers are often shy of litigation, and as copyright holders themselves often do not want to battle for fair use of published works. Authors, filmmakers, and other artists have often been stymied by such threats.

A number of legal theories have been brought forward to found liability against such spurious claims.⁸¹ In recent cases, users of creative works have realized that they do not need a cause of action. They can sue themselves for copyright infringement. In legal terms, where a party has threatened to sue for copyright infringement, the other party can respond by instituting the action themselves, as an action for declaratory judgment that the use at issue does not infringe copyright. Declaratory judgment actions are a staple of patent and trademark litigation, where competitors often seek judicial clarification of their disputes over more strictly commercial rights to a market. So eager to get to court are many potential defendants that the Supreme Court recently drew the starting line on just how much assertion of rights by a patentee creates sufficient controversy for the other party to go to court.⁸² If a party asserts that others are using her intellectual property, she may have to defend that assertion in federal court, even if she “avoids the magic words such as ‘litigation’ or ‘infringement.’”⁸³ Although declaratory judgment actions have been much scarcer in copyright, parties threatened by copyright claims have learned that sometime it pays to file the first writ.

An adroit use of this technique involved the works of James Joyce.⁸⁴ The Joyce estate liberally threatened copyright infringement actions against anyone who so much as quoted a few words from Joyce’s writings, even though such use is the very embodiment of fair use. The threats made it difficult for those writing about Joyce to find willing publishers. A literary scholar brought a declaratory judgment action, winning not just a decision upholding the application of fair use, but also an award of attorney’s fees, meaning the Joyce estate funded the litigation against itself establishing fair use of its copyrighted works.

A bumpier path involved the adaptation of an Associated Press photograph of Barack Obama. The adapted image was combined with the word “Hope” in a campaign poster. After the AP discovered that its copyrighted images had been used, it made some public grumblings about copyright infringement. The AP showed little interest in actual litigation because the artist had a pretty strong fair use argument. The artist, however, filed a declaratory judgment action. During litigation, the artist made misrepresentations about which images he had used. Several photographs had been made of the same occasion, from different points of view. The artist evidently reasoned that if he had copied from a photo less similar to his final product, then he would have made a greater transformation, strengthening his fair use argument. The result was to open himself up to sanctions and to undercut any remedy he was likely to receive—in a lawsuit that need not have been brought.

This sounds like the story of a successful declaratory action and one gone awry. But that is from a lawyer’s point of view. The first action allowed a Joyce scholar to make freer use of Joyce’s writings. The second brought much more publicity, and to an artist with a record as a

provocateur. Perhaps both were successful from different points of view. Certainly, they emphasize that the lawyer's view of copyright law and its incentives may be different from the artists who create copyrighted works.

XI. Distillation to Attribution

People give intellectual property away. In recent years, this has been somewhat formalized. Free software (known as open source software to some) is distributed almost free of copyright.⁸⁵ If Ada writes some code and distributes it under the GNU General Public License,⁸⁶ she allows anyone who wants to make copies, use the software, adapt the software and distribute the adaptations.⁸⁷ But Ada does not abandon her copyright. She distributes copies subject to the license terms. Those terms are far more permissive than the terms that accompany almost any other service or product. But they usually do have two big requirements.⁸⁸ First, the taker cannot impose restrictions on the copies of the software that she distributes. This means that the software remains free, in the sense that it will not be encumbered by restrictions against use, adaptation, or making more copies. Second, if Ada is like most free software licensors, she will require attribution. Anyone that adapts or redistributes the software must give her credit (and avoid attributing modifications to her, which also protects her reputation).⁸⁹ There has not been much litigation involving open source licenses,⁹⁰ because people tend to sue over more monetized disputes. But the single appellate decision on the issue held that it was copyright infringement to make copies without the required attribution.⁹¹

The idea of free licensing has spread to other types of works.⁹² The best known free license for distributing books, music and the like is the Creative Commons license.⁹³ Creative Commons made it quite easy for artists to create intellectual property licenses. The CC license tool showed a menu to allow an artist to tailor the permission she gave. The artist could choose whether to allow commercial uses of her work, whether to allow others to modify her work, and whether to require others to give her attribution when they used her work. After thousands of artists had used the tool, Creative Commons dropped the no-attribution option. No one ever chose to allow his or her work to be used without attribution.⁹⁴ That suggests what is at the core of intellectual property. Authors will cede their exclusive rights to disseminate their work. Authors will allow others to use their work and even modify it. Authors may allow others to make money off their work. But few surrender the right to get credit for what they have created – especially today, where reputation is a key economic factor.⁹⁵

The CC licenses, the GPL and other commons licenses put intellectual property in a new light. Inventors and authors can use their intellectual property to keep their works effectively in the public domain. The parties controlling CC and GNU also guard their own rights of attribution. The CC license, for example, cannot be made revocable. The CC license creation tool drafts an irrevocable license, without the option for the author to authorize use of her work, but retains the right to withdraw permission.⁹⁶ Unlike the no attribution option, a termination right might indeed be attractive to many authors. The reason it is not offered is to protect the reputation of CC licenses. If even some CC licenses were terminable, then other creators and distributors would be less likely to rely on CC licensed works. The GNU license likewise guards against variation, relying on copyright. It provides:

Copyright © 2007 Free Software Foundation, Inc. <<http://fsf.org/>> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.⁹⁷

Just as manufacturers rely on trademarks and patents to craft a market presence for their product, so free licensing organizations control their creation. There is indeed considerable competition among free licenses.⁹⁸ Someone ready to give her work away could use the GPL, a CC license, the Artistic License,⁹⁹ the MIT License,¹⁰⁰ or many others – or draft their own license. In some areas, freely shared works may replace proprietary works. Intellectual property law, so far, is proving key to encourage the sharing of works free of intellectual property.

XII. La Force de FRAP

*Judge: a Law Student who Marks his own Papers.*¹⁰¹

Until 2007, most federal appellate courts forbid or restricted citation to unpublished opinions.¹⁰² After considerable debate and study, the Supreme Court chose to amend the Federal Rules of Appellate Procedure to allow citation of unpublished opinions, although only opinions issued after January 1, 2007.¹⁰³ Many federal judges had opposed the proposed rule. The debate touched on many levels. In terms of jurisprudence, unpublished opinions were said to lack the precedential value of their more polished cousins. The contrary view would be that in a case law system, a decided case is a decided case, which stands for the holding reached. Indeed, allowing courts to decide which decisions were precedential would allow them to act selectively.¹⁰⁴ At an institutional level, permitting citation of unpublished opinions could hold courts to an appropriate standard. At the constitutional level, the restriction raises issues of due process and freedom of speech.¹⁰⁵ The rule even had ramifications at the humdrum workaday level, because citations to unpublished decisions would create more work for courts to see whether the citations were accurate. In addition, the rule might also cause more time to be spent on opinions.

We can also see the question as an intellectual property issue, one unique in American law. When a federal judge publishes an opinion, there is no copyright. Works of the United States government are not copyrighted.¹⁰⁶ The incentive role of copyright is not required for such works, because federal employees are employed to produce them. More important, giving the government control over dissemination of its works raises troubling questions of freedom of speech and due process.

But the rules barring citation of unpublished opinions gave judges a degree of control of their work that goes beyond American copyright law.¹⁰⁷ Moral rights come in many forms, but often include the right to prevent distortion of the work, to receive proper attribution, to protect the integrity of the work, to control disclosure to the public, to withdraw the work from the public, and to receive resale royalties. United States copyright law does not provide for such rights, other than a limited version of them applicable only to works of visual art (itself a narrowly defined category).¹⁰⁸ United States copyright law is usually seen as based more on economic principles than on recognizing moral rights of artists. Fair use, a distinctive feature of United States copyright law, often allows actions which elsewhere would contravene moral rights—such as a parody that distorts a work. The idea behind moral rights is that an artist's personality is entwined with her work, so she should control how it is presented (or not) to the public.

Rules against citing unpublished opinions had the effect of granting such rights to, of all authors, federal judges. If an opinion were merely copyrighted, that might prevent reproduction of the opinion. But one could still cite the opinion, and quote any ideas or facts or nonoriginal material from the opinion—which would add up to a large part of the opinion. Rules against citation gave judges (at least within their sphere) rights over attribution and

control over disclosure to the public. The less common act of withdrawing opinions also gives judges a measure of the right of withdrawal.

The need for such rules was indeed linked to authorial integrity. The best known statement on the rule change comes from Judge Alex Kozinski's comment submitted in opposition:

There is simply no time or opportunity to fine-tune the language of the disposition. . . . When the people making the sausage tell you it's not safe for human consumption, it seems strange indeed to have a committee in Washington tell people to go ahead and eat it anyway.¹⁰⁹

In short, many judges believed that the author is the one who should decide how her judicial work becomes used in public. The right of attribution, in this context, became so important that it overshadowed—for some appellate judges, if not the Supreme Court justices—issues with constitutional dimensions. Notably, when the Supreme Court required courts to allow citation of unpublished opinions, it did so prospectively. This seems to give credence to the judge-as-author rationale, by allowing citation only to opinions issued after the authors had warning that they might be cited.

XIII. Our Patented Technology

Scientific principles cannot be patented. "Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are 'manifestations of . . . nature, free to all men and reserved exclusively to none.'"¹¹⁰

The pages of *Scientific American*, however, contain plenty of references to patents. The articles often refer to patents on applications of scientific discoveries. But patents pop up other places as well. The biographical notes on the authors frequently list the number of patents that they have obtained. Patents also appear in marketing. Advertisements in every type of media tout patents obtained on the product.¹¹¹ An ad for a hybrid car featured an inset citing its "Patent No. US6687593 Regenerative Braking."¹¹² The advertising agency probably did not really think the typical consumer wanted the patent number in order to look up the patent. Citing the patent number lent the ad a flavor of authenticity and authority, the suggestion that the United States Patent Office, after due examination, had attributed special qualities to this invention. The patent marking statute allows an inventor to put her patent number on embodiments of the invention she sells, in order to put rivals on notice.¹¹³ An inventor that does not mark the product is limited in the remedies she can recover from infringement.¹¹⁴ But the requirement is hardly necessary, for patent holders go far beyond it of their own accord. It is a very modest patent holder that simply puts the required notice on the product itself. Advertisements refer conspicuously to "our patented technology," as with the hybrid's regenerative breaking system. Such references to patents can suggest more than the truth-in-advertising law would allow the manufacturer to claim. One might infer the car seller invented regenerative breaking, but on actually looking at the patent cited, it becomes quickly clear that it simply covers one type of regenerative breaking.¹¹⁵

The power of patents may also subtly suggest other things to consumers. But the grant of a patent, strictly speaking, goes to none of the qualities of the product. A consumer is likely to be interested in whether a product is safe, efficient, better than other products on the market, pleasant to look at, and so on. Whether a product is patented depends on none of those qualities. Inventor is entitled to a patent on her wooden combination lock if it is new, useful, and nonobvious. If it has not been done before, has some specific utility, and would not have

been obvious to one working in that area of technology, she gets her patent. The lock may not work better than ones on the market, and need not even work well at all. It need not be more efficient than ones already available. It may be hazardous, or used for fraudulent purposes. But somehow the many invention stories we have heard suggest to us that a patented product must somehow be new and better. No one would buy a book because it is copyrighted (indeed, freedom from copyright protection technology is a definite selling point for music, games, and many other copyrighted works). But patents sell.

Patents resemble merit badges in other areas. Patents receive increasing attention and weight, from advertising to academia, even as the many problems of patents have become better known.¹¹⁶ A story in *Popular Mechanics* about an inventor mentions his “more than 100 patents.”¹¹⁷ *Scientific American* author biographies often give as much space to the patents awarded a scientist than to more traditional credentials, such as publication in peer-reviewed journals. Perhaps it is more effective to list the patents a researcher has than to list the specialized journals she has published in. Patents have entered into tenure disputes, with the number of patents a professor received (and even the applications he had pending) cited as evidence that he should have been tenured.¹¹⁸

A strange tale found a scientific peer reviewer giving deference to patent examiners. A researcher submitted a paper to the *Physical Review Letters*, a leading peer-reviewed journal. The paper, *Optical Conformal Mapping*, described a technique to guide electromagnetic waves around an object, thereby disguising the object. One of the reviewers recommended against publication, partly on the grounds that another team had reportedly “filed a patent” on similar work.¹¹⁹ Peer reviewers should be leading experts in an area of science. For a peer reviewer to rely on a patent examiner’s rumored opinion in assessing the importance of a paper is exactly backwards.

XIV. My Idea

“Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”¹²⁰ A discovery is not patentable until it is embodied in a specific, useful invention.¹²¹ This echoes the rule that copyright does not protect ideas, only creative expression.¹²² The policy is to prevent overly broad patents.¹²³

But a patent granted for an abstract idea would not block further innovation if the patentee had no exclusive rights. Suppose we created a new category of patent. Someone that invented a mathematical method or discovered a phenomenon of nature could seek an idea patent. Idea patents would also be available for ideas that had not yet been applied to particular inventions. As with utility patents, an examiner would allow an idea patent to issue only if the idea was deemed new and non-obvious.

Such a patent would have no teeth. Anyone could freely use the idea disclosed in the patent. But the incentive created by the prospect of exclusive patent rights is only one reason that people seek patents. Indeed, most patents have no monetary value.¹²⁴ The patent office has become a leading authority on priority in many spheres. Patents fulfill a similar function to prizes, diplomas, and academic journal publication—and lend credibility to businesses claiming to have scientific and technological expertise. The imprimatur of the USPTO has become a weighty cultural credential.

One could save the expense of examination by simply having a registry of ideas. But it is the idea of examination (if sometimes overvalued) that lends the patent its weight of authority. Substantive standards and examination would also increase the disclosure role of the registry. To get an idea patent, the applicant would have to provide similar disclosure as utility patents.

With words and drawings, her specification would have to enable others to understand her idea and possible applications. Her claims would have to distinguish the idea from prior public knowledge. For efficiency, the same examiners for utility patents could be used for idea patents, to take advantage of their expertise in specialized areas. In fact, if a utility application was held unpatentable because it fell outside patentable subject matter or was not yet applied to a specific utility, the applicant could have the option to convert to an idea patent application. The number of examiners would have to be increased, but that could be paid for by fees charged for examination.

If Congress enacted this unlikely change in the patent office, someone would quickly apply—not just to have a patent on his or her idea, but also to be the first holder of an idea patent. They would likely be followed by other applicants, willing to pay for a patent without rights to exclude, but with bragging rights. Over time, whether the system attracted more applicants would depend on its reputation for identifying new and nonobvious ideas. The number of applicants—and quality of the applications—in light of the fees charged, might provide some interesting data on the patent system—and the attribution rights it distributes.

XV. Frank Zappa and the Mothers of Invention

Copyright infringement requires copying.¹²⁵ Patent law is different. Suppose Inventor patents her solar-powered night-vision goggles. Anyone that makes, uses, or sells goggles that fit within her patent claims infringes the patent. It would be no defense that the defendant independently developed the same technology, with no knowledge of Inventor's goggles. Infringement by noncopiers is quite common.¹²⁶ One reason lies in the nature of technological development. Necessity is indeed the mother of invention. Market conditions and technology constraints often cause many parties to work independently on the same technological problem. More than one inventor may come up with a similar invention to solve the problem. Where more than one inventor converges on an invention, under current law, the first inventor takes the rights.¹²⁷ A number of commentators, looking to the incentive role of patents, have argued that an independent creation defense would make economic sense.¹²⁸ Even without the right to recover from those that did not learn from the inventor's technology, there would be ample incentive to innovate.

Looking to the disclosure role of patents suggests more reasons for an independent creation defense. Patent law offers a set of exclusive rights in exchange for disclosing the invention and how to make and use it. But that disclosure need go only so far as the patent office. Many patent owners publicize their rights. Other inventors have found reason to limit further disclosure. The most abusive practice involved submarine patenting, where an applicant would file an application, but use procedural devices like continuations and divisions to delay issuance of the patent. As technology developed in the area, the applicant would amend the claims to cover products on the market.¹²⁹ The application of "prosecution laches" has proved a remedy against such truly unreasonable delay.¹³⁰

For some inventors, patent law still gives little incentive to warn potential infringers. While an application is pending—which can be years¹³¹—the applicant has no enforcement rights and may be better off allowing others to develop potentially infringing technology. The application may be kept confidential for at least eighteen months. After the patent issues, the patentee may have little incentive to disseminate the information, because that might simply be to warn potential infringers. The patent statute does limit damages if the patentee sells products without patent marking.¹³² But that small requirement gives little notice to makers of other products, especially if they are not competing in the same market. Many patents require no

marking—because the patentee does not market a product, or the invention covers only a process that cannot be marked on a product.¹³³ The burden is left on potential infringers to search for patents—an impossible task in some areas, like software, with thousands of vaguely drafted patents.

If an inventor could not recover from those who develop the invention without knowing about Inventor's work, Inventor would have an incentive to disseminate the technology. Beyond simply filing for a patent, the inventor would have reason to make sure that knowledge of the invention reached those who might otherwise come up with it themselves. Patents disclose much technology, but searching for relevant patents can be difficult. This would give inventors incentive to push the information in the other direction, publicizing patents to those who value the information. An instructive comparison is with the pharmaceutical industry, where there is far less uncertainty than other industries. Patent owners must list their patents in the *Orange Book*, ensuring that potential generic competitors are aware of them¹³⁴ (as opposed to some patentees in some industries, who could wait in the weeds until their patents cover valuable products).

An independent creation defense could also ameliorate some of the systemic problems with patents. Two pervasive problems are the difficulty of locating prior art (in order to see if a patent truly covers a new invention) and the hazards of claim construction (determining whether the words of a patent claim should cover a particular product or process). If independent developers were not liable for infringement, those issues would arise in fewer cases.

Having said that, an independent creation defense could create one problematic incentive. In order to shield researchers from knowledge of patented technology in the field, companies might encourage them to avoid generally following technological developments.¹³⁵ That happens already in some copyright industries, such as where movie studios often have a policy of not reading unsolicited scripts, because they cannot be liable for independently creating a similar movie.¹³⁶ So an independent creation defense could encourage patentees to better disseminate information about their patented technology, but encourage others in the field to shield themselves from exactly that information.

XVI. Air Rights

Wilbur and Orville Wright invented the flying machine. The "1903 Wright Flyer, the world's first successful airplane," occupies pride of place in the Smithsonian Air and Space Museum, in the exhibit, "The Wright Brothers & The Invention of the Aerial Age."¹³⁷ The "historic craft that ushered in the age of flight," appears, along with many other Wright brothers items. The Wright brothers' patents, and litigation to preserve their priority, often appear in discussions of American patent law and technological development. The Wright brothers' patents are used as exemplars of "pioneer" patents, which open up a new area of technology.¹³⁸ The American story of aircraft development runs from the Wright brothers to Boeing and the Space Shuttle.¹³⁹

The German Museum in Munich tells a different story. Otto Lilienthal invented the flying machine. The museum's prized exhibition hall for aerospace and astronautics, features "50 original aircraft exhibits ranging from Lilienthal to Airbus." A different view of what constitutes an aircraft (a heavier than air glider or a powered craft) can support a different story of where it was first developed.

A genial local geographical attribution competition involves the Wright brothers themselves. The brothers worked on their planes in Dayton, Ohio, and flew them in Kittyhawk, North Carolina. The license plates of Ohio read "Birthplace of Aviation," while North

Carolina's proclaim, "First In Flight."¹⁴⁰ Some attribute cultural influences to productivity in innovation:

Like the fella says, in Italy for 30 years under the Borgias they had warfare, terror, murder, and bloodshed, but they produced Michelangelo, Leonardo da Vinci, and the Renaissance. In Switzerland they had brotherly love - they had 500 years of democracy and peace, and what did that produce? The cuckoo clock.¹⁴¹

When the Supreme Court listed patented inventions that "push back the frontiers of chemistry, physics, and the like," it listed patents that were all Made in America – and patented in the USPTO.¹⁴² The Marconi Wireless Telegraph Company of America may have wondered if such national feelings crept into patent jurisprudence. In 1905, the United States Patent Office issued patents on radio technology to Italian inventor Guglielmo Marconi. In 1909, Marconi won the Nobel Prize in Physics in recognition of his "contributions to the development of wireless telegraphy." In 1943, after decades of dispute, the Supreme Court of the United States held the patents invalid, as obvious in light of work by others.¹⁴³ Justice Frankfurter, dissenting, questioned the ability of his fellow justices to assess such "vast transforming forces of technology" from several decades removed.¹⁴⁴ It may not have helped the Marconi cause that Italy was by then at war with the United States.

There was considerable conflict between the French and American governments over proper attribution for the discovery that HIV caused AIDS. French and American research groups had cooperated and shared material, and there was suspicion that the Americans had somehow misappropriated the virus. The governments eventually reached a compromise, under which the leaders of the French and American teams were named as joint inventors on the patent on the test for AIDS. In the years since, it has become generally accepted that there was no misconduct and that both teams contributed. The French isolated the virus and the Americans proved its role in causing AIDS. In 2008, however, the Nobel Prize in Physiology or Medicine went to two scientists from the French team, in recognition of their work on the discovery of HIV, along with a cancer researcher. The resolution of the patent dispute evidently did not carry over to attribution for the scientific achievement.

Other cultural tales depend on differing viewpoints of discovery. In a 2010 book on breakthroughs in technology, comparing pioneering in physics to pioneering in America, a Nobel laureate physicist wrote that Columbus's "discovery of the New World roughly doubled the land area available to humans."¹⁴⁵ Stories become so ingrained that we forget about the humans left out of the story.¹⁴⁶

XVII. Cultural Property

During the 2009 United Nations Climate Change Conference, indigenous activists held a march to the United States embassy in Copenhagen. The group intended to "send a message to the US government that no longer can their energy policy and their unsustainable development practices threaten the future of indigenous peoples."¹⁴⁷ They also made an appeal, with legalistic overtones, that the "United States respect the rights of indigenous peoples and that they endorse the Declaration on the Rights of Indigenous Peoples."¹⁴⁸ The Declaration, among other things, provides that "Indigenous Peoples have the right to own and control their intellectual and cultural property including indigenous sciences, technologies, genetic, seeds, medicines, flora and fauna, languages, literature, designs and visual and performing arts."¹⁴⁹ Intellectual property here does not serve the common role of providing economic incentives.

Rather, cultural property can provide key elements to support other rights, such as the rights to education, to practice cultural traditions and to self-determination.¹⁵⁰

The United States has been one of a minority of nations that have opposed the United Nations Declaration on the Rights of Indigenous Peoples. One reason is that the declaration takes a somewhat different approach to certain intellectual property issues than does the United States. Its approach is seen to conflict with the individualistic nature of intellectual property law. The United States Constitution contemplates granting rights to authors and inventors. Group rights, by contrast, have been deemed alien to the basic framework of such laws. If groups were granted rights in folklore or traditional knowledge or other cultural elements, the argument runs, there could be intractable problems, such as determining the appropriate group, arbitrating differences in opinion about exercising the rights, and providing a means for other to deal with the group to seek permission to use the cultural elements.¹⁵¹ Intellectual property rights, although granted to individuals, are often held by groups. The shareholders of IBM are the ultimate owners of many thousands of patents and copyrights. The corporate structure allows IBM to manage those rights interest effectively. Indigenous group could likewise use their existing governing structures to handle rights.

Effective means to protect the ability of indigenous people to protect traditional knowledge might require no more than leveling the playing field.¹⁵² Under United States law, an invention published anywhere in the world is no longer patentable by others.¹⁵³ By contrast, an invention that has been used in the United States is not patentable by others.¹⁵⁴ So where traditional knowledge (such as medicines) has been passed by oral tradition outside the United States, it remains patentable by others in the United States.¹⁵⁵ Similarly, confidential information (such as some traditional knowledge, folklore, or religious rites) receives far less protection than commercial confidential information, which gets coverage in many spheres, from trade secret law to the Computer Fraud and Abuse Act.¹⁵⁶ Copyright likewise draws some uneven distinctions. If a filmmaker recorded the performance of a sacred dance or a folk talk, the filmmaker would have copyright in the work for her life effectively forever, while the indigenous group would have no say about dissemination of the work, because their contribution would be deemed not original.¹⁵⁷ Evening out some of those disparities would support the rights of self-determination for indigenous people – and in a broader sense, support the justifications to have intellectual property.

Protecting traditional knowledge and other information of indigenous people might be seen as diminishing the public domain. The public domain can be misleading, if the effect is to open the cultural heritage of one group for the use other groups.¹⁵⁸ Moreover, respect for cultural identity and self-determination need not entail the strong property rights often associated with intellectual property. Often, it would be sufficient to provide a means for indigenous people to be consulted before others made use of their information or symbols, to participate in the commercialization of their traditional knowledge, and to prevent deceptive uses of cultural property.¹⁵⁹

XVIII. Unreasonable Delay

In 1794, President Washington signed the *Treaty of Canandaigua*¹⁶⁰ with the Oneida Indian Nation, recognizing its rights to some three hundred thousand acres of aboriginal land,¹⁶¹ and promising that “[t]he United States acknowledges the lands reserved to the Oneida . . . and the United States will never claim the same, nor disturb them.”¹⁶² By 1920, the Oneida Indian Nation was dispossessed, in favor of “pioneers,” of all but thirty-two acres of its homeland.¹⁶³ This was achieved through illegal treaties imposed by New York State, purported “sales” of tribal land by individuals without authority, and leases that were unilaterally treated as sales,

all in violation of the treaty and federal law.¹⁶⁴ Many Oneida acquiesced to pressure to move West under New York State's allotment policy and the United States' removal policy. There was then no legal avenue to reclaim their land.

After legal and political changes (including a federal policy of self-determination for Indian people and changes in federal-question jurisdiction),¹⁶⁵ the Supreme Court made clear in 1974 for the first time that the Oneida Indian Nation had a right to maintain a claim of possession in federal court.¹⁶⁶ In 1985, the Court affirmed the Tribe's claim of illegal dispossession and sent the case back to the district court to determine damages.¹⁶⁷ The case remains in negotiation.

Meanwhile, the Oneidas, on the open market, bought back some of the lands reserved to them under the *Treaty of Canandaigua*.¹⁶⁸ When the City of Sherrill attempted to evict the Oneidas from their reserved lands for failure to pay taxes, the Nation sought relief in federal court.¹⁶⁹ The district court and the Second Circuit found in favor of the Oneida Indian Nation on the grounds that the lands at issue were within the historic boundaries of the Tribe's reservation and therefore not taxable by the City of Sherrill.¹⁷⁰ The case went to the Supreme Court, where the U.S. Solicitor General submitted an amicus curiae brief in support of the Oneidas' right "to assert sovereign dominion over the parcels" at issue.¹⁷¹ The Supreme Court reversed.¹⁷² The Court did not deny the Oneida's claim on the merits. Rather, it held that Oneida was barred under the doctrine of laches, holding that principles of "equity . . . preclude the Tribe from rekindling embers of sovereignty that long ago grew cold."¹⁷³

The parties had not raised or briefed the issue of laches. The Court apparently assumed that there was no need to give the Oneida an opportunity to address whether they had made an unreasonable delay that had caused prejudice to New York State, the two requirements of laches. The Court supplied facts, stating that "it was not until lately that the Oneidas sought to regain ancient sovereignty over land converted from wilderness to become part of cities like Sherrill."¹⁷⁴ Given an opportunity to make a record, the Oneida might have given evidence of their long struggle to retain their land, and the dire economic and political conditions they faced. Nor did the Court consider the fact that there was no legal basis for the Oneida to proceed until 1974, when the Supreme Court finally held that federal courts had jurisdiction to hear these claims. Prior to that time, all sorts of legal and political barriers existed to the assertion of land claims.

On the second requirement of laches, a record may have shown prejudice not to New York State or local governments—who benefited from the illegal taking of Indian lands—but the Oneidas, who lost most of their historical homelands. The only prejudice the Court even indirectly discussed was harm that it conjectured for the future "disruptive practical consequences" that would be suffered by the City of Sherrill, the County of Oneida, and the non-Indian landowners.¹⁷⁵ Had a record been made, any possibility of administrative "disruption" might have been outweighed by the benefits from Oneida's economic activity, as the largest local employer.¹⁷⁶ The Court also theorized:

If [Oneida] may unilaterally reassert sovereign control and remove these parcels from the local tax rolls, little would prevent the Tribe from initiating a new generation of litigation to free the parcels from local zoning or other regulatory controls that protect all landowners in the area.¹⁷⁷

The only showing of prejudice was speculation by the Court itself that the Oneida would claim jurisdiction over non-Indians' "neighboring the tribal patches" and claim exemption from zoning or regulatory laws that "protect all landowners."¹⁷⁸

Meanwhile, another suit was making its way through the United States Patent and Trademark Office and the federal courts. In 1992, a petition was filed with the USPTO by a member of the Oneida, along with members of the Cheyenne, Hodulgee Muscogee, Ysleta del Sur Pueblo, Diné, Standing Rock Sioux, Oglala Lakota, and Cochiti Pueblo. The petition sought cancellation of the trademark “The Washington Redskins,” on the grounds that the mark disparaged Native Americans. After a lengthy adversary proceeding, the USPTO granted the petition. The federal courts, in a series of decisions lasting until 2009, reversed the ruling. The courts did not rule that the mark was not disparaging. They held that the petitioners were barred by laches.

The issue of laches had seemed promising for the petitioners. The trademark statute provides that petitions for cancellation must be brought within five years for only certain claims, such as claims brought on the grounds that a mark is merely descriptive. The statute provides that a petition may be brought “at any time” on other grounds, such as claims that a mark is deceptive, immoral, or disparaging to a group of people. The Third Circuit, in an opinion by future Supreme Court Justice Alito, had held that because of this distinction, laches would not bar a claim which the statute provided could be brought “at any time.”¹⁷⁹ The D.C. Circuit, however, rejected the Third Circuit’s conclusion. Otherwise, the court reasoned, “this would make section 1069, which explicitly permits consideration of laches and other equitable doctrines, meaningless as to cancellation petitions.”¹⁸⁰ But section 1069 is not so broad, simply stating that “equitable principles of laches, estoppel, and acquiescence, *where applicable* may be considered and applied.”¹⁸¹ If the statute provides that a petition can be brought “at any time,” that would make laches inapplicable. Moreover, other equitable principles would remain, so section 1069 would retain ample force. Finally, a distinction between petitions that must be brought within five years and those that can be brought at any time is in accord with the statutory scheme for incontestability. When a mark has been registered for five years, its validity cannot be challenged on certain grounds (the same as those in which a cancellation may be brought within five years), but can still be challenged on other grounds (the same as the “at any time” cancellation grounds).¹⁸²

Applying laches, the courts held that there was prejudice from the seven year, nine month delay between registration of the mark and the filing of the petition.¹⁸³ The court looked to the death of former Redskins president Edward Bennett Williams during the delay period, and the continued investment in the mark during that time.¹⁸⁴ Williams had met with Native American leaders close to the time of registration to discuss their views.¹⁸⁵ So the court held that by negotiating rather than filing, the petitioners induced the mark owners to not preserve relevant evidence and assume that no cancellation proceeding would be filed. In other words, Edward Bennett Williams, founder of one of the most influential American law firms and lawyer to such figures as Frank Sinatra and Michael Milken, would not take steps to protect legal rights to the name of his business.

The case ended. The dispute will continue. As the court held, laches applies only to delay after a potential petitioner reaches the age of majority. So another cancellation petition has been brought before the USPTO, filed by petitioners who were minors during the period of delay as soon as they reached majority. Eventually the courts will have to decide on the merits whether the mark “Redskins” is disparaging to Native Americans. The result of applying laches was more delay.

XIX. Words

A human is an animal. So held the Court of Appeals for the Federal Circuit.¹⁸⁶

Martek Bioscience held a patent on “methods for increasing the concentration of omega-3 HUFA in animals by feeding them microorganisms of the order Thraustochytriales.”¹⁸⁷ Martek had patented a process of increasing the healthy omega-3 fats in animals by feeding them enriched algae. Nutrinova used similar method on nutritional supplements for people. When sued for infringement, Nutrinova argued that its supplements fell outside the patent claim because Martek’s patents covered animals, and humans were not animals.

The court relied primarily on the first line of the definition in the patent: “The term ‘animal’ means any organism belonging to the kingdom Animalia.”¹⁸⁸ Giving deference to that language, the court gave little weight to the many references to “animal” in the patent that did not seem to contemplate humans. It was unmoved by the rest of the definition: “Preferred animals from which to produce a food product include any economic food animal. More preferred animals include animals from which eggs, milk products, poultry meat, seafood, beef, pork or lamb is derived.”¹⁸⁹ Elsewhere the patent differentiated between “foods for human intake and for animal feed.”¹⁹⁰ Because the patent itself defined “human,” the court also declined to look to general culture or scientific literature to see whether “animal” includes “human.”¹⁹¹

Claim construction questions like that are the bread and butter of the Federal Circuit’s patent cases. The questions often sound philosophical. The court has held that “and” may mean the same as “or.”¹⁹² “A” can mean “one or more.”¹⁹³ A case can turn on the meaning of the words “only if” in a patent claim.¹⁹⁴ The court often addresses such queries as whether a distance specifies a “location,”¹⁹⁵ how close something must be to be “local,”¹⁹⁶ how far to be “remote,”¹⁹⁷ <http://www.patentlyo.com/patent/law/PatentLawPic299.jpg> the meaning of “mechanism,”¹⁹⁸ whether 1/8 is “about” 1/5,¹⁹⁹ even what the meaning of “means” is.²⁰⁰ In a typical case, the court held that “flexible” means something more than crushable.²⁰¹ Patent law questions turn on what patents cover, and that almost always requires interpreting the words of the patent claims.

A technical background is required to practice before the patent office, or to work as an examiner in the patent office. But perhaps some literary, linguistic, or philosophical training should be required. Patents cover technology, but patent rights ultimately depend only on the meaning of the words in the patent claims. In patent law jargon, patent claims “read” on products or processes. Each patent application reflects a story, usually reflected in the section named “Background of the Invention.” The invention must fit into a legal storyline—a conception of the invention, a reduction to practice, and a filing of the application. Fitting their dramatic importance, those times are known as “critical dates.” The claims in the patent application depend on words, although they may be supplemented with drawings, models, and even samples of biological materials. The meaning of those claims may be broad or narrow. A patent applicant is not necessarily in favor of a broad or narrow claim meaning. A broad claim in a patent makes the patent more powerful, because it covers more potential infringers. But a broad claim in the application also makes the patent more difficult to obtain (and also easier to invalidate in litigation). A broad claim, exactly because it covers more products or processes, is more likely to be invalid because it is not novel (it covers existing technology) or is not enabled (goes beyond the description of the invention disclosed in the application). The linguistic stakes have other battlegrounds. A patent claim must be distinct. It is invalid if held “indefinite.”

All law involves words, but every patent depends on the meaning of the words in its particular claims. Because each applicant may draft her own claims, and even define the meanings of the words, interpretation is needed in every single case. In most areas, documents and terminology are much more standardized. Patent law, albeit centered on technology, might be the most interpretation-intensive area of law. High tech law has not moved far from the

eighteenth century, where there was no fine distinction between lawyers and writers. Samuel Johnson, the author of the best-known early dictionary and the leading eighteenth century literary figure, was also a legal thinker.²⁰²

XX. Emulation

Do away with software patents, say many.²⁰³ Software development, in contrast to an area like pharmaceuticals, requires relatively little investment in resources.²⁰⁴ Software patents are too broad, because an algorithm developed in one area will very likely have application in many other industries.²⁰⁵ Software patents are said to be too vague and abstract to interpret fairly.

Putting those reasons together, it becomes impossible for people to receive the notice that they should have of possible infringement. Someone using a chemical or mechanical device can search the relevant patents to know if she is likely infringing. But anyone developing software may be potentially infringing thousands of patents that were developed in many different areas. Finally, and most important, software patents do not offer the same incentive for innovation as in other areas. Software patents can indeed sometimes be valuable for their owners. But that incentive is likely outweighed, for innovators, by bearing the cost (including both risk of infringement and the cost of uncertainty itself) that their innovation would infringe. In short, even most information technology companies might agree to do away with software patents.²⁰⁶

Given the inability of Congress to accomplish even minor patent reform, legislation with such broad effects (and with many likely opponents) will not come anytime soon. But suppose that Congress were inclined to eliminate software patents (or the Supreme Court decided to interpret the patent statute to bar them – or even the Constitution, on the theory that software is not an invention). It might not be feasible to eliminate software patents.

Suppose Congress passes an uncommonly concise statute: “No more software patents.” Inventor concocts a snazzy piece of software for controlling a rubber-curing manufacturing process. She cannot patent the software, it seems. So she simply hardcodes the rubber-curing controlling process in a special purpose chip. Software is simply 1’s and 0’s, at the end of the day, and anything that can be expressed in that binary form can also be expressed as gates on a chip (representing those 1’s and 0’s). Put another way, a software program can always be emulated in hardware, and vice versa (if we make the sometimes unrealistic assumption of unlimited time, memory, and components). Whether to implement something in hardware or software is often simply an engineering choice influenced by cost, constraints, compatibility with other devices, and user preferences. So Inventor patents her rubber-manufacturing-control device. If Copycat then copies the chip and implements it in a software program (bringing things full circle), is that infringement? If so, then Inventor has a software patent. If not, then many electronics patents would have little bite to them because the invention could be copied and emulated in software. With electronics increasingly appearing in most technology, this would put a considerable damper on patent protection generally.

So an outright bar on software patents is likely unworkable (not to mention politically impossible, and likely unwise). We will continue to deal with the problems of software patents piecemeal, with the tools of existing patent law. All of this emphasizes the problems with software patents. Because software is so mutable and adaptable, it provides great tools for technological development. But that also means that trying to capture a “software” invention in the words of a patent claim – like trying to interpret the words of a patent claim to see if they encompass another’s technology – will remain a refractory problem.

XXI. Patents as Literature

There is no more Sisyphean task in law than patent claim construction. Courts commonly try to interpret words in documents. But in most areas, there is some standardization, or at least precedent. Contracts use forms. Real estate documents use terms of art. Where a statute has an unclear meaning—such as the meaning of “accessing” a computer without “authority” under the Computer Fraud and Abuse Act—there are likely to be many cases interpreting the words at issue.

Patent claims are different. Every patent claim is new, because you cannot patent something that has already been patented. In looking to the meaning of the words in the claims, the court looks first to that particular patent: whether the word is defined in the patent, how it is used in the written description, how that particular inventor used that particular word.²⁰⁷ Only if the patent does not provide sufficient guidance is the court to look to extrinsic evidence, such as dictionaries.²⁰⁸ When the court has interpreted the meaning of a word in a patent claim, that interpretation applies for only that patent. When construing the next patent, the court starts anew, just like Sisyphus, even if the same word is used in the next patent (and due to the diversity of patents and patent litigation, usually the words at issue are quite different). Indeed, one source that courts look to surprisingly infrequently is previous patent cases. Courts cite to the various vague and conflicting maxims of interpretation, but rarely cite how courts have actually interpreted similar words in the area.²⁰⁹

This raises an interesting question for patent theory and practice. Courts may not look back at earlier patents very often. But the people drafting the patents do. Lawyers never like to start a document from scratch. A wise lawyer drafting any document (a sales contract, a will, a promissory note, a patent application) will seek an example to work from. Patent practitioners likewise use other’s work—and learn from practitioners in their field. A potentially fruitful research project would be to study patents with a literary approach.

Software patents provide a good example. It is a commonplace that software patents are often abstract and vague.²¹⁰ Courts in patent cases have become accustomed to giving substance to abstract terms. A patent on a computer-implemented invention might not even mention that basic aspect: “although the specification did not use the ‘magic word ‘computer,’” a general or special purpose computer was clearly the structure intended.”²¹¹

Software patent claims, however, need not be vague and abstract. A software invention, if implemented, is necessarily sharply defined by the process of writing it into code. So the patent application could piggyback on the code, using the code to clearly define the invention. Applicants do not do this, for several reasons. The courts have not required disclosure of code to meet the requirement that the application “enable” others to make and use the invention.²¹² Narrow, specific claims tied to the particular implementation would yield similarly narrow, specific protection—whereas applicants prefer broad protection.

There are many ways applicants could move from the narrow code of the invention to the broad language of patent claims. Early in software patent practice, creative lawyer wordsmiths must have developed terminology (or borrowed it from software phraseology or other areas of patent practice, which would be quite illuminating) to describe the functions of software in sufficiently broad terms. It seems likely that careful reading of early software patents could identify usages that have developed in software patent prosecution, which would throw considerable light on the meaning of those vague and abstract terms.²¹³ Scholars in literature and linguistics track down words through historical documents to their source. Law could benefit from those methods—and from investing in the resources to apply them.

XXII. Ships that Pass in the Night

Not long ago, there were two patent law conferences in Boston. One looked at the state of software patent law.²¹⁴ Viewpoints ranged from IBM, holder of thousands of software patents, to the Software Freedom Law Center, which advocates that software is not patentable.²¹⁵ Panels explored the dynamics of software patents in areas from financial services to ecommerce to scientific instruments. There was great variation on policy recommendations on every topic but one. All speakers agreed that there should be more disclosure in software patents.²¹⁶

The second conference was geared to patent practitioners.²¹⁷ Speakers ranged from patent prosecutors (who draft applications and represent inventors before the USPTO), to investors, to patent litigators. In many different forms, they provided advice that has become widespread among patent lawyers:²¹⁸ there should be less disclosure in software patents. Do not define terms used in claims. Do not identify the category of invention in claim preambles, nor identify “important” features of the invention—nor even use the word “invention” in the written description. Do not explain the flaws of competing technology, nor the advantages of the claimed invention. For software, do not submit a copy of the program code. Do not keep up on technology in the field, nor do a prior art search before filing a patent application. As to “Background of the Invention”: consider it an “admission against interest.”²¹⁹

Such “intentional obscurity” in claim drafting flows from incentives created by cases that read claims narrowly to limit the claim to specific disclosures in the application.²²⁰ In light of these cases, an applicant is better off making vague, broad disclosures that can support broad claims to the invention. If the written description refers to “the invention,” the claims may be interpreted to apply only to the particular device referred to in that section of the application.²²¹ If the “Background of the Invention” section points out drawbacks to some technology, the patent claims may be read not to cover implementations of the invention that use that technology.²²² If the invention has broad use, but the application discusses specific applications, the claims may be read to apply only to such applications.²²³

There is, however, one line of cases that could create a better incentive. In these cases, the courts have held that patent claims were not “enabled” where the disclosure in the application did not support the full range of the patent claim.²²⁴ In short, these cases encourage applications to disclose as wide a range of applications as possible in order to “enable” broad patent claims. Such cases have emphasized that “the full scope of the claimed invention must be enabled.”²²⁵ Patent law should encourage disclosure, not punish it.

XXIII. Lightning in a Bottle

No one knows how to perfect a security interest in intellectual property, but anyone can do it.

Scrooge finances Marley Software, getting Marley’s patents, trademarks, and copyrights as collateral. Any secured creditor should perfect its security interest so it is protected against other claimants, like a bankruptcy trustee. If Scrooge does not perfect, he loses the collateral if Marley goes bankrupt. Creditors normally perfect by filing a UCC-1 financing statement in the relevant state office. For some types of collateral, federal law preempts: security interests in ships, aircraft, and railroad equipment require filing in federal agencies, such as the Federal Aviation Authority. The patent, trademark and copyright statutes all allow filing of documents relevant to those rights. But none of the three statutes are at all clear as to whether federal filing for security interests is required and displaces state law.

Courts have reached a variety of conclusions: some require federal filing, some require state filing. Some courts hold that intellectual property should simply piggyback on the state law UCC filing system for personal property.²²⁶ Others hold that the specialized systems for

intellectual property should take priority.²²⁷ One court even held that federal filing is required for registered copyrights and state filing for unregistered copyrights.²²⁸ Congress has shown little interest in clarifying the boundary between state commercial law and federal intellectual property law.

Nevertheless, plenty of money is invested with intellectual property as collateral. Lawyers find ways to navigate around uncertainty. Not knowing where to file, a creditor can simply file in both the state and federal office. One of those filings perfects the security interest, although we do not know which one. This is similar the logic puzzle involving the island of liars and truth-tellers. A visitor, at a fork in the road, who simply asks which road leads to the to the capital city, cannot depend on the answer, not knowing if she is asking a liar or a truth-teller. But she can ask, "If I ask you the direction to the capital, which way would you tell me to go?" A truth-teller would tell her the true direction. A liar would give the same answer, because the liar would lie about which answer that the liar would have given.

Dire circumstances prompt creative lawyering. The creditor in *In re Coldwave Systems*²²⁹ made both federal and state filings, but not in timely fashion. The creditor nevertheless argued that it had perfected its security interest the old-fashioned way. In lieu of filing, a creditor may perfect by taking possession of tangible collateral.²³⁰ Like filing, possession puts other potential creditors on notice. The creditor argued that it was perfected because it was in possession of the patent certificate, the impressive document issued by the USPTO, with a red ribbon. But the patent certificate does not embody the patent rights. The creditor's collateral was the patentee's set of intangible rights, and one cannot put intangible rights in a creditor's vault. If only the puzzles of intellectual property could be made so concrete.

XXIV. Disclosure

Peter Chamberlen invented forceps to aid in childbirth. That invention saved hundreds of lives during the seventeenth century. It could have saved many thousands. Over three generations, the Chamberlen family kept the use of forceps as a trade secret, concealing the instrument and even blindfolding their patients at times.²³¹

In patent policy discussions, the disclosure aspect of patent law receives far less attention than patent's incentive role. The main focus of patent policy is balancing the incentives to innovators against the costs to competition of granting exclusive rights.²³² But a comparison to copyright shows how important the disclosure aspect of patent law is. Incentive plays a much greater role as a justification for copyright. An artist considering creating a book or movie is likely to choose with copyright in mind. In a world with copyright, she can create the work and rely on copyright to prevent others from free riding. In a world without copyright, she might not spend a year creating the book or movie. Copyright protects her incentive to create. But copyright does not require much disclosure. It is not necessary to publish the work to have copyright, or to register the work. One has copyright in a secret diary. Even if she registers, disclosure is limited. The disclosure regulations provide many exceptions. If she deposits copies, they are simply put in the Library of Congress, or more often, disposed of quietly after a period of time, under the Copyright Office's retention policy. Unlike patents, copyrighted works cannot be freely searched online.

More important, even when the author publishes the work, she does not open the door for competitors to wait until the copyright expires. Patents expire. Some twenty years after the inventor applies, her patent will expire and competitors will be able to use the required disclosure in the patent to make, use, and sell the invention.²³³ Copyrights do not expire—for practical purposes. For works created today, copyright lasts the authors life plus 70 years.²³⁴ For works created before 1977, copyright last 95 years.²³⁵ Works created in the 1920s are still

under copyright. Inventions from the 1920s are no longer patented (nor are inventions from the 1930s, 1940s, 1950s, 1960s, 1970s – with a few quirky exceptions).

Disclosure also matters more for patents because secrecy is more likely to be an option. For the author creating a book or movie, the way to exploit the work is to go to the public. Many inventors may have their cake and eat it. If the invention is a bottle manufacturing process, an algorithm controlling a rubber-curing process, or superfine tweezers used in harvesting silk, the inventor may be able to commercialize the invention without disclosing it. The purchasers of the bottles, the rubber, and the silk cannot discern the invention used back at the plant. To patent the invention, however, the inventor must disclose it. So many inventors choose between protecting the invention as a trade secret or with a patent.²³⁶ If a Chamberlen today invented a nanoforceps for manipulating stem cells, she might prefer to get a patent than to try to keep the invention secret. Trade secrecy would require that she use the invention only under conditions of secrecy and strictly limit knowledge about it.²³⁷ She would lose rights if somehow the invention became publicly known – or if someone else invented a similar device. A patent would allow her to publicize the invention and commercialize it broadly, through licensing. She would have to disclose the invention and would lose exclusive rights in twenty years. But disclosure would also allow her get credit for the work (the attribution people find so important). The present value of losing rights in twenty years in the future is small. The odds of keeping it a secret for twenty years are not great; patent protection might be likely to last longer. Disclosure of the technology in return for a stronger set of rights with a more certain term, along with the chance to get credit for the invention, looks like a good deal.

In fact, for many patents, disclosure may actually be the biggest advantage from obtaining a patent. The vast majority of patents have no direct commercial value, viewed solely in terms of securing market power. Some simply represent unlucky bets, where applicants filed in the hopes that the invention will be commercially successful. But patents have many other types of value, beyond securing a market. Patents with more diffuse commercial value are displayed to investors (such as showing venture capitalists that the start-up indeed has developed something), to customers (“our patented technology”), to competitors (as part of patent portfolios, which industry rivals use like missile silos). For many firms, far from being secrets to protect, technology is often more like antlers to flaunt.²³⁸ Inventors also seek patents to impress not just commercial parties, but as a means to tell their story to scientific peers, and even historians. Disclosure can be the price the patentee pays, or the reward the patentee gets, a dual role that deserves more attention in patent theory.

XXV. Need to Know

Trade secret law encourages secrecy – but also disclosure. In order to claim trade secret protection in information, one must take reasonable security measures: keeping track of copies of the information, limiting access to places where the information is used, limiting the disclosure of the information to those who require it.²³⁹ Trade secret law does not encourage publicizing the information. Once public, the information is no longer a trade secret.²⁴⁰

But it does encourage limited disclosure. A business with valuable information, in addition to the practical security measures it takes, receives legal protection for its trade secrets. If employees or joint venture partners disclose the information, they will be liable. If a competitor bribes an employee or hacks into the computer network, the competitor will be liable. If the Chamberlen family business has a valuable confidential manufacturing technique, they need not limit the factory staff to trusted family members. They can use trade secret law as one device to share the information. So trade secret law allows expansion of the circle of those in the know, by protecting limited disclosure. Like all forms of legal protection, trade secret is not

perfect. But it does make it more likely that certain types of information will be shared. So, as with patent law, disclosure plays a role in the underlying policy, beyond the basic policy of providing an incentive to innovate.

It may be that thinking of disclosure helps us understand some of the distinctions that courts have made. Multiple choice tests are trade secrets.²⁴¹ Computer passwords are not.²⁴² When addressing borderline issues of trade secret protection, courts invoke the requirement of “independent economic value.” One way of giving content to that phrase would be to look at how the information is used. Multiple choice tests have no value without disclosure: the people preparing, taking and grading need access to the test. Passwords, by contrast, need not be shared within the firm. The best practice is for a password to be known only to the individual that uses it. Where passwords are used correctly, there is little need for legal protection.

XXVI. Double Reverse Engineering

Faively developed brake friction cylinder tread break units, “that loud squeaking, sparking braking system that so reliably stops the New York City Transit subway system.”²⁴³ Faively kept the trade secret in the family, licensing it to a sister company, Wabtec, for manufacture of the parts, allowing Wabtec limited access to Faively’s know-how and drawings.

The two companies moved to different corporate families, and the joint venture ceased. Wabtec could no longer use Faiveley’s trade secrets. Independent creation of the same information is permitted under trade secret law, so Wabtec decided to reverse engineer the parts, using some specialists in reverse engineering. Despite considerable efforts, attempts to duplicate the parts yielded no usable drawings. Wabtec tried again, but this time included in the reverse engineering team a Wabtec employee who had previously had access to Faively’s drawings and know-how. This time, things went more smoothly, and Wabtec was able to produce competing parts. But Faively obtained an injunction against Wabtec, the court concluding that the reverse engineering effort was “fatally tainted.”

The case is one of many where parties seize on a permissive rule from intellectual property law and stretch it past the breaking point. DNA is not copyrightable. Copyright applies to original works of authorship, not molecules in cells. But one party that produced gene sequences proposed protecting them as copyrightable musical works, on the theory that the sequences could be interpreted as musical notes.²⁴⁴ Another creative entity took the unsuccessful position in litigation that it had not copied recordings of Beatles songs. Rather, it had made “psycho-acoustic simulations” that sounded uncannily similar.²⁴⁵ Parties have argued that they should not be liable for infringement where they later get a license from a subsequent owner of the intellectual property rights—as though the owner could go back in time and grant a license.²⁴⁶

Intellectual property law is thought to provide incentives for authors and inventors. It also provides incentives for creativity about intellectual property law itself.

XXVII. Access Denied

*The United States is a nation of laws:
badly written and randomly enforced.*²⁴⁷

In 1984, Congress passed the first federal statute that targeted nefarious use of a computer.²⁴⁸ The Computer Fraud and Abuse Act (as renamed and amended several times)²⁴⁹ imposes civil and criminal liability on anyone that causes damage by intentionally accessing a computer without authorization. The statute addressed the threats associated with the new technology by using two of the most flexible words in the legal vocabulary, “access” and

“authorize.”²⁵⁰ Access could mean simply communicating with a computer or could require actually reading or writing information from the computer. It could range from touching a computer’s keyboard to using a telescope to read the reflections of a screen in someone’s eyes (a complex hack which has proved feasible, if only from a few dozen feet away²⁵¹). If to “access” a computer means to change the contents of its memory or affect the functioning of its software, then taking a picture with a phone would be accessing the computer in the phone. Indeed, having your picture taken would be accessing the computer’s memory, in a broad sense. Any of those interpretations would be supportable for access as either a legal term or a computing term. As to “authorize,” an entire branch of common law, the law of agency, tries to flesh out when parties have authority do things. Many other bodies of law have other meanings for “authorize.” The term has similar flexibility as computer jargon.

The first CFAA conviction involved a grad student who devised a worm that could write itself into computers on a network using security flaws in email software, in the “finger demon” program (which normally limited information in response to inquiries), and trusted host programs, that allow use by designated computers.²⁵² Once inside, the worm would cause computers on the network to duplicate and propagate the worm. In 1988, the student “released the worm into INTERNET, which is a group of national networks that connect university, governmental, and military computers around the country.”²⁵³ The worm quickly spread far and wide, crashing many machines. The Second Circuit concluded that because the student used the various programs on the computers in ways other than their “intended function,” he had “accessed” those machines “without authorization.”²⁵⁴ If ever there was unauthorized access to computers, that was it. But suggesting that use of software in a way that is different from its “intended function” is “access” “without authorization” opens up a broad range of applicability, because creative people are always trying to get computers to do new things (for better or worse). Constraints encourage creativity.

Creative lawyers soon started stretching the meaning of the statute. Before quitting, an employee emailed his employer’s confidential business plan and trade secrets to his next employer. The employee had authority to use the computer, but the court reasoned that his breach of duty terminated his authorization, and so he accessed the computer without authority.²⁵⁵ A breach was also found where an ex-employee helped his new employer write a program that accessed his former employer’s website. None of the information retrieved was confidential (and the program did not circumvent any security measures). The court, however, reasoned that there was unauthorized access because a clause in his first employment contract prohibited the employee for using any of the company’s information against its interest.²⁵⁶

“Authority” could be lacking because software was not used as intended, or under agency principles, or by breach of the contract granting authority.²⁵⁷ “Access” could likewise be read to cover any use of a computer, directly or over a network. This reading of those two simple words made the CFAA’s potential scope extremely broad. Our use of networks is subject to any number of contracts. Someone checking Facebook on their iPhone likely implicates their terms of service agreement with Facebook, the phone service provider, and Apple. If they check their work messages, that also implicates access to their employer’s computer, subject to that agency relationship. Multiply that by the many other contractual and agency relationships implicated over the course of the day. It is unlikely that one would not breach one of the hundreds of paragraphs in the terms of service (even if they have never read them), or taken some steps not in their principal’s best interest. Other federal statutes can be equally broad. The “theft of honest services,” although used to prosecute perceived breaches of duty by corporate or governmental officials, has become flexible enough to make a violator of anyone who goes on a

frolic or detour when on payroll.²⁵⁸ Some figure that, given the breadth and vagueness of federal statutes, a typical person might well commit several theoretical felonies a day.²⁵⁹

In *United States v. Drew*, defendant was convicted of a felony for breaching MySpace's terms of service. The facts in *Drew* call for a remedy. The defendant, acting with her teenage daughter and others, created a fictitious MySpace profile of a boy. Some of the group, pretending to be the boy, deceived and taunted the daughter's former friend, who shortly thereafter committed suicide.²⁶⁰ Despite the name of the Computer Fraud and Abuse Act, defendant was not convicted for using a computer to deceive the teenager. The act does not target that sort of fraud. She was convicted, in effect, for breach of contract. She violated MySpace's terms of service, which require users to provide "truthful and accurate" information when registering for an account.²⁶¹ That meant she made unauthorized access to MySpace's computers.

Post-trial, the trial judge dismissed the charges. The court reasoned that the statute has been read so broadly that it fails to give the notice required by due process of what is prohibited by criminal law.²⁶² The spectre of substantial civil and criminal liability premised only on breach of the terms of use of a website or software remains.

Ironically, the statute is too narrow in other respects to encompass many types of computer fraud and abuse. Deceit using a computer with authority does not fall within the Computer Fraud and Abuse Act, which is why *Drew* was not charged with deceiving the girl, but with breaching her contract with MySpace. Mortgage company employees who scrubbed company computer hard drives to hide data theft nonetheless made authorized use of the computers.²⁶³ Fortunately, there remain many other statutes that address fraud and abuse, with or without a computer.

XXVIII. Last First Sale

For intellectual property, the rights of attribution and control have deep roots. For physical property, people instinctively feel an attachment. One could argue that the USSR fell because its economic system failed to account for the importance of property to humans. As Frank Zappa succinctly put it, "Communism doesn't work because people like to own stuff." Someone can own a piece of stuff that embodies someone else's intellectual property. The personal property owner would like to do whatever she wants with her stuff, while the intellectual property owner would like to control what happens with stuff embodying her protected ideas.

First sale has been a doctrine that struck a balance.²⁶⁴ Someone that owns a copyrighted work (whether the original or an authorized copy) can distribute it to the public or display it to the public, notwithstanding the copyright owner's exclusive rights of public display and distribution.²⁶⁵ The person cannot necessarily make more copies, or adapt the work, or perform the work publicly, which rights remain under the copyright owner's exclusive control.²⁶⁶ Patent and trademark have similar rules, often travelling under the name "exhaustion," the theory that sale of an authorized object exhausts the rights in that particular object, but does not allow the buyer to make more.

First sale, however, has been shrinking rapidly on several fronts. Many works, especially software, are sold under license agreements that provide, in effect: "We authorize you to use this work under the following terms. We provide a copy, but the copy does not belong to you." If those license terms are effective, then first sale does not apply, because the licensee does not own the copy, merely possesses it.²⁶⁷ Works in digital form may also be wrapped in copying and access controls. Someone who owns a copy may nonetheless be unable effectively to do anything other than what the copyright owner has permitted. If they circumvent the controls,

that may violate the anti-circumvention provisions of the Digital Millennium Copyright Act.²⁶⁸ A more refined reduction in first sale comes from the increasing internationalization of copyright law. The European Union, of late, has pressed for wider recognition of rights for authors to control their works' subsequent lives. The resale right, for example, requires that artists receive a percentage of subsequent sales of their artworks. Certain moral rights apply more broadly, limiting the ability of others to modify works even where they hold the copyright.

For many copyright owners, case law on importation makes first sale, as some have noted, optional. Someone that owns a "lawfully made" copy may import it, because importation is included in the definition of distribution.²⁶⁹ But some courts have held that a copy made outside the United States is not "lawfully made" under the Copyright Act.²⁷⁰ Courts reason, because it was made beyond the reach of the Copyright Act, the copy is neither unlawfully made nor lawfully made, even if authorized by the copyright owner.²⁷¹ If I bought a painting overseas, and brought it into the U.S., I would potentially infringe copyright if I sold it, or displayed it in public. In fact, even importing it would potentially infringe. On a broader scale, copyright owners may opt out of first sale. If foreign-made copies are not subject to first sale, then a copyright owner could arrange for all her books (or DVD's, or CD's, etc.) to be made outside the United States and so not subject to first sale.

Intellectual property is statutory law, often dealing with fast-changing technology. But intellectual property law often seems to change in ways similar to the common law. The pressures on the first sale doctrine push it to its logical extreme. As Cardozo put it: "Every new case is an experiment; and if the accepted rule which seems applicable yields a result which is felt to be unjust, the rule is reconsidered."²⁷² Where limits on first sale seem to eliminate people's ownership of what they have "bought," there is the doctrinal pressure Cardozo describes. Some lower courts have begun to reject these forms of licensing agreements, and instead enforce them according to their substance.²⁷³ Under this approach, if a party hands over a copy of a work in exchange for a price, never expecting that copy back, the transaction is a sale.²⁷⁴ The Supreme Court has bolstered first sale in the patent context, holding that it applies not just to patented products, but products that use patented processes.²⁷⁵ The same policies may be applied in copyright.²⁷⁶ Beyond the courts, the market may likewise be responding. Apple began offering music DRM free (for a higher price).²⁷⁷

XXIX. Old Lines on New Bottles

Shrinkwrap and clickwrap contracts present one of the thorniest current issues in contract law.²⁷⁸ Enforcing the terms can be problematic because the buyer often does not read or even have an opportunity to read the terms before receiving the product. Not enforcing the terms can be problematic because the alternative would be to require laborious measures to ensure that buyers were aware at least of the material terms of the contract before agreeing. Buyers show by common conduct that they are willing to enter into agreements without awareness of the specific terms of service; buyers regularly check boxes and click through.

One of the most controversial features of such contracts is their restriction on first sale rights. Terms of use regularly prohibit resale or otherwise impose limits on rights the purchaser would normally have under first sale to distribute or display the work. There is considerable disagreement among courts and commentators about the enforceability of such provisions. Even the Uniform Commercial Code has been drawn into the fray. States have all adopted the UCC, making it the basic commercial law in the United States. Every article of the UCC has been successfully updated, except for Article 2, which governs sales contracts.²⁷⁹ The revision of Article 2 met the unusual fate of being largely ignored by state legislatures. A key reason is that

it contained rules governing the enforceability of shrinkwrap and clickwrap contracts, and there is not enough consensus on what those rules should be. Shrink-wrap terms and contract law would appear to be a cutting edge legal issue of contemporary high technology law.

But it turns out that Thomas Edison used such terms on his patented products. On the Edison Cylinder, an early sound recording medium, Edison attempted to use unilateral terms to bind not just his buyers, but also anyone down the line, to his resale price maintenance rules:

Patented in Great Britain, Germany, France and other Countries. This record is sold upon the condition that it shall not be re-sold to or by any unauthorized dealer or used for duplication, and that it shall not be sold, or offered for sale, by the original, or any subsequent purchaser (except by authorized jobber or factor to an authorized retail dealer) for less than 35 cents in the United States, nor in other countries for less than the price given in the current Edison catalogues of the country in which it is sold. Upon any breach of this condition, the license to use and vend this record, implied from such sale, immediately terminates.²⁸⁰

Edison held some 1,093 U.S. patents. Had business methods been patentable in his day, that number may have been greater.

XXX. Pancopticon

At one time in the United States, copyright attached to a work of authorship when it was published, provided it included the magical copyright symbol, along with first year of publication and the copyright owner's name, for example, "© 1968 Arthur C. Clarke."²⁸¹ In order to harmonize its law with other jurisdictions, the United States has shifted. Copyright now attaches when a work is first fixed in tangible form.²⁸² For a time, copyright could still be lost if the work was later published without a copyright notice. Finally, the United States dropped the requirement of a copyright notice.²⁸³ Copyright now attaches to a work of authorship, as soon as it is fixed in some tangible form.²⁸⁴ The last boundary of copyright became fixation.

At the same time, more and more is becoming fixed. Increasingly, electronic devices capture sights and sounds from everyday life. As YouTube demonstrates, security cameras often record dramatic vignettes, from surprised kittens to railroad workers narrowly escaping oncoming trains. Such footage could be commercially valuable. In some cases, someone would like to have the copyright in order to prevent distribution of the images.

Fixation now is less of a boundary, as recording devices become ubiquitous. Other requirements to copyright may now move to the fore. Copyright attaches only to a work of authorship made with at least a minimal spark of creativity.²⁸⁵ Mounting a security camera on a loading dock or convenience store counter or parking garage may not be held creative. But the requirement of creativity is extremely low. In deciding which elements of the scene to capture, creative choices could be made.

The same camera mounted by different people could give different results. If a contractor routinely placed a security camera four feet above every exit to a parking garage, the footage might be held not to be a work of authorship. If an artist mounted the same camera in the same alley to capture the occurrences over the course of a year, that would be well above the line of a "minimal spark of creativity." So the state of mind is everything, as in the Artificial Intelligence Koan:

A novice was trying to fix a broken Lisp machine by turning the power off and on. Knight, seeing what the student was doing, spoke sternly: "You cannot fix a machine by just

power-cycling it with no understanding of what is going wrong.” Knight turned the machine off and on. The machine worked.²⁸⁶

The question will also arise of the ownership of such copyrights. If the camera trained on a motel’s swimming pool caught a movie star tossing her spouse in the deep end, the owner of the copyright could get considerable licensing revenue. Several parties might claim authorship: the motel, which chose the spot and hired someone to install the camera; the contractor, who may have made choices about the field of view and how to account for changing light conditions; the worker, who actually installed the camera.

Perhaps contracts, which address all kinds of contingencies, will now provide for the possible windfall of some valuable video. A boilerplate clause might address both originality and ownership: “Beverly Hills Camera Co. installs the equipment subject to this contract with artistic intent. Buyer agrees that any copyright to this work will belong to Beverly Hills Camera.” We will agree that everything we do is the subject of a work of authorship.

XXXI. Social Register

A high tech client might ask her lawyer how to register the copyright in the firm’s software overseas. The client had already secured patents abroad. The Patent Cooperation Treaty makes that easier, permitting inventors to file an international application in one patent office, which will then be sent on and converted into applications in the countries designated.²⁸⁷ For trademarks, The Madrid Protocol has likewise simplified things, permitting registration of a mark to trigger registrations abroad.²⁸⁸ But for copyrights in a foreign jurisdiction, the answer, generally, is that there is no place to file. The United States is unique in having a copyright office for registering copyrights, taking deposit of copies of copyrighted works, and recording transactions (such as grants of a copyright as collateral). The vast majority of countries have no Copyright Office at all, and the few that do have a much simpler version than the United States.

Copyright springs into life as soon as a work is created.²⁸⁹ Registration is not necessary to have a copyright under United States law – unless you want the copyright to have any weight. First, infringement of an unauthorized copyright does not give a right to statutory damages, instead limits the plaintiff to actual damages.²⁹⁰ Second, one is required to register the copyright before bringing an infringement action. So although one can recover damages for infringement of an unregistered copyright, you must register in order to file suit.²⁹¹ Registration matters.

But registration has increasingly less value for disclosure of works. For patents and trademarks, registration has created a database of considerable value. Patents provide disclosure of inventions. That means future applicants cannot claim similar inventions, or ones that existing patents (along with other work in the field) make obvious. Patents also provide a trove of information for competitors seeking to keep up in the field (not to mention avoiding infringement, and plotting their own patent portfolio), researchers in technology (ranging from scientists to historians).²⁹² Patent searching is an art of its own. Once patents were available by getting a copy mailed from the USPTO, although abstracts were available in local libraries. But now patents are freely available online.

The trademark register likewise receives a great deal of attention, for legal practice and many other purposes. Before choosing a mark, a wise entrepreneur searches the register to clear the possibility of confusingly similar marks. Nevertheless, such a search requires imagination. Someone considering using FINDER as a mark for a memory boosting drug would have to look out for marks similar in sight (FINER, FINDER’S KEEPERS), sound

(PHYNDUH, OFFENDER), or meaning (DISCOVERER, LABRADOR). As with patents, the comprehensive trademark register may be searched online.

Like the USPTO, the records of the Copyright Office may be searched online. But there is less reason to search the copyright records. People can search the patent and trademark records to find out what is protected. The trademark register shows the registered marks. The patent records provide the patent claims (which state the extent of patent protection), along with a specification that describes how to make and use the invention, often with drawings. So patent and trademark searches are regularly done (to avoid infringement, to figure out what can yet be patented or trademarked, to keep tabs on the competition, etc.). But copyright is different. First, unlike patent and trademark, copyright infringement requires copying. So if an author writes a book that happens to be similar to a copyrighted book, she is not liable. An inventor that develops and sells something that someone else already patented, by contrast, infringes that patent, as does the seller who innocently uses a symbol confusingly similar to an existing mark.

More important, the copyright records do not tell us what is protected. The records will list the name of the author and title of the book. But the book itself is not in the searchable records. Unlike copyright and patent, registration does not make the intellectual property's content easily accessible to the public. If an author was working on a book, song, or dance, she cannot search the records to see if someone has already done something similar. The copyright records are just a bare bones notice filing system, of considerably less practical importance. The copyright holder must register to be eligible for statutory damages and attorney's fees, and must register before suing for infringement – but whether she registers is much less likely to be something others will search to find out.

In addition to registration, the copyright owner must deposit copies of the work.²⁹³ The deposit requirement has many exceptions. Deposit is excused in whole or in part for software, for material with trade secrets, for secure multiple choice tests (in some cases, secured tests are deposited but then returned). The deposit requirement allows the Copyright Office to examine the work to see whether it is deserving of copyright. In practice, few works receive a thorough examination. Under the Rule of Doubt, registration is allowed unless the work is clearly not copyrightable.²⁹⁴ So there is not a class of civil servants paid to listen to music and read books all day in contemplation. The office issues registration at speed – but nevertheless has a gigantic backlog, due to the ever increasing number of items being registered. All those deposited copies have given the Library of Congress one of the largest collections on earth, even though the library retains only some permanently. One can visit the library and look at copies, but not check them out. So unlike patents and trademarks, which are freely accessible online, only some deposited copies of copyrighted works are available, and only by going to Washington, D.C.

The copyright records could be something that everyone would search. Copyright owners are now encouraged to deposit works in electronic form. Those works could be put into a searchable copyright database. But there is little chance of such a free, government-provided Kindle-iTunes-Netflix – a singular provider. Copyright provides an incentive for authors to create works. Authors are required to send copies to the Copyright Office and Library of Congress – who are required, in digital terms, to keep them locked away.

XXXII. Shifting Sands

Artist Christoph Buchel conceived an art installation, "Training Ground for Democracy."²⁹⁵ Visitors would walk, climb, and train in "a movie theater, a house, a bar, a mobile home, various sea containers, a bomb carousel, and an aircraft fuselage."²⁹⁶ Buchel completed part of

the installation at the Massachusetts Museum of Contemporary Art. The artist and museum, however, fell out before the work was complete. The museum continued work and proposed permitting visitors in while the work remained in unfinished form (perhaps covering its elements with a tarpaulin), Buchel sued for infringement of copyright and of moral rights. Most works in the United States are not protected with moral rights, but moral rights do apply to works of visual art.²⁹⁷ The case raised thorny conflicts between the artist's moral rights and the museum's right to use its space, and materials that it had worked with Buchel to install. The statute contemplates works like paintings and sculpture, and so would require artful interpretation in a new artistic context. The trial court resolved the matter by holding that the artist's rights of attribution and integrity of the work would not be infringed by display of the work in incomplete form. That avoided the more difficult interpretive issues—but would raise serious issues in future cases. There would be a moral hazard if others could copy (or modify, or misattribute, etc.) works as long as they acted before the artist had finished. The appellate court held that unfinished works are protected, and remanded the case.²⁹⁸

We commonly discuss the difficulties for intellectual property law in adjusting to rapidly changing technology.²⁹⁹ Art, constrained only by imagination and often driven by challenging received ideas, can change the law's preconceptions in other ways.

XXXIII. Internet, Circa 1967

The law must adjust to changes in society and its technology. With respect to copyright especially, it is often said that the statute was written for books and music and did not contemplate today's networked world. The Internet is a world-wide machine for making and distributing copies, putting a new light on the exclusive rights of an author to make and distribute copies of a work (not to mention to display, adapt, and perform a work, all of which can be done with the Internet). But we can exaggerate how unforeseeable our times were. Benjamin Kaplan wrote his 1967 book, *An Unhurried View of Copyright*,³⁰⁰ while he was a major influence in drafting what eventually became the Copyright Act of 1976. In addition to a nuanced history of copyright and discussion of the policy issues in 1967, Kaplan analyzed how copyright law would have to adapt to a future worldwide computer network with multi-media capabilities.³⁰¹ His vision of a Web is closer to reality than other, more recent futuristic conjectured cyberspaces:

You must imagine, at the eventual heart of things to come, linked or integrated systems or networks of computers capable of storing faithful simulacra of the entire treasure of the accumulated knowledge and artistic production of past ages, and of taking into the store new intelligence of all sorts as produced."³⁰²

Kaplan foresaw many of today's issues. The ease with which one can copy, adapt and distribute works raises a tension with the "'moral rights' of authors to prevent abuses in the exploitation of their creations."³⁰³ He likewise spoke of the need to encourage a registration system where authors could submit their works in a form permitting indexing, abstracting, storage and retrieval³⁰⁴—an area where the Copyright Office has noticeably fallen behind. It would no longer be necessary to publish academic material in "a mélange of learned journals and in the output of university presses."³⁰⁵ Such material would be available online—both manuscripts that had been accepted for "publication" and those that had not.³⁰⁶ For more commercial works, there would likely be two phases: an initial broad commercialization phase, followed by a secondary phase, with what would now be called digital rights management systems: "book-keeping apparatus that can continue for the whole copyright period to bill the

customers monthly or weekly,” while “preventing unconsented-to private copying of works.”³⁰⁷ There would be issues about how such systems would be administered, and whether the government would have a role to play.³⁰⁸ All that foreshadows such controversies as the Google Book Project,³⁰⁹ the Digital Millennium Copyright Act’s legal protections for anti-copying technology,³¹⁰ and the ongoing negotiations for amendments to copyright treaties to deal with issues of media “piracy.”³¹¹ Kaplan also saw issues with respect to “automatic translation, in world-wide networks.”³¹² Here perhaps he was too generous to the coming decades. Software translation of natural language has proved far more difficult than early researchers in artificial intelligence expected.³¹³

So today’s copyright issues were not unforeseen. Kaplan offered few solutions to them. The one concrete proposition he made was general: that the United States should seek to harmonize its copyright law with other nations. He cited in particular the differing treatment that United States law has accorded foreign authors, a lingering issue. In one respect, harmonization has become a little easier since 1967. At that time, one superpower, the Union of Soviet Socialist Republics, did not recognize private property like copyright.

*Lorie M. Graham is a Professor of Law at Suffolk University Law School in Boston Massachusetts, where she teaches courses on Indigenous Peoples’ Rights, Property, and International Human Rights. She holds an LL.M from Harvard Law School and a J.D. from Syracuse University. Professor Graham has served as legal consultant on a range of matters impacting indigenous nations in the United States, such as land claims, economic development, environmental protection, and jurisdictional disputes. She serves on a number of committees, including the International Law Association’s Committee on the Rights of Indigenous Peoples and the Harvard University Native American Advisory Board. She is the former director of the Harvard University Native American Program and has been a visiting lecturer at Harvard Law School and at University of Massachusetts-Amherst. She practiced law at Kramer, Levin in New York City, and clerked for the Honorable Richard D. Simons of the New York Court of Appeals. Professor Graham has served as an author for the *Cohen’s Handbook of Federal Indian Law* and has published extensively in the areas of international human rights law and indigenous peoples’ rights.

** Prof. McJohn received his B.A. in Computer Studies and his J.D., magna cum laude, from Northwestern University. After studying law in Germany and a federal appellate clerkship, he practiced law in the Chicago office of Latham and Watkins and taught at the IIT Chicago-Kent School of Law. At Suffolk University School of Law, he teaches in the areas of intellectual property and commercial law. His scholarly interests are intellectual property, commercial law, computer law, artificial intelligence, and economic analysis.

1. “The consensus as far as I have experienced it among AI researchers is that natural-language processing is extraordinarily difficult, as it could involve the entirety of a person’s knowledge, which of course is extraordinarily difficult to model on a computer.” Steven Pinker, quoted in John Seabrook, *Hello HAL*, THE NEW YORKER, June 23, 2008, at 40. See also Stephen McJohn, *Artificial Legal Intelligence*, 12 HARV. J.L. & TECH. 241 (1998) (discussing how common sense cognitive tasks like natural language comprehension and production have been much more difficult to emulate with computers than abstract tasks like mathematics).

2. LED ZEPPELIN, *Stairway to Heaven*, on LED ZEPPELIN IV (Atlantic Records 1971).

3. 2001: A SPACE ODYSSEY (Metro-Goldwyn-Mayer 1968) (HAL, the ship’s computer, speaking to one of the astronauts).

4. BOB MARLEY & THE WAILERS, *Three Little Birds*, on EXODUS (Tuff Gong 1977).

5. To really test copyright law, we could analyze possible infringement by the makers of the robot. They worked beyond the territorial scope of U.S. copyright law, but sent the robot within the statute’s domain. The hypothetical also raises a question of first impression: how to apply relativistic effects to the running of the term of the statute of limitations, because Einstein’s theories tell us that time runs much more slowly from the viewpoint of one travelling near the speed of light.

6. 17 U.S.C. § 107 (2010). Courts could also use other copyright doctrines, like de minimis use.

7. *Bridgeport Music, Inc. v. UMG Recordings, Inc.*, 585 F.3d 267, 277–79 (6th Cir. 2009).

8. See James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 YALE L.J. 882 (2007) (discussing how parties often shy away from making fair use for fear of litigation).

9. See *Campbell v. Acuff-Rose Music*, 510 U.S. 569 (1994) (discussing creative expression and the transformation of quoted works).

-
10. *Id.* at 590–91 (discussing whether holder of copyright in song *Pretty Woman* would be likely to market a rap parody version).
 11. Some law professors have produced good novels. *See, e.g.*, KERMIT ROOSEVELT, *IN THE SHADOW OF THE LAW* (2005); STEPHEN CARTER, *THE EMPEROR OF OCEAN PARK* (2002).
 12. *See* *Eldred v. Ashcroft*, 537 U.S. 186, 219–20 (2003).
 13. Conversely, lack of copyright protection for fashion design evidently speeds innovation, because designers seek to come out with new designs before the previous generation has been copied. *See* Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VIRGINIA L. REV. 1687 (2006).
 14. Attributed to Philip Larkin.
 15. “The Congress shall have Power . . . to Promote the Progress of Science and the 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, § 8, cl. 8.
 16. *See, e.g.*, Shyamkrishna Balganesh, *Foreseeability And Copyright Incentives*, 122 HARV. L. REV. 1569, 1572–75 (2009) (discussing how copyright exceeds its incentive rationale, and suggesting the rationale supports limiting copyright protection to foreseeable uses).
 17. On moral rights justifications for copyright, *see* Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533 (1993); Alfred C. Yen, *Restoring the Natural Law: Copyright as Labor and Possession*, 51 OHIO ST. L.J. 517 (1990).
 18. *Sony Corporation of America v. University City Studios*, 464 U.S. 417, 421 (1984).
 19. *Harper & Row, Publishers v. Nation Enterprises*, 471 U.S. 539, 542 (1985).
 20. *Campbell v. Acuff-Rose Music*, 510 U.S. 569 (1994).
 21. 495 U.S. 207, 238 (1990).
 22. *See* JULIE E. COHEN ET AL., *COPYRIGHT IN A GLOBAL INFORMATION ECONOMY* 525–602 (Aspen Publishers, 2d ed. 2006); ROBERT A. GORMAN & JANE C. GINSBURG, *COPYRIGHT* 715–847 (Foundation Press, 7th ed. 2006).
 23. *See* STEPHEN MCJOHN, *COPYRIGHT: EXAMPLES AND EXPLANATIONS* 293–316 (Aspen Publishers, 2d ed. 2009); MARY LAFRANCE, *COPYRIGHT LAW IN A NUTSHELL* 293–304 (2008).
 24. For an effort to ensure that the intellectual history of ideas remain current in intellectual property scholarship, *see* Michael Madison, *Lost Classics of Intellectual Property Law: 1 of 4*, MADISONIAN.NET (January 1st, 2010), <http://madisonian.net/2010/01/01/lost-classics-of-intellectual-property-law-1-of-4/>.
 25. 15 U.S.C. §1127 (2010).
 26. *Qualitex v. Jacobson Products*, 514 U.S. 159, 162–63 (1995).
 27. *Qualitex*, 514 U.S. at 162–63.
 28. *See* *Wal-Mart Stores v. Samara Bros.*, 529 U.S. 205, 210–11 (2000).
 29. 21 C.F.R. § 201.10(c)(3) (2010).
 30. *Id.*
 31. *See* *Shire U.S., Inc. v. Barr Labs., Inc.*, 329 F.3d 348, 351 (3d Cir. 2003).
 32. Notably, Bayer retained its position as the leading seller despite lack of trademark protection. Glynn S. Lunney, Jr., *Trademark Monopolies*, 48 EMORY L.J. 367, 454 n.284 (1999).
 33. Glynn, *supra* note 32, at 454 n.284.
 34. *See, e.g.*, Andrew Beckerman-Rodau, *The Choice Between Patent Protection and Trade Secret Protection: A Legal and Business Decision*, 84 J. PAT. & TRADEMARK OFF. SOC’Y 371, 371 n.19 (2002).
 35. *See* 15 U.S.C. §§ 1052(d), 1114(1) (2010).
 36. *Hormel Foods Corp. v. Jim Henson Prods.*, 73 F.3d 497, 503 (2d Cir. 1996).
 37. *See* 15 U.S.C. § 1125(c) (2010).
 38. *See* Owen D. Jones, Joshua W. Buckholtz, Jeffrey D. Schall & Rene Marois, *Brain Imaging for Legal Thinkers: A Guide for the Perplexed*, 2009 STAN. TECH. L. REV. 5 (2009). *See also* Joshua Greene & Jonathan Cohen, *For the Law, Neuroscience Changes Nothing and Everything*, 359 PHIL. TRANSACTIONS ROYAL SOC’Y LONDON B: BIOLOGICAL SCI. 1775 (2004) (arguing that in the future, “neuroscience will probably have a transformative effect on the law”).
 39. Dictionary Facts, OXFORD ENGLISH DICTIONARY, <http://www.oed.com/about/facts.html> (last visited Oct. 16, 2010).
 40. *See* Trademark Electronic Search System, USPTO, <http://tess2.uspto.gov/> (last visited Oct. 16, 2010).
 41. *Allen v. National Video, Inc.*, 610 F. Supp. 612, 617 (S.D.N.Y. 1985).
 42. *Allen v. Am. Apparel, Inc.*, No. 08 CV 3179 (TPG) (KNF) (S.D.N.Y. 2009). The case reportedly settled. *See* C.J. Hughes, *For \$5 Million, Woody Allen Agrees to Drop Lawsuit*, NEW YORK TIMES (May 18, 2009), <http://www.nytimes.com/2009/05/19/nyregion/19allen.html>.

-
43. Gilliam v. Am. Broad. Cos., 538 F.2d 14, 17 (1976).
 44. See ROBERTA KWALL, SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES (Stanford University Press 2009).
 45. Woods v. Universal City Studios, Inc., 920 F. Supp. 62, 65 (S.D.N.Y. 1996).
 46. Leibovitz v. Paramount Pictures Corp., 137 F.3d 109, 111 (2d Cir. 1998).
 47. Ed Pilkington, *Annie Leibovitz Pawns Rights To All Future Work*, GUARDIAN (February 24, 2009) (“Records show she secured the loan partly against property, but also by putting up as collateral the copyright, negatives and contract rights to every photograph she has ever taken or will take in future until the loans are paid off.”).
 48. U.C.C. § 9-204(a) (“security agreement may create or provide for a security interest in after-acquired collateral”).
 49. Attributed to William Faulkner.
 50. See Gaylord v. United States, 595 F.3d 1364 (Fed. Cir. 2010). Disclosure: one of the authors of this article, Stephen McJohn, worked pro bono on this appeal with lawyers for the sculptor.
 51. Gaylord v. United States, 85 Fed. Cl. 59, 63 (Fed. Cl. 2008).
 52. *Id.* at 64.
 53. See, e.g., Schnapper v. Foley, 667 F.2d 102 (D.C. Cir. 1981).
 54. *Gaylord*, 85 Fed. Cl. at 68–71.
 55. 17 U.S.C. § 107 (2010).
 56. *Id.* at 64.
 57. *Id.* at 65–66.
 58. Princeton Univ. Press v. Michigan Document Services, 99 F.3d 1381 (6th Cir. 1996).
 59. Sony Corporation of America v. University City Studios, 464 U.S. 417, 420 (1984).
 60. Campbell v. Acuff-Rose Music, 510 U.S. 569 (1994).
 61. See SunTrust Bank v. Houghton Mifflin Co., 268 F.3d 1257, 1275 (11th Cir. 2001) (holding fair use protected the author of *The Wind Done Gone*, a parody of *Gone with the Wind*). The issue could also have been addressed, but was not, in analyzing whether the United State Postal Service’s use of another’s photograph was fair use, in the case discussed at text *supra* note 50.
 62. SIR WALTER SCOTT, THE POETICAL WORKS OF SIR WALTER SCOTT, Bart 305 (George S. Appleton ed., 1851).
 63. *Campbell*, 510 U.S. at 591.
 64. *Id.*, relying on Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1111 (1990).
 65. See Laura Heymann, *Everything Is Transformative: Fair Use And Reader Response*, 31 COLUM. J. L. & ARTS 445 (2008) (suggesting that in deciding whether a work transformative, courts look to literary theory of reader-response criticism).
 66. Perfect 10, Inc. v. Amazon.com, Inc., 508 F.3d 1146, 1165 (9th Cir. 2007).
 67. See A.V. v. iParadigms, LLC, 562 F.3d 630 (4th Cir. 2009).
 68. Comedy III Productions, Inc. v. Gary Saderup, Inc., 24 Cal. 4th 387, 811 (2001).
 69. *Id.* at 808.
 70. *Id.* at 809.
 71. See Stacey L. Dogan, *An Exclusive Right to Evoke*, 44 B.C. L. REV. 291, 299–302 (2003).
 72. The Supreme Court rejected the machine-or-transformation test in *Bilski v. Kappos*, 130 S. Ct. 3218, 177 L. Ed. 2d 792 (2010).
 73. See *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc) (holding a process is only patentable if “(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing”).
 74. See Stephen McJohn, *Scary Patents*, 7 NW. J. TECH. & INTELL. PROP. 343 (2009) (“In short, the Federal Circuit in *Bilski* chose to adopt a rule that the Supreme Court had specifically declined to make a general rule, chose to ignore the facts of the Supreme Court cases and its own most recent case on point, and chose to set aside the statute’s definition of the word that governed the case.”).
 75. *Id.*
 76. See, e.g., E.I. du Pont de Nemours & Co. v. MacDermid Printing Solutions, L.L.C., 525 F.3d 1353, 1361 (Fed. Cir. 2008) (in patent case: “Contrary to MacDermid’s argument, this reference did not run afoul of the MPEP by failing to use magic words. The MPEP provision requires only that the applicant use a statement ‘such as’ the one provided in Section 201.11.”).
 77. 17 U.S.C. § 408 (2010).
 78. 17 U.S.C. § 408 (2010).
 79. *Cf.* 17 U.S.C. § 102(b).
 80. See *Matthew Bender & Co. v. West Publishing Co.*, 158 F.3d 693 (2d Cir. 1998).

-
81. See Paul J. Heald, *Payment Demands for Spurious Copyrights: Four Causes of Action*, 1 J. INTELL. PROP. L. 259 (1994).
 82. *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007) (rejecting Federal Circuit's strict requirement that a licensee breach license agreement in order to have jurisdiction for declaratory judgment action).
 83. *Hewlett-Packard Co. v. Acceleron LLC*, 587 F.3d 1358, 1362 (Fed. Cir. 2009) ("The purpose of a declaratory judgment action cannot be defeated simply by the stratagem of a correspondence that avoids the magic words such as 'litigation' or 'infringement.'").
 84. Karen Sloan, *James Joyce Estate Agrees to Pay Plaintiff's Fees in Fair Use Dispute*, THE NATIONAL LAW JOURNAL (September 30, 2009), <http://www.law.com/jsp/article.jsp?id=1202434181383>.
 85. See Stephen McJohn, *The Paradoxes of Free Software*, 9 GEO. MASON. L. REV. 25 (2000).
 86. See GNU General Public License, GNU, <http://www.gnu.org/copyleft/gpl.html> (last updated Oct. 9, 2010).
 87. Robert W. Gomulkiewicz, *General Public License 3.0: Hacking the Free Software Movement's Constitution*, 42 HOUS. L. REV. 1015 (2005).
 88. See Greg Vetter, *Exit and Voice in Free and Open Source Software Licensing: Moderating the Rein over Software Users*, 85 OR. L. REV. 183 (2006).
 89. McJohn, *supra* note 85, at 34 ("Open source licenses require licensees to respect the author's right of attribution (to get credit for her work) and her right to avoid misattribution (not to have other people's work ascribed to her).").
 90. There has been more litigation about ownership of open source software. See Jonathan Zittrain, *Normative Principles For Evaluating Free And Proprietary Software*, 71 U. CHI. L. REV. 265, 265-87 (2004) (describing history of disputes involving rights to Linux, an open source operating system).
 91. See *Jacobsen v. Katzer*, 535 F.3d 1373 (Fed. Cir. 2008).
 92. See generally Brett M. Frischmann, et al., *Constructing Commons in the Cultural Environment*, CORNELL L. REV. 657 (2010).
 93. See *License Your Work*, CREATIVE COMMONS, <http://creativecommons.org/choose/> (last visited Oct. 22, 2010).
 94. See Catherine L. Fisk, *Credit Where It's Due: The Law and Norms of Attribution*, 95 GEO. L.J. 49, 90 (2006).
 95. See Fisk, *supra* note 94, at 50 (2006) ("Attribution is foundational to the modern economy. The reputation we develop for the work we do proves to the world the nature of our human capital. Credit is instrumentally beneficial in establishing a reputation and intrinsically valuable simply for the pleasure of being acknowledged. Indeed, credit is itself a form of human capital.").
 96. See *Before Licensing*, CREATIVE COMMONS, http://wiki.creativecommons.org/Before_Licensing (last visited Oct. 22, 2010).
 97. GNU Operating System, *Gnu General Public License, Version 3, 29 June 2007*, GNU, <http://www.gnu.org/licenses/gpl-3.0.html> (last updated Oct. 9, 2010).
 98. See *Why should I use the GNU GPL rather than other free software licenses?*, GNU, <http://www.gnu.org/licenses/gpl-faq.html#WhyUseGPL> (last visited Oct. 22, 2010).
 99. See *The Artistic License*, OPEN SOURCE INITIATIVE, <http://www.opensource.org/licenses/artistic-license.php> (last visited Oct. 22, 2010).
 100. See *The MIT License*, OPEN SOURCE INITIATIVE, <http://www.opensource.org/licenses/mit-license.php> (last visited Oct. 22, 2010).
 101. PHILLIP M. PARKER, ICON GROUP INTERNATIONAL, INC., REFEREEING WEBSTER'S QUOTATION, FATS AND PHRASES 2 (2008).
 102. See, e.g., Tim Reagan et al., *Citations to Unpublished Opinions in Federal Courts of Appeal: Preliminary Report*, Federal Judicial Center (2005), available at <http://www.fjc.gov>.
 103. Penelope Pether, *Sorcerers, Not Apprentices: How Judicial Clerks And Staff Attorneys Impoverish U.S. Law*, 39 ARIZ. ST. L.J. 1, 5 (2007).
 104. Kenneth J. Schmier and Michael K. Schmier, *Legislative Reform: Has Anyone Noticed the Judiciary's Abandonment of Stare Decisis?*, 7 J.L. & SOC. CHALLENGES 233 (2005).
 105. Erica S. Weisgerber, *Unpublished Opinions: A Convenient Means to an Unconstitutional End*, 97 GEO L.J. 621 (2009).
 106. 17 U.S.C. § 107 (2010).
 107. See, e.g., Rebecca Tushnet, *Naming Rights: Attribution and Law*, 2007 UTAH L. REV. 789 (2007) (discussing whether United States copyright law should adopt a right of attribution, as recognized in other jurisdictions, which recognize moral rights).
 108. See 17 U.S.C. § 106A (2010).
 109. Letter Comments from Judge Alex Kozinski, U.S. Court of Appeals for the Ninth Circuit, to Judge Samuel A. Alito, Jr., Chairman, Advisory Committee on Appellate Rules 5 (Jan. 16, 2004).
 110. *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980).

-
111. To be more exact, patent on inventions embodied in the product. "Patents and copyrights protect inventions and expression; they do not protect products." Mark R. Patterson, *When is Property Intellectual? The Leveraging Problem*, 73 S. CAL. L. REV. 1133, 1133 (2000).
112. See Advertisement for 2008 Mercury Mariner Hybrid, SCIENTIFIC AMERICAN, Sept. 2007, at 41.
113. See 35 U.S.C. § 287(a) (2010).
114. *Id.*
115. U.S. Patent No. 6,687,593 (issued February 3, 2004).
116. See ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS AND WHAT TO DO ABOUT IT* (Princeton Univ. Press 2004).
117. Logan Ward et al., *Breakthrough Awards*, POPULAR MECHANICS, Nov. 2008, at 69, 73.
118. Elizabeth Cooney, *Dueling Emails In MIT Stem Cell Scientist's Tenure Case*, BOSTON.COM, (January 29, 2007), http://www.boston.com/yourlife/health/blog/2007/01/mit_provost_pro.html (professor citing his "12 patent applications and technology disclosures").
119. Charles Petit, *Invisibility Uncloaked*, SCIENCE NEWS, Nov. 21, 2009, at 18. In any event, the paper was eventually published in one of the leading journals, *Science*.
120. *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).
121. *Brenner v. Manson*, 383 U.S. 519, 534-35 (1966).
122. 17 U.S.C. § 102(b) (2010).
123. See *Gottschalk*, 409 U.S. at 68 ("Here the 'process' claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion. The end use may (1) vary from the operation of a train to verification of drivers' licenses to researching the law books for precedents and (2) be performed through any existing machinery or future-devised machinery or without any apparatus.").
124. See Kimberly A. Moore, *Worthless Patents*, 20 BERKELEY TECH. L.J. 1521 (2005).
125. See, e.g., *Jones v. Blige*, 558 F.3d 485 (4th Cir. 2009) (holding no infringement where there was no showing that singer Mary Blige, author of song, "Family Affair" had access to song, "Party Ain't Crunk").
126. See Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 NORTH CAROLINA L. REV. 1421 (2009).
127. On disputes over inventorship as competing narratives, see Jessica M. Silbey, *The Mythical Beginnings of Intellectual Property*, 15 GEORGE MASON L. REV. 319 (2008).
128. See, e.g., Stephen M. Maurer & Suzanne Scotchmer, *The Independent Invention Defense in Intellectual Property*, 69 ECONOMICA 535 (2002) (arguing that independent creation defense would preserve incentives to invent, but also permit more efficient use of inventions), available at <http://www.dklevine.com/archive/scotchmer-independent-invention.pdf>; see also Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475 (2006) (arguing that independent creation defense would more optimally adjust economic effects of patent rights); see also John S. Leibovitz, *Inventing a Nonexclusive Patent System*, 111 YALE L.J. 2251 (2002) (suggesting that it would be economically efficient for independent inventors to receive independent patents on the same invention).
129. See *Symbol Techs., Inc. v. Lemelson Med., Educ. & Research Found., LP*, 429 F.3d 1051 (Fed. Cir. 2005).
130. *Id.* (applying prosecution laches against inventor that delayed over 18 years to keep amending application for patent that would eventually read on bar code technology).
131. Delay can be attributed to the USPTO or to the applicant, who has considerable ability to delay the application, if little ability to speed it up. Various other regimes may cause delay in the patenting process. The statute provides for extra time where there is delay from the regulatory process for pharmaceuticals. See 35 U.S.C. § 155 (2010). The Invention Secrecy Act also provides for a delay or suppression (with compensation for the inventor) of patent applications for inventions, where disclosure is deemed "detrimental to the national security." 35 U.S.C. § 181 (2010) et. seq.; see also *Honeywell International Inc. v. United States*, 609 F.3d 1292 (Fed. Cir. 2010) (1985 patent application for night vision goggles used by military delayed until 2002).
132. 35 U.S.C. § 287(a) (2010).
133. See Stephen Lindholm, *Marking the Software Patent Beast*, 10 STAN. J.L. BUS. & FIN. 82 (2005).
134. DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 32-33 (The University of Chicago Press 2009).
135. To some extent, this practice is already followed by some, to avoid claims of *willful* patent infringement and to avoid acquiring duties to disclose when applying for patents.
136. See Arthur R. Miller, *Common Law Protection For Products Of The Mind: An 'Idea' Whose Time Has Come*, 119 HARV. L. REV. 703, 779 n.12 (2006) (quoting a typical policy: "Do not send in ideas or scripts to FOX or to [its] shows unless it is through an accredited agent. ALL unsolicited ideas and scripts are left unopened and are THROWN AWAY. This is for YOUR protection.").

-
137. *The Wright Brothers & The Invention of the Aerial Age*, SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM, <http://nasm.si.edu/wrightbrothers/> (last visited Oct. 14, 2010).
138. See John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439 (2004).
139. The Smithsonian National Air and Space Museum begins with “the original 1903 Wright Flyer” and ends with “the sole-surviving Boeing 307 Stratoliner and space shuttle Enterprise.” *National Air and Space Museum Press Kit*, http://www.nasm.si.edu/events/pressroom/presskits/museumkit/overview_nasm.cfm (last visited Oct. 14, 2010).
140. Ohio changed its slogan slightly to “Birthplace of Aviation Pioneers,” to include the many astronauts from Ohio, including John Glenn and Neil Armstrong. Stephen Colbert observed: “Twenty-two astronauts were born in Ohio. What is it about your state that makes people want to flee the earth?”
141. Graham Green, *THE THIRD MAN* (London Film Productions 1949) (character Harry Lime speaking).
142. *Diamond v. Chakrabarty*, 447 U.S. 303, 316, n.10 (1980) (listing “telegraph (Morse, No. 1,647); telephone (Bell, No. 174,465); electric lamp (Edison, No. 223,898); airplane (the Wrights, No. 821,393); transistor (Bardeen & Brattain, No. 2,524,035); neutronic reactor (Fermi & Szilard, No. 2,708,656); laser (Schawlow & Townes, No. 2,929,922).”).
143. See *Marconi Wireless Tel. Co. v. United States*, 320 U.S. 1, 4 (1943).
144. *Id.* at 63 (Frankfurter, J., dissenting).
145. Frank Wilczek, *Homesteading In Hilbert Space*, *THIS WILL CHANGE EVERYTHING: IDEAS THAT WILL SHAPE THE FUTURE* 60, 60 (John Brockman ed. 2010).
146. See, e.g., ROBERT A. WILLIAMS JR., *THE AMERICAN INDIAN IN WESTERN LEGAL THOUGHT: THE DISCOURSES OF CONQUEST* (Oxford U. Press 1990).
147. Amy Goodman, *Indigenous Activists March on US Embassy in Copenhagen Urging Obama to ‘Stop the US Energy Industry’s War on Native Peoples and Lands,’* DEMOCRACY NOW (December 10, 2009), http://www.democracynow.org/2009/12/10/indigenous_activists_march_on_us_embassy. The group included Faith Gemmill of Arctic Village in Alaska and Clayton Thomas-Muller of the Canadian group, Indigenous Tar Sands Campaign.
148. *Id.*
149. Declaration on the Rights of Indigenous Peoples, G.A. Res. 61/295, U.N. Doc. A/RES/61/295, art. 29 (Sept. 13, 2007).
150. See Lorie Graham, *A Right to Media?*, 41.2 COLUM. HUMAN RIGHTS L. REV. 101 (forthcoming 2010); Wallace Coffey & Rebecca Tsosie, *Rethinking the Tribal Sovereignty Doctrine: Cultural Sovereignty and the Collective Future of Indian Nations*, 12 STAN. L. & POL’Y REV. 191 (2001).
151. See Angela R. Riley, *Recovering Collectivity*, 18 CARDOZO ARTS & ENT. L.J. 175 (2000). See generally Keith Aoki, *Neocolonialism, Anticommons Property, and Biopiracy in the (Not-So-Brave) New World Order of International Intellectual Property Protection*, 6 IND. J. GLOBAL LEGAL STUD. 11 (1998); Paul Kuruk, *Protecting Folklore Under Modern Intellectual Property Regimes: A Reappraisal of the Tensions Between Individual and Communal Rights in Africa and the United States*, 48 AM. U.L. REV. 769, 819–22 (1999); MICHAEL F. BROWN, *WHO OWNS NATIVE CULTURE?* (Harvard University Press 2003).
152. See Lorie Graham & Stephen McJohn, *Indigenous Peoples and Intellectual Property*, 19 WASH. U. J.L. & POL’Y 313, 328–32 (2005).
153. See 35 U.S.C. § 102 (2010).
154. *Id.*
155. Rosemary J. Coombe, *The Recognition of Indigenous Peoples’ and Community Traditional Knowledge in International Law*, 14 ST. THOMAS L. REV. 275, 281 (2001) (“There is no doubt that the appropriation of traditional knowledge continues and the existing U.S. patent system permits and encourages such appropriation to the extent that it fails to recognize foreign prior art unless it is published.”).
156. See Graham & McJohn, *supra* note 152.
157. 17 U.S.C. § 102 (2010).
158. Cf. Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CAL. L. REV. 1331 (2004).
159. See Kristen A. Carpenter, Sonia K. Katyal, & Angela R. Riley, *In Defense of Property*, 118 YALE L.J. 1022, 1103 (2009) (“affording indigenous groups even minimum protections and profit-sharing rights in harvesting, collecting, organizing, disseminating, and selling their traditional knowledge is crucial, and it can be achieved without employing the absolute ownership rights or exclusive access that cultural property critics fear.”).
160. Indian Treaty Six Nations, Nov. 11, 1794, 7 Stat. 44. The Rehnquist Court overturned a number of long-standing principles of tribal sovereignty in *Oneida* and other cases. See Lorie Graham, *The Racial Discourse of Federal Indian Law*, 42 TULSA L. REV. 103 (2007).
161. See *County of Oneida v. Oneida Indian Nation*, 470 U.S. 226, 231 (1985); see also Joseph William Singer, *Sovereignty and Property*, 86 NW. U. L. REV. 1, 14 (1991) (situating the case within the Supreme Court’s Indian law jurisprudence).
162. *Oneida*, 470 U.S. at 231 n.1 (quoting Treaty of Canandaigua, 7 Stat. at 45).
163. *City of Sherrill v. Oneida Indian Nation*, 544 U.S. 197, 207 (2005).

-
164. See, e.g., U.S. Const. art. I, § 8(3); 25 U.S.C. § 177 (2010) (prohibiting conveyance of Indian land absent a treaty agreeing to that conveyance); Trade and Intercourse Act of 1793, 1 Stat. 329 (1845); see also *Oneida*, 470 U.S. at 240.
 165. See, e.g., 28 U.S.C. § 1362 (granting district courts original jurisdiction over civil actions brought by Indian tribes).
 166. See *Oneida Indian Nation v. County of Oneida*, 414 U.S. 661, 666–67 (1974).
 167. *Oneida*, 470 U.S. at 233, 253–54.
 168. See *City of Sherrill*, 544 U.S. at 202.
 169. See *id.* at 211–12.
 170. *Oneida Indian Nation v. City of Sherrill*, 377 F.3d 139, 156 (2d Cir. 2003).
 171. *Id.* at 213.
 172. See *City of Sherrill*, 544 U.S. at 214.
 173. *City of Sherrill*, 544 U.S. at 214 (emphasis added).
 174. *Id.* at 215.
 175. *Id.* at 219.
 176. See *Oneida Indian Nation Annual Report* (2005) (on file with authors).
 177. *City of Sherrill*, 544 U.S. at 220.
 178. *City of Sherrill*, 544 U.S. at 220.
 179. *Marshak v. Treadwell*, 240 F.3d 184, 193–94 & n.4 (3d Cir. 2001).
 180. *Pro-Football, Inc. v. Harjo*, 415 F.3d 44, 48 (D.C. Cir. 2005)
 181. 15 U.S.C. § 1069 (2010).
 182. 15 U.S.C. § 1065 (2010).
 183. *Harjo*, 415 F.3d at 50; see also *Pro-Football, Inc., v. Harjo*, 565 F. 3d 880, 884 (2009) (quoting *Gull Airborne Instruments, Inc. v. Weinberger*, 694 F.2d 838, 843 (D.C. Cir.1982) (“If only a short period of time elapses between accrual of the claim and suit, the magnitude of prejudice required before suit would be barred is great, if the delay is lengthy, a lesser showing of prejudice is required.”)).
 184. *Id.*, 565 F. 3d at 883.
 185. *Id.*
 186. *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1382 (Fed. Cir. 2009).
 187. *Martek Biosciences Corp.*, 579 F.3d at 1367.
 188. *Id.* at 1380.
 189. *Id.* at 1381.
 190. *Id.*
 191. *Id.* at 1382.
 192. *Ortho-McNeil Pharm., Inc. v. Teva Pharm. Indus., Ltd.*, 344 Fed. App’x. 595, 598-97 (Fed. Cir. 2009).
 193. *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338 (Fed. Cir. 2008).
 194. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1359 (Fed. Cir. 2008).
 195. *Vehicle IP, LLC v. GMC*, 306 Fed. Appx. 574 (Fed. Cir. 2009).
 196. *Mangosoft, Inc. v. Oracle Corp.*, 525 F.3d 1327 (Fed. Cir. 2008).
 197. *Decisioning.com, Inc. v. Federated Dep’t Stores, Inc.*, 527 F.3d 1300 (Fed. Cir. 2008).
 198. *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1099 (Fed. Cir. 2008).
 199. *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1328 (Fed. Cir. 2007).
 200. See, e.g., *Enviroco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1364 (Fed. Cir. 2000) (interpreting whether use of “means” in claim triggered means-plus-function rule).
 201. *In re Buszard*, 504 F.3d 1364, 1366 (Fed. Cir. 2007).
 202. See John Scanlan, *Samuel Johnson’s Legal Thought*, SAMUEL JOHNSON AFTER 300 YEARS 112 (Cambridge Univ. Press 2009).
 203. See, e.g., BEN KLEMENS, *MATH YOU CAN’T USE: PATENTS, COPYRIGHT, AND SOFTWARE* (Brookings Inst. Press 2006).
 204. *Id.*
 205. *Id.*
 206. DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 4 (The University of Chicago Press 2009).
 207. See *Phillips v. AWH Corp.* 415 F.3d 1303 (Fed. Cir. 2005) (en banc).
 208. *Id.*

209. There are some words used routinely in patent claims, such as the transition phrases, like “consisting of,” and “comprising.” Courts do look to earlier decisions interpreting these standard phrases—although some decisions manage to apply them differently to individual patents.

210. See, e.g., JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 199, 256 (Princeton Univ. Press 2008) (discussing how claims in software patents, which often have abstract patent claims that are unclear about what technology they cover, may be read to cover technologies that are unknown at the time the patent is filed, and use broad wording whose meaning might change over time, especially in the fast-moving fields of technology).

211. *Aristocrat Technologies. Austl. Pty Ltd. v. Multimedia Games, Inc.*, 266 Fed. Appx. 942, 946 (Fed. Cir. 2008).

212. See, e.g., *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931 (Fed. Cir. 1990).

213. Patent lawyers used drafting techniques to deal with case law on whether software was patentable. See Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CAL L. REV. 1, 8 (2001) (describing use of “magic words,” to patent software, before Supreme Court recognized software as patentable, by claiming software inventions as “hardware devices, pizza ovens, and other ‘machines.’”).

214. “Software Patents: A Time for Change?,” MIT and Boston University School of Law, November 16–17, 2006, program available at <http://www.researchoninnovation.org/swconf/>.

215. Brief for the Software Freedom Law Center as Amicus Curiae Supporting Respondents, *Bilski v. Kappos*, 130 S. Ct. 3218 (2010).

216. See Jeanne Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539 (2009) (arguing for improvements on disclosure in patents); see also Dan Burk, *The Role of Patent Law in Knowledge Codification*, 23 BERKELEY TECH. L.J. 1009 (2008) (discussing how considerations of disclosure’s role in codifying knowledge could play into analysis of patent law doctrine).

217. *Claim Drafting to Hearings: Judicial And Litigation Perspectives, Tactics for Mastering Markman Issues*, sponsored by Advanced Legal Studies Program of Suffolk University Law School, Boston Patent Law Association and the Social Law Library (October 20, 2006), <http://www.law.suffolk.edu/academic/als/coursedetail.cfm?cid=519>.

218. See Stephen McJohn, *Patents: Hiding from History*, 24 SANTA CLARA COMPUTER & HIGH TECH. L.J. 961 (2008).

219. Jeffrey L. Snow, Partner, K&L Gates, *Patent Law Presentation Claim Drafting Issues from the Litigator’s Point of View, Tactics for Mastering Markman Issues* (October 20, 2006).

220. See Dennis Crouch, *Philips v. AWH Takes A Casualty: ‘Interface’ Construed as ‘Parallel Bus Interface,’* PATENTLY-O (May 11, 2006), http://www.patentlyo.com/patent/2006/05/philips_v_awh_t.html.

221. See Dennis Crouch, *Use of Phrase ‘This Invention’ Limits Claim Scope,* PATENTLY-O (June 25, 2006), http://www.patentlyo.com/patent/2006/06/cafc_use_of_phr.html.

222. *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1354 (Fed. Cir. 2006). See also *AstraZeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1339–40 (Fed. Cir. 2004) (“Where the general summary or description of the invention describes a feature of the invention (here, micelles formed by the solubilizer) and criticizes other products (here, other solubilizers, including co-solvents) that lack that same feature, this operates as a clear disavowal of these other products.”).

223. See, e.g., *On Demand Mach. Corp. v. Ingram Indus.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006) (“Although we agree with the district court that the Ross invention does not concern itself with whether the ‘customer’ reads the book or obtains it for resale, the focus of the Ross patent is immediate single-copy printing and binding initiated by the customer and conducted at the customer’s site.”).

224. See Sean B. Seymore, *The Enablement Pendulum Swings Back*, 6 NW. J. TECH. & INTELL. PROP. 278, 282–84 (2008).

225. *Pharm. Res., Inc. v. Roxane Labs., Inc.*, 253 Fed. Appx. 26 (Fed. Cir. 2007) (“surfactant” not enabled with just 3 working examples); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371 (Fed. Cir. 2007); *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2007) (claim to method of using genetic engineering to make plant cells resistant to herbicide was not fully enabled, where at relevant time method only worked for some categories of plant cells). See also Kenneth Canfield, *The Disclosure of Source Code in Software Patents: Should Software Patents be Open Source?*, 7 COLUM. SCI. & TECH. L. REV. 1 (2006).

226. *Matter of Roman Cleanser*, 43 B.R. 940, 942 (Bankr. Mich., 1984) (holding security interest in trademarks perfected by state law filing); *In re Cybernetic Services, Inc.*, 252 F.3d 1039, 1045 (9th Cir. 2001) (holding security interest in patents perfected by state law filing).

227. *In re Peregrine Entertainment, Ltd.*, 116 B.R. 194, 199–200 (C.D. Cal., 1990).

228. *In re World Auxiliary Power Co.*, 303 F.3d 1120 (9th Cir. 2002).

229. *In re Coldwave Sys., LLC*, 368 B.R. 91, 98 (Bankr. D. Mass. 2007).

230. U.C.C. § 9-313 (2005).

231. Atul Gawande, *The Score: How Childbirth Went Industrial*, THE NEW YORKER (October 9, 2006).

232. See DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 66 (The Univ. of Chicago Press 2009) (describing widespread agreement that disclosure function is “subordinate” in patent theory).

233. See 35 U.S.C. § 154 (2010).

-
234. See 17 U.S.C. § 302 (2010).
 235. See 17 U.S.C. § 304 (2010).
 236. Beckerman-Rodau, *supra* note 34.
 237. See JERRY COHEN & ALLEN GUTTERMAN, *TRADE SECRETS: PROTECTION AND EXPLOITATION* (BNA Books 1998).
 238. Clarissa Long, Patent *Signals*, 69 U. CHI. L. REV. 625, 636-37 (2002) (describing how patents can serve to signal the strength of a company).
 239. See Uniform Trade Secrets Act § 1(4)(ii) (requiring reasonable security measures for trade secret protection).
 240. Uniform Trade Secrets Act § 1(4)(i). (providing for termination of trade secret if disclosed to public).
 241. See State ex rel. Perrea v. Cincinnati Pub. Sch., 123 Ohio St. 3d 410 (2009).
 242. State Analysis, Inc. v American Financial Services Assoc., 621 F. Supp. 2d 309, 321 (E.D. Va. 2009).
 243. Faiveley Transport Malmo Ab. v. WABTEC Corp., 559 F.3d 110, 113 (2d Cir. 2009) (citing *In re Faiveley Transp. Malmo AB*, 522 F. Supp. 2d 639, 640 (S.D.N.Y. 2007)).
 244. Willem P.C. Stemmer, *How To Publish DNA Sequences With Copyright Protection*, 20 NATURE BIOTECHNOLOGY 217 (March 1, 2002).
 245. See Eliot Van Buskirk & David Kravets, *Judge Halts Online Sale of Beatles Songs*, WIRED (Nov. 5, 2009), <http://www.wired.com/epicenter/2009/11/bluebeat-claims-to-own-new-copyrights-to-old-beatles-songs/>.
 246. See Honeywell Int'l, Inc. v. United States, 596 F.3d 800 (Fed. Cir. 2010) (rejecting argument that license from patent owner excused infringement that had occurred earlier when patent was owned by a different party); see also Davis v. Blige, 505 F.3d 90 (2d Cir. 2007) (rejecting argument that post-infringement license from joint author could negate the other joint author's cause of action for copyright infringement).
 247. Widely attributed to Frank Zappa.
 248. See Computer Fraud and Abuse Act of 1986, Pub. L. no. 99-474, 100 Stat. 1213 (codified as amended at 18 U.S.C. § 1030 (2008)) (amended in 1994, 1996, 2001, and 2008).
 249. *Id.* See also Charlotte Decker, *Cyber Crime 2.0: An Argument to Update the United States Criminal Code to Reflect the Changing Nature of Cyber Crime*, 81 S. CAL. L. REV. 959, 980 (2008).
 250. Orin S. Kerr, *Cybercrime's Scope: Interpreting 'Access' and 'Authorization' in Computer Misuse Statutes*, 78 N.Y.U. L. REV. 1596, 1604 (2003).
 251. W. Wayt Gibbs, *How Hackers Can Steal Secrets from Reflections*, SCIENTIFIC AMERICAN (May 2009).
 252. United States v. Morris, 928 F.2d 504 (2d. Cir. 1991).
 253. *Morris*, 928 F.2d at 505.
 254. *Id.*
 255. Shurgard Storage Centers, Inc. v. Safeguard Self Storage, Inc., 119 F. Supp. 2d 1121 (W.D. Wash. 2000).
 256. EF Cultural Travel BV v. Explorica, Inc., 274 F.3d 577 (1st Cir. 2001).
 257. See Kerr, *supra* note 250.
 258. The Supreme Court has recently narrowed the construction of the "honest services" provision in the context of nongovernmental defendants. See *Skilling v. United States*, 130 S. Ct. 2896 (2010).
 259. HARVEY SILVERGATE, *THREE FELONIES A DAY: HOW THE FEDS TARGET THE INNOCENT* (Encounter Books, 2009).
 260. U.S. v. Lori Drew, No. CR 08-0582-GW, 2009 U.S. Dist. LEXIS 85780 (C.D. Cal. 2009).
 261. *Id.*
 262. *Id.*
 263. Mortgage Now Inc. v. Stone, No. 3:09cv80/MCR/MD, 2010 U.S. Dist. LEXIS 9887 (N.D. Fla.2009).
 264. 17 U.S.C. § 109 (2010).
 265. *Id.*
 266. 17 U.S.C. §§ 106, 109 (2010).
 267. See, e.g., Charles R. McManis, *The Privatization (or 'Shrink-Wrapping') of American Copyright Law*, 87 CAL. L. REV. 173 (1999).
 268. See 17 U.S.C. §§ 1201-05 (2010).
 269. See 17 U.S.C. §§ 109, 602(a) (2010); *Quality King Distribs. v. L'Anza Research Int'l*, 523 U.S. 135 (1998).
 270. See, e.g., *Omega S.A. v. Costco Wholesale Corp.*, 541 F.3d 982 (9th Cir. 2008).
 271. *Id.*
 272. BENJAMIN NATHAN CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* 23 (1921), (quoting MUNROE SMITH, *JURISPRUDENCE* 21 (1909)).
 273. See, e.g., *Vernor v. Autodesk, Inc.*, 555 F. Supp. 2d 1164 (W.D. Wash. 2008) (software reseller obtained declaratory judgment that first sale doctrine authorized resale of software, after online auction delayed by take down notice, and after

threats of further action). The district court opinion, however, was reversed, suggesting that at least in the Ninth Circuit, where software is delivered subject to a license it is not sold even if the copy is paid for and never returned. *See Vernor v. Autodesk, Inc.*, 2010 U.S. App. LEXIS 18957 (9th Cir. 2010).

274. *Id.*

275. *See Quanta Computer Inc. v. LG Electronics, Inc.*, 128 S. Ct. 2109 (2008).

276. The tide may turn on the rule that first sale does not apply to imported copies, even where authorized. The Supreme Court has granted certiorari in a case involving the issue. *See Costco Wholesale Corp. v. Omega S.A.*, 130 S. Ct. 2089 (2010).

277. *See, e.g., Brad Stone, Want to Copy iTunes Music? Go Ahead, Apple Says*, NEW YORK TIMES (Jan. 6, 2009), <http://www.nytimes.com/2009/01/07/technology/companies/07apple.html?fta=y>.

278. *See Mark A. Lemley, Intellectual Property and Shrinkwrap Licenses*, 68 S. CAL. L. REV. 1239 (1995).

279. William H. Henning, *Amended Article 2: What Went Wrong?*, 11 DUQ. BUS. L.J. 131 (2009) ("Article 2 is the only one of the original articles that has not been successfully updated since the first widely adopted version of the U.C.C."); Fred H. Miller, *Uniform Commercial Code Article 2 On Sales of Goods and the Uniform Law Process: A True Story of Good v. ?*, 11 DUQ. BUS. L.J. 143 (2009).

280. Cory Doctorow, *Thomas Edison's crappy, price-fixing EULA*, BOINGBOING (January 13, 2009), <http://boingboing.net/2009/01/13/thomas-edisons-crapp.html>.

281. *See Copyright Act of 1909*, §21; *Estate of Martin Luther King, Jr., v. CBS*, 194 F.3d 1211 (11th Cir. 1999).

282. 17 U.S.C. § 102 (2010).

283. *See* 17 U.S.C. § 401 (2010).

284. 17 U.S.C. § 102 (2010).

285. *See Feist Publications, Inc., v. Rural Telephone Service Co.*, 499 U.S. 340 (1991).

286. ERIC RAYMOND, *THE NEW HACKER'S DICTIONARY* (The MIT Press 3d ed. 1996).

287. *See* 35 U.S.C. §§ 351-376 (2010); Jerome H. Reichman & R. Cooper Dreyfuss, *Harmonization without Consensus: Critical Reflections on Drafting a Substantive Patent Law Treaty*, 57 DUKE L.J. 85, 88 (2007) ("The Patent Cooperation Treaty and various regional agreements, such as the Convention on the Grant of European Patents, embody many important procedural advances.").

288. *See* 15 U.S.C. § 1141 (2010).

289. *See* 17 U.S.C. § 302 *et seq.* (2010)

290. *See* 17 U.S.C. § 412 (2010).

291. *See* 17 U.S.C. § 411 (2010). The Supreme Court has taken cert. in a case raising the issue, whether the requirement of registration before instituting an infringement action goes to subject matter jurisdiction. *See Reed Elsevier v. Muchnick*, No. 08-103, 2010 U.S. LEXIS 2202 (2010).

292. *See, e.g., B. ZORINA KHAN, THE DEMOCRATIZATION OF INVENTION: PATENTS AND COPYRIGHTS IN AMERICAN ECONOMIC DEVELOPMENTS, 1790-1920* (Cambridge Univ. Press 2005) (economic analysis of thousands of patents to study the role of intellectual property in economic development of the early United States).

293. *See* 17 U.S.C. § 407 (2010).

294. *See Darden v. Peters*, 488 F.3d 277 (4th Cir. 2007) (upholding decision of Copyright Office to deny registration to public domain map with colors added).

295. *See Mass. Museum of Contemporary Art Found., Inc. v. Buchel*, 593 F.3d 38 (1st Cir. 2010).

296. *Id.* at 44.

297. *See* 17 U.S.C. § 106A (2010).

298. *See Buchel*, 593 F.3d at 38.

299. *See, e.g., David S. Olson, First Amendment Interests And Copyright Accommodations*, 50 B.C. L. Rev 1393, 1406 (2009) ("Much ink has been spilled and many pixels lighted detailing the powerful changes computers, cheap memory, digitization, the Internet, and increasing broadband adoption have wrought in the way that content is created and copyright enforcement challenged."); Mary L. Mills, Note, *New Technology and the Limitations of Copyright Law: An Argument for Finding Alternatives to Copyright Legislation in an Era of Rapid Technological Change*, 65 CHI.-KENT L. REV 307 (1989) (describing challenges copyright law faces in light of changing technologies).

300. BENJAMIN KAPLAN, *AN UNHURRIED VIEW OF COPYRIGHT* (Columbia University Press 1967).

301. KAPLAN, *supra* note 300, at 119-24.

302. *Id.* at 119.

303. *Id.* at 120.

304. *Id.*

-
305. *Id.*
306. *Id.* at 120–21.
307. KAPLAN, *supra* note 300, at 122–23.
308. *Id.*
309. Oren Bracha, *Standing Copyright on Its Head? The Googlization of Everything and the Many Faces of Property*, 85 TEX. L. REV. 1799 (2007).
310. See 17 U.S.C. §§ 1201-05 (2010) (containing anti-circumvention provisions, added to the Copyright Act in 1998 and provide new protections to copyright holders).
311. See Margot Kaminski, *The Origins and Potential Impact of the Anti-Counterfeiting Trade Agreement*, 34 YALE J. INT'L L. 247 (2009); Charles McManis, *The Proposed Anti-Counterfeiting Trade Agreement: Two Tales of a Treaty*, 46 HOUS. L. REV. 1235 (2009).
312. KAPLAN, *supra* note 300.
313. See, e.g., HAL'S LEGACY: 2001'S COMPUTER AS DREAM AND REALITY (David G. Stork, ed. 1997).