THE ECONOMICS AND SOCIALITY OF SHARING INTELLECTUAL PROPERTY RIGHTS

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Intellectual property law assumes that people need monetary incentives to create; to this end, it enables the formation of markets for intellectual works. Remarkably, however, sharing—i.e., socially mediated gifting without any expectation of payment—may work much better than markets for distributing the bulk of intellectual property. This Article explains why. While markets work by using money as the medium of exchange, money is actually a poor incentive for creative labors. Emerging research shows that payment in the currency of gratitude and social validation is a far more effective form of encouragement, and it is something sharing is exquisitely adapted to provide. In addition, sharing can offer a surprising efficiency advantage over markets by lowering net transaction costs.

Despite its virtues, sharing of intellectual property rights has received scant attention in the literature. Thus, this Article provides a comprehensive account of intellectual property sharing, explaining what motivates people to share, how sharing compares to markets, what barriers may inhibit sharing, and how to overcome those barriers.

The analysis provided here yields a variety of insights about the functioning of real-world transactional systems that deal in intellectual property entitlements. For example, the contemporary stock photography market appears to thrive despite the fact that most photographers receive only negligible remuneration. This Article resolves the paradox by showing that this "market" is better characterized as a dysfunctional sharing scheme—one that could be made more efficient by being transformed into an explicitly social, non-monetary enterprise. In addition, this Article examines Creative Commons, a nonprofit program that offers a suite of formal, standardized licenses to surrender selected copyright entitlements. This Article uncovers how the design of Creative Commons is not aligned with people's natural motivations to share, but how, with some modification, it could be. Finally, this Article puts forward a different model for the distribution of rights to intellectual works: informal person-to-person sharing, which has great potential to build our society's creative wealth.

INTRODUCTION

As we have subjected intellectual property to increasingly intricate economic reasoning, we seem to have glossed over one of the most fundamental, simple, and charming things about it: people are often happy to give it away for free. In other words, intellectual property is widely shareable.

Sharing is ubiquitous in our world, yet it is something of a wallflower in the scholarly literature. To the extent people let others use property without charge—that is, as a friendly, gratuitous favor—it seems implicitly regarded as legally uninteresting and economically unimportant. The focus is on markets: bargained-for exchanges in which terms are set and prices are agreed upon. Legal scholarship aimed at improving economic efficiency generally explores how markets can be tweaked, such as with regulations forcing sellers to internalize negative costs or providing buyers with more information. Discussions of intellectual property tend to take place along analogous lines, examining the possibilities of compulsory licenses, enlarged fair use defenses, and so on. Sharing, as a non-market form of exchange, goes overlooked.

This Article argues that sharing has a potentially enormous role to play in the production, distribution, and utilization of intellectual property. It turns out that under many circumstances, sharing is significantly more efficient than markets. In fact, sharing makes possible a wide variety of transactions that would simply go unrealized in the marketplace.

The idea that sharing could be economically efficient may be particularly unexpected since the entire point of intellectual property law is to take

something that is naturally shared—the output of the mind—and transform it into a synthetic form of property, which can then be bought and sold.[1] The longstanding assumption is that markets for intellectual goods—like markets generally—will properly incentivize people to produce and distribute. I wish to turn that conventional wisdom on its head by showing, first, that markets are highly inefficient for the bulk of intellectual goods being produced today and, second, that social sharing holds great promise for turning latent value into realized wealth.

To understand how this could be true, let's look at creative works, which will be my primary example throughout this Article. Today's intellectual property system automatically vests intellectual property entitlements—primarily in the form of copyright—in virtually all newly produced creative works.[2] That includes photos, videos, audio recordings, and text. These rights attach whether the work was produced by a massive media conglomerate or a cell-phone-wielding teenager. It's important to observe that these works vary greatly in value. Many works are essentially worthless. Some works, on the other hand, have strong potential for commercial success. Yet a great number of works are somewhere between these two economic extremes. These in-between works are neither valueless nor lucrative. It is for these works that sharing has such great potential: such works are not so valuable that they are worth exploiting commercially, but they are valuable enough that they are worth sharing with others.

One might wonder what would motivate someone to share and get nothing in return. Yet sharing is not an empty proposition for the sharer. People get a feeling of satisfaction and a sense of social connectedness out of sharing.[3] What is more, these psychological rewards are significant. We are, after all, social creatures.

Sharing has limits, of course. No one would prefer a vague and fleeting sense of fulfillment to a million dollars. Yet this is exactly the point: intellectual property that can be licensed for a significant amount of money is commercializable. Intellectual property that is not commercializable, however, may still be valuable, and if so, it may be shareable.

How could it be that a work worth sharing is not also worth selling—even if it is for only a little money? The explanation is transaction costs. Selling something is a hassle. A price must be specified, terms must be set, and payment must be collected. In other words, transaction costs are high. Sharing, by contrast, is easy. A vague sense of goodwill takes the place of all the quantification and particularization that is required in a sales transaction. That keeps transaction costs low. These low costs permit the occurrence of a wide swath of transactions that would be too expensive to conduct in the market.[4]

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[1] *See infra* Part I.A.

[2] *See infra* notes 22-23 and accompanying text.

[3] *See infra* Part IV.B.

[4] *See infra* notes 77-79 and accompanying text.

The simplest kind of intellectual property sharing—allowing others to view a work—has now become ubiquitous online. This kind of sharing is the sine qua non of social media—blogs, Twitter, YouTube, Flickr, Instagram, and the like. We can call this "access-type sharing," since it is sharing that allows others to access but not use the shared work. The success of this kind of sharing shows just how mistaken the intellectual property system is in its foundational assumption that people need monetary incentives to produce creative works. But access-type sharing is a limited form of sharing. It does not increase people's opportunities to produce new works by building on the work of others. Uploading a video to YouTube means that anyone in the world is allowed to see the video, but it does not mean that others can use clips from that video to create new videos.

When a creator's intellectual work is not merely viewed, but is used by others, we can call this "reuse-type sharing." Reuse-type sharing, which is the focus of this Article, is a much more complex and interesting proposition than access-type sharing. It raises a host of difficult questions. Under what circumstances would a creator allow the reuse of a work? With whom is the creator comfortable sharing? For what purpose? We might, for instance, imagine that a particular creator would be willing to share a video clip for reuse in a documentary film but not a political campaign ad. This Article discusses these complications and explores ways of resolving them to allow a maximal number of efficient sharing transactions to take place. This is a worthwhile task, because such sharing—when replicated widely enough—can reclaim significant value from intellectual property that would otherwise be squandered.

Overall, the aim of this Article is to provide a thorough account of the economics and sociality of sharing intellectual property. In particular, I will explore how much of the value lost by the intellectual property system can be reclaimed through sharing, and I will suggest practical means for doing so.

Looking ahead, in Part I, I provide some background on relevant intellectual property law, with a special emphasis on copyright law, which is my main example of an intellectual property regime that accumulates a shareable surplus. In Part II, I set out the benefits of sharing intellectual property, showing why it is so perfectly adapted to giving creators what they want and how it exhibits such remarkable efficiencies. In Part III, I look at markets as an existing economic mode for addressing intellectual property surplus, and I compare these markets with sharing. Within Part III, I take a particular look at the curious market for stock photography, which provides a penetrating illustration of the inefficiency—and even absurdity—that can be exhibited by markets for surplus intellectual goods. In Part IV, I discuss mechanisms for sharing, including person-to-public sharing regimes such as public-domain dedication and the Creative Commons project, as well as informal person-to-person sharing. Part V explores applications of the foregoing analysis and extends it to other regimes of intellectual property, such as design rights and patents.

I. THE CONTEXT OF INTELLECTUAL PROPERTY LAW

This Part reviews certain relevant concepts of intellectual property law. The first section explains how intellectual property is different, as an economic matter, from other types of property. This, in turn, clarifies why intellectual property law is widely seen as a justified exception to free-market principles. The next two sections discuss intellectual property doctrines that are recurrent examples in this article—copyright law and the right of publicity.

A. *How Intellectual Works Are Economically Distinct*

The salient economic features of intellectual property, as a general matter, are that it is non-rivalrous and non-excludable.[5] This means that an unlimited number of people can simultaneously use the property (non-rivalrousness), and there is not much the owner of the property can do to prevent others from using it (non-excludability). So, if you have a non-rivalrous and non-excludable good, that means that everybody can use it, and if they want to use it, there is generally nothing you can do to stop them. Non-excludability and non-rivalrousness are closely related, but they are distinct concepts. For instance, not everything that is non-excludable is non-rivalrous.[6] Likewise, not everything that is non-rivalrous is non-excludable.[7] Nonetheless, the characteristics often occur together.

Rivalrousness is fundamental to much of the study of economics.[8] As a discipline, economics concerns itself with limited resources, and resources ordinarily are limited because of their rivalrous nature. Oil is an example. Economic theory has much to say about how to get a barrel of oil into the hands of the person who can make the best use of it, as opposed to the person who could make the second-best use of it. Thus, economic modeling might

[5] *See generally* David W. Barnes, *Congestible Intellectual Property and Impure Public Goods*, 9 NW. J. TECH. & INTELL. PROP. 533, 533 (2011) (expounding on the thesis that intellectual property is both non-rivalrous and non-excludable).

[6] A private island skirted by a wide sandy beach in a lake busy with recreational swimmers and boaters might be largely non-excludable, since it could be prohibitively expensive or destructive to fence it in. But it would not be non-rivalrous—as with all real property, when one person occupies a particular square foot of land, no one else can stand in the same spot, at least not until the first person moves—or is pushed. Hence, it is "rivalrous."

[7] Fire, for example, is non-rivalrous, yet it can be excludable. Suppose there are several factions of survivors from a shipwreck on a deserted island, and one group has succeeded in starting a fire. The fire is non-rivalrous because the group could allow other groups to light a makeshift torch, which would share the fire without depleting any of it. Yet the fire is excludable, because the group can prevent others from accessing the fire by physically guarding it.

[8] Instead of "rivalrousness," economists often say "rivalry," but since the term "rivalry" already has a well-established and contrary meaning in everyday speech, I use "rivalrousness" to avoid confusion. Similarly, economists often use "rival" in place of "rivalrous." I have opted for "rivalrous" for the same reasons.

prescribe that a given quantity of petroleum be refined into jet fuel rather than kerosene for a portable heater. But as a matter of economics, it would be pointless to discuss the benefits of allowing two people to simultaneously make the same quantity of oil into both jet fuel and kerosene.

Intellectual property is fundamentally different. More than one person can simultaneously possess and use an intellectual work. An often-quoted passage from the writings of Thomas Jefferson colorfully explains this:

> If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.[9]

The flipside of non-rivalrousness is "free riding"—i.e., the phenomenon of one or more persons benefiting costlessly from the labor and creativity of others. Free riding is often spoken of derisively, particularly by proponents of expanding the scope of intellectual property laws.[10] But there is nothing turpitudinous about free riding. In fact, American courts have repeatedly upheld free riding on the creative and innovative labors of others to be a good thing.[11] Free riding is perhaps the purest form of economic efficiency. The problem with free riding—to the extent there is one—is what the potential for free riding does to the incentives for engaging in intellectual labor: if creators anticipate that they will not accrue the full economic benefit of their creations, they may neglect to engage in creative labors at optimal levels.

Intellectual property law can be understood as a set of legal interventions interposed because of the incentive problems associated with the potential for

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[9] Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), *in* 13 THE WRITINGS OF THOMAS JEFFERSON 326, 333-34 (Thomas Jefferson Memorial Ass'n ed., 1853) (1903). Note that in this passage Jefferson also speaks to the non-excludability of intellectual property. *See also* Graham v. John Deere Co. of Kan. City, 383 U.S. 1, 8-9 (1966) (quoting passage and elaborating on Jefferson's views).

[10] *Cf.* David J. Franklyn, *Debunking Dilution Doctrine: Toward a Coherent Theory of the Anti-Free-Rider Principle in American Trademark Law*, 56 HASTINGS L.J. 117, 133 (2004) (citing to multiple trademark cases in asserting that "judges are just as likely as lay persons to conclude that free-riding is wrong in and of itself").

[11] *See, e.g.*, Dastar Corp. v. Twentieth Century Fox Film Corp., 539 U.S. 23, 33 (2003) (discussing the general "right to copy"); Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 146 (1989) (recognizing that "imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy"); *In re* Morton-Norwich Prods., 671 F.2d 1332, 1336 (C.C.P.A. 1982) (describing "the judicial theory that there exists a fundamental right to compete through imitation of a competitor's product, which right can only be *temporarily* denied by the patent or copyright laws").

free riding. In understanding the nature of the intervention, it is important first to note that intellectual property law does nothing to squelch the non-rivalrous nature of intellectual works. Nor, by anyone's measure, should it. Creators hoping to profit from their intellectual productivity depend upon the non-rivalrous nature of intellectual property to allow them to maximize profits by selling the fruits of their labor over and over again.

The non-excludability of intellectual works, however, does manage to interrupt the ability of creators to profit from their works. The importance of non-excludability for intellectual property is easy to understand. Tangible property can be excluded from others by physical means, such as a fence or a locked drawer. But such barriers will not prevent people from making unauthorized use of intellectual property. As intangible stuff, intellectual property is generally unsusceptible to tangible methods of confinement. Once intellectual property is distributed or even displayed, it is made available for copying. Thus, the law is interposed to do what physical barriers cannot.[12] Boiled down to its essence, the function of intellectual property law is to make non-excludable works excludable.

B. *Copyright's Simple Prescription*

A copyright is a form of legal, institutionalized monopoly in which authors and artists are granted exclusive rights in their expressive works. Copyright reflects the belief that the free-market system is a failure when it comes to the production of creative works. If competition for copies of intellectual works brings prices down to zero, the theory goes, then creators will lack the proper incentive to create new intellectual works.[13] Thus, the aim of copyright is to build economic wealth for society by providing monopoly entitlements as an inducement to creators.[14]

The copyright system, as a whole, is structurally very simple. Regardless of what kind of expressive work is involved—song, encyclopedia, ballet,

[12] *Cf.* James Grimmelmann, *The Ethical Visions of Copyright Law*, 77 FORDHAM L. REV. 2005, 2005 (2009) ("We must constantly play a game of practical metaphysics to grant legal rights over things that can't be seen or touched. When the legal system says that this assembly of gears and levers infringes on that set of marks on a piece of paper, it's calling an abstraction into being.").

[13] This is an assumption with which I disagree. *See generally* Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 FLA. ST. U. L. REV. 623 (2012) [hereinafter Johnson, *Incentive Fallacy*]. Nonetheless, it is the principal economic idea of intellectual property law in general, including patent law, copyright law, trade secret law, and many forms of *sui generis* protection. It should be noted that trademark law has a distinct economic rationale.

[14] *See, e.g.*, Alfred C. Yen, *Restoring the Natural Law: Copyright as Labor and Possession*, 51 OHIO ST. L.J. 517, 517 (1990) (describing the Supreme Court's support of the theory "that copyright exists solely to provide economic incentives for the production of useful works" (citing Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984))).

photograph, poem, or major motion picture—the application of copyright law is almost entirely uniform.[15] No one is allowed to copy the work or incorporate it into another work—in whole or in part—without the permission of the owner.[16] All works are subject to a fair use exemption that serves free speech interests,[17] but beyond that, copyright law prevents unauthorized persons from doing just about anything with a copyrighted work other than viewing it privately and re-selling lawfully manufactured copies.[18]

The history of copyright law is marked by two trends. First, the subject matter of what can be copyrighted has steadily expanded. Second, the term of protection for copyrighted works has steadily lengthened.

When American copyright started out in the early days of the country's history, copyright covered "maps, charts, and books," and the term of copyright protection lasted 14 years, with the possibility for the author to renew for another 14 years.[19] Today, whether the creative work is a blog post, movie, computer program, photo, multiple-choice test, or any of a nearly endless variety of expressive creations, copyright protection lasts for the remainder of the natural life of the author plus 70 years.[20] In the case of works by corporations or individuals not publishing under their real name, protection lasts for 95 years after publication or 120 years after creation—whichever is sooner.[21] In sum, the history of copyright is that more and more kinds of creative works have been swept up into a system that locks in exclusive rights for longer and longer periods of time.

Adding to the expansive nature of the copyright regime is that copyright protection has the peculiar feature of attaching to your work whether you want it to or not. That is, the application of copyright law is automatic. Automatic vesting is a central requirement of the Berne Convention, an international

[15] Very isolated instances of differential treatment include the right to create "cover versions" of copyrighted songs and the right to make two-dimensional representations of copyrighted architectural works that are viewable from a public place. *See* 17 U.S.C. §§ 115, 120 (2012).

[16] *See id.* § 106.

[17] *Id.* § 107.

[18] *See id.* §§ 106, 109 ("[T]he owner of a particular copy or phonorecord lawfully made under this title, or any person authorized by such owner, is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of that copy or phonorecord.").

[19] Act of May 31, 1790, ch. 15, 1 Stat. 124, 124 (codified as amended at 17 U.S.C. §§ 101-1332).

[20] *See* 17 U.S.C. § 302 ("Copyright in a work created on or after January 1, 1978, subsists from its creation and, except as provided by the following subsections, endures for a term consisting of the life of the author and 70 years after the author's death.").

[21] *Id.* ("In the case of an anonymous work, a pseudonymous work, or a work made for hire, the copyright endures for a term of 95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first.").

treaty dating back to 1886.[22] Under the Berne Convention, the author need not place a copyright notice on the work, nor register it with any government office.[23] Copyright vests immediately upon creation. While the Berne Convention has long been the dominant set of copyright minima under international law, its extension to the United States is relatively recent. The U.S. Congress passed the Berne Convention Implementation Act in 1988,[24] causing the United States to eliminate the notice requirement as a prerequisite for copyright protection.[25] After March 1, 1989, all creators—regardless of their circumstances—have automatically received copyrights on all newly created works.[26] Thus, while copyright was once an "opt in" regime of legal protection, it is now an "opt out" system.[27] This means that copyright law automatically creates a barrier to the reuse of recently created works—regardless of whether the creator cares to exclude others from the work or not.

C. *The Right of Publicity*

Even where copyright is not a barrier to using an intellectual work, the right of publicity, an emergent form of intellectual property, can be. Subject to many far-ranging exceptions, the right of publicity provides natural persons with a monopoly entitlement over the commercial use of their identity.

Modern claims for right-of-publicity infringement and related ideas of invasion of privacy developed from tort doctrine, with the distinction between publicity rights and privacy rights coming about mid-century.[28] Though its roots are in tort doctrine, the right of publicity has been increasingly regarded

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[22] Berne Convention for the Protection of Literary and Artistic Works, art. 5, Sept. 9, 1886, S. TREATY DOC. NO. 99-27, 828 U.N.T.S. 221 (stating that authors' "enjoyment and exercise of these rights shall not be subject to any formality").

[23] *Id.*; *see also* S. REP. NO. 100-352, at 11 (1988).

[24] Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853-61.

[25] *Id.* § 7 (codified as amended at 17 U.S.C. § 401 (2012)) (replacing "shall" with "may" in 17 U.S.C. § 401, which resulted in the removal of the notice provision from copyright law).

[26] *See id.* § 13; WIPO, Treaties and Contracting Parties: Berne Convention, http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_id=15, *archived at* http://perma.cc/5RWF-UCT2.

[27] For a discussion of the effect of the default application of copyright, see LAWRENCE LESSIG, FREE CULTURE 287-91 (2004).

[28] *See* Samuel D. Warren & Louis D. Brandeis, *The Right to Privacy,* 4 HARV. L. REV. 193, 196 (1890) (arguing for a recognition in tort law of a right to privacy); M.C. Slough, *Privacy, Freedom, and Responsibility,* 16 U. KAN. L. REV. 323, 325-27 (1968) (discussing the seminal importance of the Warren & Brandeis article); William L. Prosser, *Privacy*, 48 CAL. L. REV. 383, 389 (1960) (distinguishing among four different privacy torts, including one for a publicity-rights action for "appropriation"); Haelan Labs., Inc. v. Topps Chewing Gum, Inc., 202 F.2d 866, 868 (2d Cir. 1953) (recognizing a tort cause of action for violation of the "right of publicity").

over time as a property right.[29] This doctrinal drift is problematic because the right of publicity blossomed into a species of intellectual property largely without any well-articulated rationale.[30] Indeed, much of the rhetoric commonly used to justify publicity rights can be labeled as tautological.[31] Notably, the right of publicity is not usually justified on the basis of an economic incentive theory.[32] Yet it is also true that, despite being a direct descendant of tort law, there is generally no attempt to justify the right of publicity on a theory of injury.[33]

Half a century after its creation, the right of publicity has been widely explored in the courts, but its contours remain hazy. The habitual blackletter formulation of the right of publicity is that persons have an exclusive right to the commercial exploitation of their names, faces, voices, and other indicia of identity.[34] What exactly that means is frequently unclear. Cases can be very hard to predict. But the practical effect of the right of publicity is that any time a person is identifiably depicted in a photograph, sound recording, or other work, and that work is being used commercially, the right of publicity raises the specter of potential liability. Like copyright, the right of publicity attaches automatically, without any need for the claimant to provide a notice or file a registration.

II. THE BENEFITS OF SHARING INTELLECTUAL PROPERTY

The benefits of sharing intellectual property spring from a variety of factors. First, intellectual property law, as currently configured, creates a number of inefficiencies that a sharing regime can remedy. Second, much of intellectual property is shareable in a technical sense, because it exhibits certain technical characteristics that cause it to be unfit for distribution through markets. Third, the social sciences literature points out that money is, in general, a poor

[29] *See generally* Stacey L. Dogan & Mark A. Lemley, *What the Right of Publicity Can Learn From Trademark Law*, 58 STAN. L. REV. 1161, 1167-75 (2006) (describing the evolution of the right of publicity from a narrow tort privacy doctrine to a robust, assignable property right).

[30] *See, e.g.*, Michael Madow, *Private Ownership of Public Image: Popular Culture and Publicity Rights*, 81 CAL. L. REV. 127, 134 (1993) (arguing that that the right of publicity became doctrinally ingrained "without a systematic, theoretically persuasive case ever having been made for recognition of an independent property-like right of publicity").

[31] *See* Mark F. Grady, *A Positive Economic Theory of the Right of Publicity*, 1 UCLA ENT. L. REV. 97, 107-09 (1994).

[32] *See* Dogan & Lemley, *supra* note 29, at 1162 (indicating "the elusiveness of a theoretical justification for the right of publicity").

[33] *Cf.* Andrew T. Coyle, Note, *Finding a Better Analogy for the Right of Publicity*, 77 BROOK. L. REV. 1133, 1133 (2012) ("Neither courts nor scholars have accepted a uniform theoretical foundation for the right of publicity.").

[34] *See, e.g.*, RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 46 (1995) (espousing liability for the appropriation of another's identity for trade purposes where there is no consent).

motivator for creative and innovative labors; sharing, on the other hand, provides the kinds of non-monetary social and psychological rewards that are uniquely suited for spurring the production of intellectual goods.

A. *Exploitable Economic Inefficiencies*

The current system of intellectual property entitlements, while intended to remedy an inefficiency of the free market, gives rise to numerous inefficiencies itself. There are three inefficiencies I want to highlight in order to show the promise of intellectual property sharing: (1) overkill loss, (2) the multiplying effects of the availability of workparts, and (3) the outport effect.

1. Overkill Loss

As discussed above, copyright instantly and automatically applies to every copyrightable work as soon as it is created.[35] This means that copyright necessarily covers all works for which creators do not care about having monopoly rights. Thus, as a whole, copyright law is overkill. So long as there are at least some beneficially usable works being needlessly subjected to intellectual property encumbrances, there is at least some loss. And clearly, there are many such works.

Every photo and video taken with a cellphone, for instance, is subject to copyright. Yet it is not plausible to believe that more than a relative handful were taken because of an incentive supplied by copyright. A great number of the photos and videos for which the copyright incentive was irrelevant have potential value in being reused by others. Many cellphone photos could, for example, be useful as illustrations in someone's slideshow presentation or for a blog post.

The extent to which the law's automatic application needlessly prevents the use of intellectual works results in a kind of allocative inefficiency. The greater the quantity and quality of such works, the greater the attendant economic loss.

The amount of overkill loss created by the copyright system is far from trivial. Quantifying it is daunting, but we can get some idea of its magnitude by extrapolating from historical data. In a prior era of copyright law, when copyright protection did not apply automatically, many creators and publishers were content to do without it.[36] For instance, a survey looking at library-held publications from the year 1908 found that only about 21% of works were copyrighted.[37] And a review looking at posters from the year 1976 found that less than a third were copyrighted.[38] Those studies suggest that automatic copyright in those eras would have created a lot of overkill. Yet before we draw the analogy to the current era, we must note that things have changed in

[35] *See supra* Part I.B.

[36] *See* Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485, 503-14 (2004).

[37] *Id.* at 512.

[38] *Id.* at 513.

ways that will act to increase both the percentage of overkill and its gross quantity. The amount of content created has greatly increased, and the growth has principally been outside the professional media industries. In 2013, more than 500 million photos were shared online per day and more than 100 hours of video were added per minute.[39] Extrapolating from the 1908 and 1976 studies, we can conclude that only a tiny sliver of this newly copyrighted material would not have been produced but for the incentive of copyright. The rest is overkill loss. If sharing could convert even a tiny fraction of this loss into economic gain, the benefit could be very significant.

2. Workpart Multiplier Effects

Another important exploitable economic inefficiency in the intellectual property system comes from the fact that some protected works serve as building blocks for other works. The manuscript for a novel may start as nothing more than a blank page, but periodicals, movies, videos, audio productions, and other more complex forms of media generally do not start from scratch. A newspaper, for instance, is infused with graphics and file photos. Movies are outfitted with sound effects and soundtrack music. Newscasts incorporate b-roll footage and graphics packages. These production elements, which are combined with original content to create finished works, are what I will call "media workparts."[40]

Media workparts are a special subset of intellectual works: they are tools that assist in the production of new works.[41] While there is great potential in general for sharing intellectual property, thanks to its non-rivalrous nature, there is special potential for sharing media workparts. For one thing, media workparts can be easier for creators to part with, since they are not finished works reflecting a fully realized artistic vision. At the same time, media workparts can be particularly valuable in the media and entertainment economy because they are useful in fabricating additional works of non-rivalrous intellectual property. Media workparts, then, are especially shareable.

Media workparts take on added importance because they can be the key to stepping up the production value of media creations and avoiding an amateur look and feel. Previously, to be involved in high-quality media creation, people needed to be invited into an exclusive group of professionals who were connected to megalithic firms that had millions of dollars of capital investiture. That dynamic has now given way to a new reality in which ordinary people

[39] Seth Fiegerman, *More Than 500 Million Photos Are Shared Every Day,* MASHABLE (May 29, 2013), http://mashable.com/2013/05/29/mary-meeker-internet-trends-2013/, *archived at* http://perma.cc/7UEH-TRQR.

[40] *See* Eric E. Johnson, *Rethinking Sharing Licenses for the Entertainment Media*, 26 CARDOZO ARTS & ENT. L.J. 391, 393-95, 397-98 (2008) [hereinafter Johnson, *Rethinking Sharing Licenses*] (discussing the importance of media workparts).

[41] *Id.* at 394 (discussing the "vastly greater creative power" that media workparts can provide to a movie producer).

need only time, talent, creativity, and the willingness to learn the craft to be able to make top-flight productions. Authors can sell e-books and even print-on-demand hardbacks and softcovers without a traditional publisher. Freelance and citizen journalists can publish directly to blogs that can match all the technical and artistic sophistication of the online distribution outlets of media giants. When it comes to video and film, it is now possible for individuals or very small groups of amateurs to make highly polished productions with consumer-affordable video cameras, microphones, and editing software that is broadcast-grade and even theater-grade. And once a production is finished, the infrastructure of movie theaters or broadcast transmitter towers is no longer needed for distribution.[42] For music, the level of democratization is even more impressive. The playing field between record companies and basement-made albums is nearly completely level at this point.[43] Instruments are cheaper, top-shelf multi-track editing/processing software is very affordable, and microphones with superlative sound have come down orders of magnitude in price.[44] Moreover, with a regular personal computer and a USB audio interface, music can be recorded straight to a hard drive, which is the same way top recording studios now operate.[45]

This revolutionary democratization of media production and distribution, however, will be constrained unless citizen media producers have access to the stock photography, artwork, b-roll footage, production music, sound effects, and other workparts that sweeten the production value of a media project. With the flattening of the equipment and skill curves in media production, the difference in access to media workparts is substantially responsible for the production-quality gap between Hollywood productions and the work of outsiders.[46]

Mainline media companies get access to media workparts with expensive production libraries, subscription services, and accumulated archives of materials from prior work. Provisioning these workparts promises to put much more power into the hands of citizen media producers.

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[42] *See, e.g.*, Monisha Rajesh, *Why Indie Directors Give Movies Away Free Online*, TIME (Dec. 26, 2009), http://content.time.com/time/arts/article/0,8599,1950005,00.html, *archived at* http://perma.cc/S3BG-2HKB (describing the comparative benefits of distributing film productions through online channels such as YouTube).

[43] *See* Lathum, *Unsigned Artists: Success Without a Record Label*, ARTICLESBASE (Sept. 11, 2007), http://www.articlesbase.com/music-articles/unsigned-artists-success-without-a-record-label-212612.html, *archived at* http://perma.cc/C3NR-C2EZ (quoting Jeff Tweedy, lead singer of Wilco: "Technology has evened the playing field").

[44] *See* Anthony Bruno, *YouTube Stars Don't Always Welcome Record Deals*, REUTERS (Feb. 26, 2007, 7:04 PM), http://www.reuters.com/article/2007/02/26/us-youtube-idUSN2518918320070226, *archived at* http://perma.cc/YDL6-3XDK (discussing the feasibility for recording artists of working without a recording contract given dropping costs and increasing ease of distribution).

[45] *See id.* ("Tech-savvy artists can further cut costs with a good laptop and ProTools.").

[46] *See* Johnson, *Rethinking Sharing Licenses*, *supra* note 40, at 393.

3. The Outport Effect

Media workparts exhibit a special economic characteristic I call the "outport effect."[47] Because of this effect, media workparts present a special opportunity for harvesting economic gains. The outport effect arises where some intellectual creation—such as video footage, an audio recording, or a photograph—is "cheap as a target of opportunity, but expensive as a target of intention."[48] That is, these works are easy and inexpensive to produce when the opportunity happens to come up, but they are difficult and expensive to produce when the need for them arises.

An example will make this clear. Suppose you live in New York, and you are making a video about a federal lawsuit that happened in Arizona. To illustrate a portion of the video that concerns the oral argument that took place before an appellate court in Phoenix, Arizona, you would like a photograph of the courtroom where the hearing took place. It would be very expensive and difficult for you to obtain this photo by yourself. Flying across the country would be costly, of course, and very time-consuming as well. On top of the obvious inconveniences involved, there is also the problem that photography is not ordinarily allowed in federal courthouses.[49] Getting permission could be an ordeal. Thus, such a photograph is expensive as a matter of intention.

Now, suppose a person happens to be at a special event at the courthouse during which people are permitted to use cameras and take photographs.[50] For this person, who happens to have a camera along, taking the picture you want is cheap as a matter of opportunity.

In economic terms, the value of the photograph to the user greatly exceeds the cost of producing the photo for the person who has taken it. This means that there is great potential for harvesting economic wealth. The difference between production cost on the one hand and the value to the consumer on the

[47] See *id.* at 389-99 (describing this concept, though not with the label "outport effect").

[48] *Id.* at 398.

[49] *See, e.g.*, General Order No. 58, United States District Court, Northern District of California (Section IV.C provides, "Photographs may not be taken and images may not be captured by any means in the courthouse or in the courthouse portions of the building (this prohibition does not apply to sketch artists)."); *see also* FED. R. CRIM. P. 53 (banning photography in federal courtrooms).

[50] I use this example because I was at such an event at the Sandra Day O'Connor United States Courthouse in Phoenix, Arizona, with Justice O'Connor in attendance, to mark the naming of the Special Proceedings Courtroom in honor of U.S. District Judge Robert C. Broomfield. During the event I was allowed to, and did, take photos. The timing turned out to be ideal, since it was dusk, and the light was especially good for the courthouse, which encompasses a giant glass atrium. I even took photos inside the Robert C. Broomfield Special Proceedings Courtroom. Being a respectful member of the bar, and one who has no desire to cross a cadre of U.S. Marshals pointedly abstaining from drinks and hors d'oeuvres, I got the permission of Judge Broomfield himself before doing so. *See* Eric E. Johnson, *Courthouses*, FLICKR (last visited Sept. 18, 2014), http://www.flickr.com/photos/ericejohnson/sets/72157622836202580/with/4118025918/.

other translates to economic gain—that is, so long as the photograph ends up distributed and licensed to the person for whom it would be useful. This is the outport effect.

Thanks especially to the affordability and ubiquity of digital cameras, every day people are taking millions of photographs—a great multitude of which have the potential to be significantly valuable to someone else. At the same time, made-by-citizen media—for example, blogs, vlogs, and YouTube videos—has an enormous appetite for images and other media workparts. The more media workparts that become available, the greater the creative range there is for everyone, and the better the resulting content will be. In a world where most of the value of the Internet is created by individual users, the gains that might result from the outporting of workparts could be very significant.

B. *The Economic Shareability of Intellectual Property*

Under the right circumstances, sharing can be economically efficient—meaning that sharing transactions can achieve an efficient economic ordering of consumption and depletion of surplus economic capacity. Work by Yochai Benkler has examined what it is that makes certain economic goods—not necessarily creative ones—more amenable to sharing than to market transactions or ordering through a managerial hierarchy.[51] His insights have important application to the sharing of intellectual property.

Explaining Benkler's theoretical work—so that I can discuss its implications for intellectual property and media workparts—requires going into some detail.[52] If you are quite comfortable with microeconomics, or if you are already familiar with Benkler's work, I invite you to skip ahead and read the summary at Part II.B.4.

1. Excess Capacity

The specific kind of sharing that Benkler explores is not sharing among family members or close friends, which is a type of sharing that is fairly easy to understand. Instead, Benkler looks at sharing among complete strangers or very loosely affiliated individuals.[53] In his work, Benkler discusses physical goods,[54] and his two primary examples are unused automobile capacity (shared in the form of casual carpooling) and unused computer processor capacity (shared in the form of a network-leveraging program of academic research).[55] We will see that Benkler's theoretical treatment of shareable physical goods

[51] *See* Yochai Benkler, *Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production,* 114 YALE L.J. 273 (2004).

[52] My references in this explanation of Benkler's work are to his *Sharing Nicely* article, *id.* Note that Benkler also discusses many of the same concepts in a book as well. *See* YOCHAI BENKLER, THE WEALTH OF NETWORKS 81-90, 106-22 (2006).

[53] Benkler, *supra* note 51, at 275-76.

[54] *Id.* at 276.

[55] *Id.* at 281-96.

provides an excellent framework for looking at intellectual goods that qualify as media workparts.

Shareable goods, for Benkler, are those that have excess capacity.[56] That is to say, people who own these goods tend to end up with more than they really need. The excess, then, is what they are primed to share. The kinds of goods that are shareable because of a chronic tendency to exhibit excess capacity have two technical characteristics: lumpiness and medium-sized granularity.[57]

Lumpiness means that goods arrive in discrete units, rather than in a continuous flow.[58] Cars are lumpy, for example. You can have one car or two—but not 1.535 of them. Whether goods are lumpy tends to correspond with whether they are denominated only in whole integers. Water, for instance, is a non-lumpy good. You can mete out any quantity of water you like. If you want 1.535 liters of water, you can get exactly that.

Granularity is a more complex quality. As Benkler defines it, granularity refers to the size, price, and capacity of a given discrete unit.[59] To take an extreme example, a commercial power-generating nuclear reactor would be large-grained. A very large amount of money is required to buy just one nuclear reactor, and the capacity of a single machine is large. Just one commercial reactor can power an entire city or even a small country.[60] Jellybeans, on the other hand, are extremely small-grained—each one is cheap, small, and individually unable to satisfy much hunger. With goods of small-grained granularity, you are able to purchase pretty much exactly as many as you need.

If goods have mid-grained granularity, then the discrete units are small enough (or cheap enough) that they can be purchased by a middle-income individual, but the units are large enough that once you have bought any number of units, even just one, you are likely to have more than you need.[61]

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[56] *Id.* at 276.

[57] *Id.*

[58] *Id.* at 276-77.

[59] *See id.* at 277.

[60] *See, e.g.*, GE Hitachi Nuclear Energy, THE ABWR PLANT GENERAL DESCRIPTION at 1-1, 9-1 (2007), *available at* http://www.ge-energy.com/content/multimedia/_files/downloads/ABWR%20General%20Description%20Book.pdf, *archived at* http://perma.cc/Y9Z3-ATJV (describing the Advanced Boiling Water Reactor ("ABWR") made by a joint venture of General Electric and Hitachi, which produces about 1350 megawatts and costs about $2.16 billion); *World DataBank: World Development Indicators,* WORLD BANK, http://databank.worldbank.org/Data/Views/reports/tableview.aspx (last visited Sept. 20, 2014) (indicating electric power consumption for countries around the world). For comparison, an ABWR operating at 90% power would provide the 1.21 gigawatts required by the flux capacitor in Dr. Emmett Brown's DeLorean time machine. *See* BACK TO THE FUTURE (Universal Studios 1985).

[61] Benkler, *supra* note 51, at 274 ("A particular alignment of these characteristics will make some goods or resources 'mid-grained,' by which I mean that there will be relatively

Benkler's chief examples are personal computers and automobiles.[62] For example, once you buy a personal computer, you have more computing capacity then you can really make use of. You will certainly let your computer sit idle a great deal of the time, such as when you are sleeping. And even when you are surfing the web or using a word processor, you are rarely using the microprocessor's full capacity.[63] An automobile is similar—it too has "slack capacity." You are often not driving it, and even when you are, there is extra capacity whenever there are unoccupied seats.[64]

The characteristics of lumpiness and mid- or large-sized granularity combine to give rise to slack capacity. That is to say, the goods are likely to be underused, leaving a residue of extra, unappropriated value.[65]

Lumpy goods of mid-grained granularity are the ones that tend to be shareable. Why not small-grained? With small-grained goods, you tend to buy only as much as you need, so you are unlikely to have shareable leftovers.[66] Why not large-grained? Larger-grained goods have so much slack capacity that the excess is usually best liquidated in a market.[67] Again, to take an extreme example, if you have a nuclear reactor, and you are only using 40% of its power output, there is enough value tied up in the reactor that it is worth the hassle to sell the extra power to any utility companies that can make use of it.

All this makes instant sense if you think about the example of jellybeans. Individual jellybeans have small-grained granularity, and if you buy three jellybeans—thinking that you want to eat three—you are probably not going to feel like sharing. On the other hand, if jellybeans are sold only in two-pound bags, then you are dealing with goods of mid-grained granularity. If you feel like having a few jellybeans, you might buy a two-pound bag. But once you do, you are likely going to be in the mood to share. If you work in an office, you might put them in a bowl and set them on a counter so that people will help themselves. Now, if jellybeans are sold in units of 20 metric tons each, and if you find yourself in possession of a single unit, you would not want to eat them all, and you probably would not want to share them, either. Instead, you would want to go into the jellybean business—or at least complete a market transaction with someone already in the jellybean business.[68]

widespread private ownership of these goods and that these privately owned goods will systematically exhibit slack capacity relative to the demand of their owners.").

[62] *Id.* at 275.

[63] *Id.* at 289-96.

[64] *Id.* at 281-89.

[65] *Id.* at 297.

[66] *Id.* ("Fine-grained goods are of a granularity that allows consumers to buy precisely as much of the goods as has the amount of capacity they require . . . .").

[67] *Id.* ("A large-grained good is one that is so expensive that it can only be used by aggregating demand for it.").

[68] If the jellybeans are Jelly Belly brand, a 20-metric-ton load would work out to around 18 million individual jellybeans, worth about $400,000 at retail prices, and packing around

Back to Benkler's examples: computers and cars. As lumpy items with mid-grained granularity, Benkler says computers and cars are shareable.[69] Benkler provides case studies to illustrate. For cars, his example is casual carpooling in the San Francisco and Washington, D.C., metro areas.[70] For computers, his primary example is SETI@home, a distributed-computing project whereby volunteers allow the SETI program (i.e., the Search for Extraterrestrial Intelligence) to use spare microprocessor capacity on home computers to analyze radio static from outer space, sifting through it for signs of alien civilizations.[71] The idea is that when it comes to spare seats in a car or spare cycles in a PC's microprocessor, there is not enough extra capacity for it to be worthwhile going into the taxicab or cloud computing business. But there is enough excess value that it can be worthwhile to give it away.

2. The Role of Fuzziness

Benkler's claim about shareable goods is more than the idea that sharing can be helpful or sensible in certain situations. Benkler claims that under certain circumstances, sharing will actually be more economically efficient than the alternative economic modalities of markets and managerial hierarchies.[72]

Markets allocate goods, labor, and slack capacity through price-based transactions in a free marketplace where the "invisible hand" ensures an efficient allocation of all.[73] Managerial hierarchies, in contrast, are a form of ordering that allocates goods, labor, and slack capacity by putting someone in charge and having that person make decisions. All real-world governments do this to some extent, with the extreme example being a Soviet-style economy. A more common form of managerial ordering is what goes on inside a single firm, with managers deciding how and when to use the assets of the company, and deciding as well who should do what work and for how long.

71 million calories. In case you are tempted to eat them all, some back-of-the-envelope calculations will show that it would take approximately 20 years of around-the-clock dancing to burn them off. *See General Facts*, JELLY BELLY CANDY CO., https://jellybelly.com/Info/aboutjellybelly/general_facts, *archived at* http://perma.cc/S2-42PZ (last visited Sept. 20, 2014) (indicating that 25 jellybeans weigh one ounce and are 100 calories, requiring 15 minutes of dancing to burn off); *Tropical Mix Jelly Beans - 16 oz*, JELLY BELLY CANDY CO., https://jellybelly.com/product/170, *archived at* http://perma.cc/CY4S-48NY (last visited Sept. 20, 2014) (indicating that a one-pound bag costs $8.99).

[69] Benkler, *supra* note 51, at 304-05.

[70] *Id.* at 281-89.

[71] *Id.* at 289-96.

[72] *See id.* at 277 ("I offer reasons to think that sharing may have lower transaction costs, improve the information on which agents who own these resources act, and provide better motivation for clearing excess capacity.").

[73] I describe the market modality in some detail, in an intellectual property context, in a prior paper. *See* Johnson, *Incentive Fallacy*, *supra* note 13, at 629.

So how is it that sharing can be a more efficient economic modality than markets or managerial hierarchies? There are two principal reasons. One involves the level of crispness of transactions, and the other has to do with the motivations of the actors.[74]

Crispness is a quality that exists on a spectrum, the other end of which is fuzziness. The difference between crisp and fuzzy transactions is in how much detail is spelled out in the course of negotiating and conducting the exchange. A fuzzy transaction, for example, would be when a friend does you a favor by helping you move several pieces of furniture and dozens of boxes of books, and you say, "I'll owe you one." That transaction is fuzzy. How big of "one" do you owe? Enough to babysit a tantrum-throwing two-year-old on a Friday night? Enough to leave work in the middle of the day to deliver a prescription to someone homebound with the flu? The exact debt is not spelled out. By comparison, an example of a crisply defined transaction would be one in which you hire a moving company, reaching agreement on a specified volume and weight of boxes and household items to be moved at an exact fee spelled out in dollars and cents, the entire deal being documented with a 2000-word agreement that, among other things, assigns responsibility in case of damage or loss.

Benkler observes that "both markets and managerial hierarchies require crisp specification of behaviors and outcomes."[75] On the other hand, crispness is not a characteristic of social relations, "which rely on fuzzier definitions of actions required and performed, of inputs and outputs, and of obligations."[76]

The problem with crispness is that it can be very costly. That is, the need for crispness in markets and hierarchies incurs substantial transaction costs.[77] As Benkler points out, transaction costs are known to be capable of affecting the organization of the economy and the structure of access to resources.[78] So the effect is not trivial. Social sharing, on the other hand, can be immune from the

[74] Benkler, *supra* note 51, at 357.

[75] *Id.* at 277.

[76] *Id.*

[77] The efficiency of fuzzy social transactions as opposed to crisp market transactions is related to the observation that property entitlements may be more efficiently delineated in social terms rather than legal terms. Exploring the role of legal rules and social norms in the context of ranchers and farmers in rural Northern California, Robert C. Ellickson points out, "Because it is costly to carry out legal research and to engage in legal proceedings, a rational actor often has good reason to apply informal norms, not law, to evaluate the propriety of human behavior." Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623, 686 (1986).

[78] Benkler, *supra* note 51, at 309 ("We have long understood transaction costs to be sufficiently nontrivial to affect the choice of how the economy organizes access to and use of resources." (citing R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937); R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960))).

need for crispness, and thus, social sharing gains efficiency through reducing transaction costs.[79]

3. The Sharing Calculus

All of this leads Benkler to a prediction: sharing will take place with shareable goods if the private utility in sharing exceeds transaction costs.[80] It is important to note that the private utility need not be very high. Since giving away excess capacity is costless, except for the transaction costs, then as long as the transaction costs are low, the private utility can be low as well.[81]

There is a catch, however. Social sharing will only flourish if there is infrastructure to support it. While transaction costs may be low for a social-sharing system in operation, setting up the system can be quite costly.[82] Yet the investment can be worth it, because once up and running, social-sharing systems require less crispness than alternative economic modes.[83] This means that social-sharing systems can be sustainably efficient, since price-based market transactions require, on a per-transaction basis, more precision in the information about obligations and goods and more enforcement and monitoring than social-sharing systems do.[84]

4. Summary of Shareability

To summarize: Benkler defines "shareable" goods as those that are (1) technically lumpy and (2) of mid-grained granularity.[85] These conditions, Benkler says, are sufficient to make social sharing feasible as a sustainable practice.[86] The lumpiness and medium granularity lead to systemic excess capacity, which can be reallocated to individuals who will use it productively.[87] That excess capacity may be more efficiently cleared through sharing mechanisms, rather than markets or hierarchal ordering, where the shareable goods are widely owned and where there is only a small amount of excess capacity per unit as compared to the total amount needed to have

[79] Benkler, *supra* note 51, at 311 ("Social norms may shift around the entitlements if transacting around the entitlements through the social system is less costly than doing so through the market, in which case the inefficiency need not be solved by state or judicial intervention to reallocate the entitlements." (citing Ellickson, *supra* note 77)).

[80] *Id.* at 312 ("This means that [people] should prefer to have their excess capacity used rather than be idle whenever there is any positive utility to them from its use, minus the cost of sharing or reselling it.").

[81] *Id.*

[82] *Id.* at 317.

[83] *Id.*

[84] *Id.*

[85] *Id.* at 276.

[86] *Id.*

[87] *Id.* at 276, 357.

significant economic value.[88] In such a system, sharing will take place with shareable goods if the private utility in sharing exceeds transaction costs.[89] Since transaction costs can be held very low in a sharing system, the private utility need not be very high. Social sharing systems can be costly to set up, but they pay off over time with lower marginal transaction costs.[90]

5. Applications for Intellectual Property and Media Workparts

Using Benkler's framework, to what extent are items of intellectual property "shareable"? The answer depends on the nature of the work in question. Some are, and some are not. But running through Benkler's analysis, it is clear that some kinds of intellectual property are indeed imminently shareable—particularly media workparts, and especially those that are born as "extra" works coming out of the recent explosion of digital content creation.

Take digital photography. There are a few different ways to look at digital photography in terms of lumpiness and granularity. One way is to think about the camera's lumpiness and granularity. Another way is to look at the lumpiness and granularity of individual photos. Both ways point to the same conclusion about shareability.

Start with the camera. It is lumpy—that is easy to see. It is also of mid-sized granularity. A digital camera is like a computer in the sense that, once you have bought one, you have more capacity than you will end up using. Unlike a computer, however, that capacity cannot be utilized by a remote user connecting to the camera over the Internet. A camera needs to be pointed at something to take a picture of it, and that means someone needs to take the camera somewhere, or bring something to the camera, and then do the pointing and clicking. Nonetheless, there is clearly excess capacity. The portability, inexpensiveness, high quality, and large memory capacity of digital cameras all combine to make taking pictures so cheap as to be nearly effortless—at least as long as the subject is right in front of the photographer.[91]

Now, take the analysis to individual photographs. Are such photographs lumpy? Yes. They are lumpy because they come in discrete units. Are they of mid-grained granularity? This is more difficult to answer. Some are of mid-

[88] *Id.* at 357 ("We can predict that sharing is likely to be more efficient than markets when shareable goods are widely owned and have only small amounts of excess capacity per unit, relative to the total amount of capacity necessary to produce an economically valuable output.").

[89] *Id.* at 312.

[90] *Id.* at 317 ("Once these initial costs have been invested, however, market transactions systematically require a greater degree of precise information about the content of actions, goods, and obligations, and greater precision of monitoring and enforcement on a *per-transaction* basis than do social exchange systems." (emphasis added)).

[91] *See Inductees: Steven Sasson*, NATIONAL INVENTORS HALL OF FAME, http://invent.org/inductee-detail/?IID=453, *archived at* http://perma.cc/RTW9-WJBM (last visited Sept. 18, 2014) (describing the availability, prevalence, and accessibility of digital cameras to the average consumer).

grained granularity, while the granularity of others may range from very large to very small. The analysis here becomes somewhat complicated because the conception of granularity of physical goods does not map easily on to intellectual works.

Recall the example of a nuclear reactor.[92] The nuclear reactor is large-grained—not because it is physically heavy, and not even because it is expensive. The essence of the large-graininess of a nuclear reactor is in how many people it can serve with its power output. Even understood this way, graininess remains a slippery concept for intellectual works, since intellectual works are non-rivalrous. A photograph, as a non-rivalrous good, can be reproduced an infinite number of times and serve an infinite number of people. Thought of in these terms, each photograph might be understood to have an infinitely large capacity, and thus be large-grained. But in reality, there are only so many people who will derive any use out of any given photograph. The amount of use that can actually be expected to derive from an intellectual work is the real measure of its graininess.

This concept is best explained with examples. An example of a small-grained photograph is a picture of a bride caught in a moment of partial undress while donning her wedding gown—and let's stipulate that this is a bride with a deep sense of modesty. The photo is small-grained because only a few people on Earth have any business seeing this photo—the bride, the groom, and maybe the bride's mother and bridesmaids. An example of a large-grained photograph would be the first-ever photo of the newborn baby of an ultra-famous celebrity couple that is at the very focal point of worldwide gossip. The photo is large-grained because there are legions of people who want to see it, and having the photo widely viewed is—let's stipulate—consistent with the interests of the baby's self-promoting media-darling parents.

If you think about a photo as not merely being a digital file of ones and zeros, but as constituting an extended entity that includes its potential distribution, then you can see that the graininess I have described lines up with the concepts of excess capacity explained by Benkler with reference to tangible goods. Consistent with the description of the bride's photo as being small-grained, the bride has just as much photo as she wants: letting four or five people see it and not more. It is like buying three jellybeans when you are hungry for eating precisely three jellybeans. There is nothing left over—no excess capacity. On the other hand, consistent with the description of the celebribaby photo as being large-grained, there are so many people who could derive utility from it that it is worthwhile to create a market for clearing that excess capacity. Indeed, that is what many celebrity couples do. Triple-A-list power couple "Brangelina"[93] sold the first photos of their twins Vivienne Marcheline and Knox Leon for a reported $14 million to People magazine.[94]

[92] *See supra* notes 59-60 and accompanying text.

[93] Angelina Jolie and Brad Pitt. *See, e.g.*, *The Brangelina Saga: Brad Pitt and Angelina*

It being understood that there are such things as large-grained and small-grained photographs, it is nonetheless clear that a great mass of photographs, ones that would qualify as media workparts, are of mid-sized granularity. Of the billions of surplus photographs that are taken each year, many could be useful to bloggers or other creators of citizen-produced media. Most of these photographs are unlikely to have so much extra capacity—that is, so much extra demand to which the photographer would accede—that it would be worth the transaction costs to clear that excess capacity through a market mechanism.

The theory fits well with reality. As I will show in Part III.B, below, markets for medium-granularity lumpy intellectual works—such as stock photos—have collapsed into an absurd state with bottomed-out prices not covering production costs.[95] The reason such a market continues to function at all, even in its inefficient state, is because of a principle unappreciated by traditional—or "neoclassical"—economics: creative labors are driven more by intrinsic motivation than external rewards.[96]

C. *Intrinsic Creative Motivation and Sharing*

The system of intellectual property protection has long been undergirded by the assumption that monetary incentives are necessary for creative production. The digital revolution now calls that into question. At this moment in history, we have overwhelming empirical evidence demonstrating that a great quantity of copyrightable and copyrighted content is being generated without regard for the monetary incentives the copyright system seeks to provide.[97] That evidence flies around the Internet by the petabyte: Wikipedia, blogs, open-source software, YouTube videos, free podcasts, and the flood of Twitter and Facebook content created by users.[98] How can this be the case? The answer, as social science has figured out, is that creative labors are, as a general matter, intrinsically motivated.[99] That is, instead of dollars, pounds, euros, or yen, what motivates people to engage in the laborious pursuit of the arts, for the

Jolie's Relationship Through the Years, N.Y. DAILY NEWS, Jan. 25, 2010, http://www.nydailynews.com/entertainment/gossip/brangelina-saga-gallery-1.78029, *archived at* http://perma.cc/LV4A-5WT2.

[94] *See id.* (indicating on slide 19 of 21 that the couple sold photos of their twins to *People* magazine for $14 million).

[95] *See Index Page*, ISTOCK, http://www.istockphoto.com, *archived at* http://perma.cc/3FBS-ZV35 (last visited Feb. 13, 2014) (listing prices for yearly subscriptions to stock photos).

[96] For an extended discussion, see Johnson, *Incentive Fallacy*, *supra* note 13, at 624.

[97] *See id*.

[98] *See id.* at 648; *see also* Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1777-78 (2012) (explaining that "expressive incentives" may be more of an inducement to create than traditional pecuniary incentives); Elizabeth L. Rosenblatt, *A Theory of IP's Negative Space*, 34 COLUM. J.L. & ARTS 317, 343 (2011) (stating that recognition, by itself, serves as incentive to create for many people).

[99] *See* Johnson, *Incentive Fallacy*, *supra* note 13, at 624.

most part, is their own inner drive. The production of copyrighted works is much more about passion than profits. What is more, social science shows quite convincingly that money is often harmful to the creative impulse; that is, offering to pay for something that someone is motivated to do for free may cause that person to lose motivation altogether.[100]

While social science shows that money does not tend to incentivize creativity, the same science shows that other things do. According to social psychologists Richard M. Ryan and Edward L. Deci, validations of "competence, autonomy, and relatedness" spur creativity.[101] Similarly, according to business writer Daniel H. Pink, creative labors are abetted by positive feedback, gratitude, and useful information about the contributions made as a result of the work.[102]

This line of scholarship does much to explain the existence of significant copyright overkill.[103] But it suggests more: an economic system is likely to more effectively incentivize the production of creative works if it is set up to pay creative laborers in the currency of gratitude, feedback, information, and social validations. Serendipitously, sharing provides exactly that.

Web 2.0 is proof writ large that sharing is a catalyst for creative production.[104] This surge of user-generated content—Wikipedia, Flickr, Twitter, Facebook, and blogs—is nearly all uncompensated in terms of money. Yet despite being moneyless, these platforms do supply the creativity agonists[105] of social validation and informative feedback. As media scholar Clay Shirky explains, the sharing itself is what makes the sharing rewarding.[106]

Take Wikipedia. The copyright incentive is irrelevant to the existence of Wikipedia, since Wikipedia and its contributors systematically surrender their

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[100] *See generally* DANIEL H. PINK, DRIVE: THE SURPRISING TRUTH ABOUT WHAT MOTIVATES US (2009).

[101] Richard M. Ryan & Edward L. Deci, *Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being*, 55 AM. PSYCHOLOGIST 68 (2000).

[102] PINK, *supra* note 100, at 67 (citing Edward L. Deci et al., *Extrinsic Rewards and Intrinsic Motivation in Education: Reconsidered Once Again*, 71 REV. OF EDUC. RES. 14 (2001)).

[103] *See infra* Part II.A.1.

[104] Web 2.0 is also known as "user-generated content." Johnson, *Incentive Fallacy*, *supra* note 13, at 648.

[105] With "agonist," I am borrowing a term from biochemistry and pharmacology. An agonist is a biochemical substance that initiates a certain response when it binds with a receptor on a cell. For instance, cocaine and amphetamines are catecholamine agonists because they prevent re-uptake of catecholamines, thus amplifying their effect. *See* NEIL R. CARLSON, FOUNDATIONS OF PHYSIOLOGICAL PSYCHOLOGY 116-17 (1988). An "antagonist" blocks the action of the agonist. *See id.* at 485-86.

[106] CLAY SHIRKY, COGNITIVE SURPLUS: CREATIVITY AND GENEROSITY IN A CONNECTED AGE 87-88 (2010).

copyright entitlements.[107] Yet the cost of Wikipedia—measured by analogy with compensated labor—is around $2.5 billion.[108] There is no way that traditional neoclassical economics can explain Wikipedia. But the intrinsic motivations described by social scientists explain it quite satisfyingly. Moreover, when you look at Wikipedia closely, you see that feedback and social interconnectedness is what fuels the enterprise. Wikipedia editors form a community—one that communicates and interacts via "user talk" pages.[109]

Emblematic of the feedback and social interconnections supplied through Wikipedia is the barnstar—a symbolic award given by one Wikipedia author to another.[110] The image most traditionally associated with a barnstar is that of a five-pointed star used as an architectural element, symbolically tied to barn raising as a community-based building project.[111] But other sorts of barnstars abound on Wikipedia, including cups of coffee and mugs of beer.[112] No matter what form they take, they are digital embodiments of the kinds of nonmonetary incentives that connect with the human desire to produce intellectual works.

The economic theory and the social science analysis all combines powerfully to show the tremendous promise of the sharing of intellectual property. This synthesis also, by implication, suggests why current modes of exchange—including money-denominated markets and general public licensing schemes—can be inefficient by comparison.

III. MARKETS COMPARED

To this point, I hope to have set out a convincing case that there is a substantial loss of economic welfare because of the overextended nature of intellectual property law, and, correspondingly, that there is latent treasure to be had in prospecting it. I hope also to have shown, by looking at the economic theory of sharing and the social science on creative motivation, that sharing is likely to be successful and economically efficient in obtaining economic value from surplus intellectual property entitlements. Thus, to this point, I have explained why sharing is good. In this Part, I wish to switch the focus from the advantages of sharing to the disadvantages of markets, mostly by scrutinizing an empirical case—the contemporary market for stock photography. I begin, however, by briefly restating the argument I have made to this point, but doing

[107] Wikipedia is licensed such that anyone else can reproduce it and produce altered versions of it. *See* PHOEBE AYERS, ET AL., HOW WIKIPEDIA WORKS: AND HOW YOU CAN BE A PART OF IT 459 (2008).

[108] *See* Johnson, *Incentive Fallacy*, *supra* note 13, at 650 (modeling the development cost of Wikipedia).

[109] AYERS ET AL., *supra* note 107, at 333-34.

[110] *Id.* at 334.

[111] *Id.*

[112] *See, e.g.*, *User Talk: The Blade of the Northern Lights*, WIKIPEDIA (Dec. 9, 2011), http://en.wikipedia.org/wiki/User_talk:The_Blade_of_the_Northern_Lights, *archived at* http://perma.cc/4MBV-U6Y4.

so from the reverse angle, starting with the assumption that markets are the first-best solution.

A. *Markets, in General*

At first blush, traditional economic thinking leads one to assume that the market should be adequate for addressing an economic surplus of any kind, including intellectual property overkill. But note that there is an irony involved in supposing a market solution to intellectual property overkill. Intellectual property itself is in fundamental tension with neoclassical economics, since intellectual property is a system of government-granted monopolies. In keeping with the spirit of free-market economics, the cleanest market solution to intellectual property overkill would be to remove the encumbrances on the market that create the overkill in the first place. That is to say, we could get rid of intellectual property overkill by getting rid of intellectual property. Nonetheless, taking the existence of the intellectual property system as a given, neoclassical economics suggests that since the owners of overkill-category copyright entitlements can sell off excess portions of their entitlements on the open market through monetized transactions, the market should operate to make the best of the situation.

How does regular economic thinking lead to this conclusion? The first theorem of welfare economics is that if everyone conducts trades in a perfectly competitive market, then all mutually beneficial trades will be carried out, resulting in a Pareto-efficient equilibrium allocation—meaning that no one could be made better off without leaving someone else worse off.[113] Moreover, well-worn economic wisdom says that competitive markets are generally preferable to other modes of exchange because markets allocate resources with minimal information, thus incurring minimal costs in achieving an economically efficient allocation.[114] For a competitive market to achieve efficient allocation, consumers only need to know their own preferences and the prices on offer.[115] Thus, transaction costs are low because informational requirements are at a minimum. Correspondingly, it is thought that any alternative—such as hierarchical, centralized management—will need more information than a market, and hence will be cumbersome and costly to manage, thus incurring inefficiencies through transaction costs.[116]

So far, so good. But we must now apply the stepped-up economic analysis put forward in Part II. When goods are lumpy and of medium granularity, money-based market transactions reveal themselves to be a less efficient means of clearing excess capacity than sharing.[117] Outportable workparts—

[113] *See, e.g.*, ROBERT S. PINDYCK & DANIEL L. RUBINFELD, MICROECONOMICS 597 (7th ed. 2009).

[114] *See id.*

[115] *See id.*

[116] *See id.*

[117] *See supra* Part II.B.

with their medium-granularity and lumpiness—are exactly such goods. An additional and separate reason that markets are likely to be less efficient for outportable creative works is that markets use money, and money is, generally speaking, a suboptimal reward for creative labor.[118] The non-monetary rewards that come from sharing are more conducive to creative labors than the extrinsic rewards that are provided by copyright-enabled profits.

In sum, on the basis of theory, markets appear to be a second-best solution for a large amount of excess intellectual property. The next step is to take this theoretical analysis and see how well it matches up with the real world.

B. *A Snapshot of the Stock Photography Market*

"Stock" is the name used to describe photographs that are fungible in terms of their use in contexts such as magazines, websites, or brochures.[119] Stock photos are media workparts,[120] and stock photography is a subtle but key player in today's cultural milieu. You encounter countless examples every day. A photograph of law books can be used to illustrate a brochure about legal services. A simple daytime shot of a busy street in Europe can lend visual flair to a blog post about exchange rates. A photo of an orange safety cone can be used as the opening shot in a video about workplace hazards. Once you become aware of the pervasiveness of stock photography, you will realize that the applications are endless. As are the dangers of cliché: take, for instance, the ubiquitous image of a handshake in front of a globe. Nothing says "partnering with you to provide global solutions for today's business environment" quite like a handshake in front of a globe.[121]

The exchange of stock photos is perhaps the most straightforward application for person-to-person sharing of intellectual property. Regular people with cameras can create quality stock photos, and regular people with blogs and websites can make good use of stock photos. Thus, the real-world market for stock photography is an excellent point of comparison for person-to-person sharing.

As it turns out, the story of the stock photography market is not pretty. The industry has gone on a bizarre roller-coaster ride since the advent of the web. Today, the extant stock photo marketplace is, in many ways, an absurdity. In

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[118] Johnson, *Incentive Fallacy*, *supra* note 13, at 640-47; *see supra* Part II.C.

[119] *About Us*, ISTOCK, http://www.istockphoto.com/help/about-us, *archived at* http://perma.cc/L4ZD-9ES7 (last visited Sept. 17, 2014) ("Stock photos are ready-made images that are licensable for use in your advertising or promotional materials to illustrate specific things, concepts or ideas.").

[120] *Id.* (stating that stock photos "are the raw materials to get your graphic design started").

[121] *See, e.g.*, *Handshake Against Globe*, ISTOCK, http://www.istockphoto.com/photo/handshake-against-globe-north-and-south-america-15731993, *archived at* http://perma.cc/KL76-L6HC (last visited Feb. 3, 2014).

fact, it is so strange, the "market" for stock photography might be better thought of as a highly convoluted and inefficient sharing regime.

1. Digital Distribution Develops

The modern market for stock photography began in the mid-1990s.[122] Just as the World Wide Web was taking off in 1995, Jonathan Klein and oil-fortune heir Mark Getty founded Getty Images.[123] Klein and Getty's idea was to bring "the fragmented stock photography business into the digital age."[124] Getty's primary clients, both then and now, are megalithic media companies and Madison Avenue advertising agencies.[125] But Getty also holds itself out as a supplier to "bloggers of all kinds."[126] The company possesses upwards of 3 billion images and draws 4 million unique visitors to its website each month.[127]

In the beginning, Getty grew with the web. The web, of course, exploded, and Getty took off like a rocket. As Getty's fortunes ascended, Getty managed to push aside wire agencies and in-house file-photo cabinets to become the go-to source for ready-to-drop-in visuals.[128] Customers, as it turned out, were willing to pay handsomely for quality images. To understand how handsomely, it is necessary to understand Getty's system of tiered offerings. Getty's business plan has been to divide its stock photos into two categories: royalty-free and rights-managed.[129] Having purchased a flat-fee royalty-free photo, a customer can do with it whatever the customer wants.[130] The rights-managed photos have a tighter leash, however. Getty will only license one of its rights-managed photos after the customer notifies Getty exactly how the image will be used.[131] Getty then quotes a price accordingly.[132] The rights-managed photos are pricier than the royalty-free ones.[133]

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[122] Press Release, Getty Images, *Getty Images Agrees to be Acquired by Hellman & Friedman in a Transaction Valued at $2.4 Billion* (Feb. 25, 2008), *available at* http://media.gettyimages.com/article_print.cfm?article_id=171, *archived at* http://perma.cc/W3U8-KUWX.

[123] Andrew Ross Sorkin, *Getty Images Up for Sale, Could Fetch $1.5 Billion*, N.Y. TIMES, Jan. 21, 2008, at C1.

[124] *Our Company*, GETTY IMAGES: ABOUT US (on file with author; source no longer available online).

[125] Sorkin, *supra* note 123.

[126] *Our Company*, GETTY IMAGES: ABOUT US, *supra* note 124.

[127] Sorkin, *supra* note 123.

[128] *Our Company*, GETTY IMAGES: ABOUT US, *supra* note 124.

[129] *License Information*, GETTY IMAGES, http://www.gettyimages.com/corporate/licenseinfo.aspx, *archived at* http://perma.cc/E5UZ-UEFQ (last visited Sept. 19, 2014).

[130] *Id.*

[131] *Id*.

[132] *Id*.

[133] *See, e.g.*, *Event Brief of Q4 2004 GETTY IMAGES INC Earnings Conference Call—*

As Getty's popularity increased, so did its prices. In early 2002, the average price paid for a royalty-free photo was less than $100.[134] In about two years, it had more than doubled: at the end of 2004, Getty customers were paying an average of $210 per royalty-free photo.[135] Meanwhile, the higher-end rights-managed pictures were bringing in an average per-image, per-customer fee of $585.[136] Indeed, the stock photography business was very good in 2004. That year, stock photography made up 79% of Getty's sales,[137] the company garnered $622 million in revenues, and it clocked a 19% yearly revenue growth rate with pre-tax profits of about $175 million.[138]

The next year was even better. At the end of 2005, shares of Getty Images hit $93.66 on the New York Stock Exchange.[139] Sales volumes grew.[140] There was one slightly dull spot, however. Per-image prices stopped their wild growth. The royalty-free photos nosed upward slightly to an average of $237 per image, but the rights-managed average slipped about 5% to $558.[141] Nonetheless, the year was a fantastic success. CEO Jonathan Klein gushed to investors, "Our 2005 results are a wonderful way to begin the next decade for Getty Images. 2005 was by far the best year in our history. We've built a very good business . . . we believe very strongly that this is only the beginning."[142]

It was, however, only the beginning of the end.

2. The Great Stock Photography Crash of 2006

After 2005, things went downhill fast. The flattening growth of per-image prices was an early manifestation of a problem that quickly grew too big to shrug off. By the end of the next year, everyone could see that the tables had

Final, FD (FAIR DISCLOSURE) WIRE, Jan. 27, 2005 ("[F]or 4Q04 rights-managed price per image was $585 and royalty free was $210.").

[134] Jim Pickerell, *Getty Images Reports $21.5 Million Profit in 2002*, SELLING STOCK (Feb. 6, 2003), http://www.selling-stock.com/Article/getty-images-reports-215-million-profit-in-20, *archived at* http://perma.cc/V93Z-VKTM.

[135] *See Event Brief of Q4 2004*, *supra* note 133.

[136] *Id*.

[137] *Id*. Note that, consistent with general industry custom, Getty uses the term "stock photography" in a manner that is distinguished from "editorial photography," which depicts news and notable events.

[138] *Id*.

[139] Jemima Kiss, *Getty Images 'Up For Sale,'* GUARDIAN (Jan. 21, 2008), http://www.guardian.co.uk/media/2008/jan/21/mediabusiness.pressandpublishing, *archived at* http://perma.cc/KB4S-QW4L.

[140] *Event Brief of Q4 2005 GETTY IMAGES INC Earnings Conference Call - Final*, FD (FAIR DISCLOSURE) WIRE, Jan. 26, 2006 ("Total creative volumes of single images increased 12% in 2005. . . . Both rights managed and royalty free volumes were up.").

[141] *Id*.

[142] *Getty Images Inc Q4 2005 Earnings Conference Call Transcript*, BNET (Jan. 26, 2006, 5:00 PM), http://i.bnet.com/pdf/235890-Getty_Images_Inc_Q4_2005_Earnings_Conference_Call_Transcript_(GYI).pdf, *archived at* http://perma.cc/BZV6-8RM3.

turned. "It is clear that 2006 has been disappointing," Klein admitted to investors in a conference call nine months later.[143] Getty began rounds of layoffs.[144]

In 2006, the average prices of images at Getty began falling precipitously—or, at least, that is what one gathers. Hard numbers are lacking. Klein started refusing to provide specific information on average selling prices to investors. "So what we've decided to do will not fill you with glee or enthusiasm," Klein said in a 2007 conference call. "The level of granularity we've given around prices and volumes and actual numbers . . . we're no longer going to do that."[145]

Since its heyday, Getty's value had fallen about 73%.[146] The company put itself up for sale, found a buyer, and then was delisted from the NYSE.[147]

What explains Getty's precipitous decline? Digital history had reached a turning point. The web had become radically democratized, and the great mass of media consumers became media creators. Web 2.0's timeline, in fact, tracks Getty's fall: Flickr and Facebook were launched in 2004, and YouTube debuted in early 2005.[148] Later in 2005, Wikipedia's reader-written content began to grow explosively.[149] Then, at the end of 2006, *Time* magazine put a crude flexible plastic mirror in the center of its cover and announced that "You" had been selected as the magazine's "person of the year."[150] As amateur-generated content skyrocketed, Getty began its slide.

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[143] *Event Brief of Q3 2006 GETTY IMAGES INC Earnings Conference Call - Final*, FD (FAIR DISCLOSURE) WIRE, Oct. 24, 2006 (discussing Jonathan Klein's disappointment with Getty images earnings in 2006).

[144] Sorkin, *supra* note 123 ("Getty announced that it was laying off 100 employees, or about 5 percent of its full-time staff, its second round of cuts in as many years.").

[145] *Event Brief of Q1 2007 GETTY IMAGES INC Earnings Conference Call - Final*, FD (FAIR DISCLOSURE) WIRE, May 1, 2007.

[146] *See* Michael J. de la Merced, *Getty Images Agrees to Be Acquired by a Private Equity Firm*, N.Y. TIMES, Feb. 26, 2008, at C8.

[147] Private equity firm Hellman & Friedman paid $2.4 billion for Getty, which included a 55% premium on the share price before Getty put itself up for sale. *See* Press Release, Getty Images, *supra* note 122.

[148] Harry McCracken, *Flickr Turns 10*, TIME (Feb. 10, 2014), http://time.com/6855/flickr-turns-10-the-rise-fall-and-revival-of-a-photo-sharing-community, *archived at* http://perma.cc/F95V-C67R (stating that Flickr debuted six days after Mark Zuckerberg launched Facebook in 2004); Megan Rose Dickey, *The 22 Key Turning Points in the History of YouTube*, BUSINESS INSIDER (Feb. 15, 2013, 9:01 AM), http://www.businessinsider.com/key-turning-points-history-of-youtube-2013-2?op=1, *archived at* http://perma.cc/NCH8-7V7A (stating that YouTube launched in 2005).

[149] *See File:Time Between Edits Graph Jul05-Present.png*, WIKIPEDIA, http://en.wikipedia.org/wiki/File:Time_Between_Edits_Graph_Jul05-Present.png, *archived at* http://perma.cc/4SMB-VD6P (last visited Sept. 14, 2014) (illustrating the time between every 10,000th edit on Wikipedia from July 2005 through the present).

[150] Lev Grossman, *You — Yes, You — Are TIME's Person of the Year*, TIME (Dec. 25,

It turns out that what Getty's customers were mostly paying for was not creative labor, but capital investments in expensive cameras, film, and film development.

Hindsight shows that Getty's saga reflected the history of the Internet itself. The rise of digital technology—primarily the web—made Getty what it was.[151] But the further evolution of that technology—the advent of broadband and the rising tide of digital photography—led to a flood of competition. Getty was hard-pressed to keep charging hundreds of dollars an image when a teeming mass of humanity armed with high-quality SLR digital cameras began to deluge the web with content. In fact, upstart distributors were soon charging as little as a dollar an image.[152] And that was not as low as prices would go.

The story is similar with Getty's main competitor, Corbis. Unlike Getty, Corbis has never been public—owned, as it is, by Microsoft tycoon Bill Gates.[153] Corbis is especially notable for its acquisitions, which have been fueled by Gates's gargantuan cash reserves. Those acquisitions have made Corbis the owner of some of the most iconic and valuable photographs of all time. The photo of Rosa Parks sitting at the front of a Montgomery city bus is owned by Corbis, as is the famed shot of Marilyn Monroe standing over a subway grate as air blows up her dress.[154] Yet despite this enviable collection of blue chip images, and despite yearly sales of $250 million, as of April 2007, Corbis had yet to be profitable.[155] Corbis, like Getty, came under pressure from the rising tide of ultra-cheap offerings from citizen-photographers. And Corbis, like Getty, began rounds of layoffs in the wake of the user-generated content revolution.[156]

3. Microstock Rises from the Masses

The new market reality that dethroned Getty and Corbis, viewed through the lens of regular economics, looks like collective madness. But viewed through a

2006), http://www.time.com/time/magazine/article/0,9171,1569514,00.html, *archived at* http://perma.cc/RMZ9-27AU.

[151] *Our Company*, GETTY IMAGES: ABOUT US, *supra* note 124.

[152] Sorkin, *supra* note 123 ("[T]he rise of digital photography and the Web created a host of competitors that charged as little as a dollar for an image.").

[153] Katie Hafner, *A Photo Trove, a Mounting Challenge*, N.Y. TIMES, Apr. 10, 2007, at C3.

[154] *Id.*

[155] *Id.*

[156] Daryl Lang, *Corbis Laying Off Another 125 Employees*, PHOTO DISTRICT NEWS (Nov. 14, 2007, 3:50 PM) (on file with author) ("Stock photo agency Corbis plans to eliminate 125 jobs and close offices in eight markets in the first half of 2008."); Daryl Lang, *Corbis Cutting Another 175 Jobs, Combines Exec Jobs*, PHOTO DISTRICT NEWS (Sept. 11, 2008) (on file with author) ("In another sign that a tough economy and shifting media markets are squeezing stock imagery agencies, Corbis says it will cut 175 jobs worldwide and eliminate two executive positions.").

nuanced perspective incorporating new understandings in social science, it all makes perfect sense.

The wave of competition that overtook Getty and Corbis mid-decade came to be called "microstock."[157] The term describes the industry category populated by "You."[158] Some representative microstockists are iStockphoto,[159] Shutterstock,[160] and Fotolia.[161] As market analyst Barbara Coffey said, "We have pictures on our cellphones. If I can get a reasonably clear picture and the rights are cleared and I pay $2 for it, then why would I pay Corbis $200?"[162]

Today, the inducement offered by microstock houses to photographers is money. Indeed, microstock houses, in their current mature form, have built their businesses on the same classical economic assumptions as Getty and Corbis, with the idea that you motivate people by paying them. Ironically, however, the microstock industry was born when one person turned his back on money as a reward for creativity and decided simply to share.

In 2000, founder-photographer Bruce Livingstone was looking to become a stock photography entrepreneur, having printed boxes worth of CD-ROMs filled with his stock photos, which he planned to ship to customers.[163] But Livingston found the level of competition in the marketplace so overwhelming, he gave up—or at least he gave up on the idea of making money.[164] Yet he had not lost his drive to provide stock photography to the world. So, he put all of his photos online and made them available for free.[165] The site became popular, and Livingstone began allowing site users with digital cameras to upload their own photos.[166] He only started looking for a way to get people to pay for the photos when his server bills hit $10,000.[167] Livingstone's site, iStockphoto, then started selling credits that could be used to download photos.[168] As iStockphoto's fortunes rose, Getty's plummeted. In 2006, Getty

[157] *See About Us*, ISTOCK, *supra* note 119 ("[Y]ou could get a high-quality image for under a dollar, and the artist who contributed it got paid a royalty. It was an entirely new way of doing things. Some people called it the birth of 'microstock.'").

[158] That is, "You" in the *Time* magazine sense. *See supra* note 150.

[159] *Home Page*, ISTOCK, http://www.istockphoto.com, *archived at* http://perma.cc/98C2-9CXD (last visited Feb. 2, 2014).

[160] *Home Page*, SHUTTERSTOCK, http://www.shutterstock.com, *archived at* http://perma.cc/N6E-QXXF (last visited Feb. 2, 2014).

[161] *Home Page*, FOTOLIA, http://www.fotolia.com, *archived at* http://perma.cc/6MUP-ACZ2 (last visited Feb. 2, 2014).

[162] Hafner, *supra* note 153.

[163] *See* Julie King, *Stock Photograph Redefined*, CANADA ONE (Mar. 2006), http://www.canadaone.com/ezine/mar06/istockphoto.html, *archived at* http://perma.cc/7RSU-MSM5.

[164] *See About Us*, ISTOCK, *supra* note 119.

[165] *Id*.

[166] *Id.*

[167] *Id.*

[168] *Id.*

turned around and bought its tormentor, paying Livingstone $50 million for his company.[169]

Today, iStock, as it's now known, has millions of royalty-free files, all of which are media workparts of some sort—mostly photos, but also illustrations, video footage, and audio.[170] The iStock site claims that it has "millions of members and tens of thousands of contributing artists."[171] Viewed from the perspective of Getty's once-dominant pricing model, iStock's prices on royalty-free images are beyond cheap. For a photo from the basic "Essentials" collection, an unlimited-run license for using a photo in print, such as on a book cover, might be $144.[172] For usage on the web or for a print run of less than a half-million units, a license for the same photo might be just $8.[173] With the purchase of a subscription, the price per image can go as low as 22¢.[174]

A blog post about the impact of microstock photography put it this way: "When the barrier to entry is low, the supply of goods is large and the alternatives available to the buyer many, the price is going to be low."[175]

A commenter to that post tied the economics to history: "In the past, a lot of why photographers got paid so much . . . was because producing [photographs] was a complicated technical process. Well, technological advancements have serious[ly] lowered the bar for entry into these field[s]. And the price reflects

[169] Michael Dunlop, *Interview With Bruce Livingstone*, RETIREAT21, http://www.retireat21.com/interview/interview-with-bruce-livingstone-founder-of-istockphoto, *archived at* http://perma.cc/V2FY-FKTE (last visited Oct. 21, 2014) ("Back in 2006 Bruce sold iStockphoto for $50 million to Getty Images.").

[170] *Home Page*, ISTOCK, *supra* note 159.

[171] *About Us*, ISTOCK, *supra* note 119.

[172] *See, e.g.*, *Couple Canoeing and Relaxing - Stock Image*, ISTOCK, http://www.istockphoto.com/photo/couple-canoeing-and-relaxing-14578114, *archived at* http://perma.cc/DX4J-F2EK (last visited Oct. 4, 2014) (photo priced at one credit for a regular license and 18 credits for a license allowing unlimited print runs); *Download Video and Images: Buy Credits and Subscriptions*, ISTOCK, http://www.istockphoto.com/plans-and-pricing, *archived at* http://perma.cc/5E3W-4BFP (last visited Oct. 4, 2014) (listing credit prices, which vary by quantity purchased; 300 credits purchased in bulk are $2,400, at which price one credit is $8 and 18 credits is $144).

[173] *Id.*

[174] *Id.* (stating that an "Essentials Subscription," which allows 750 downloads monthly, costs as little as $166.58 per month).

[175] King Kaufman, *The Future of Journalism: Photog Thrilled to get Peanuts from* Time, OPEN SALON (July 29, 2009, 9:50 AM), http://open.salon.com/blog/future_of_journalism/2009/07/29/photog_thrilled_to_get_peanuts_from_time, *archived at* http://perma.cc/K6EE-KPVJ; *see also Coins in the Glass Jar Stock Photo 6465698 - iStock,* ISTOCK, http://www.istockphoto.com/photo/coins-in-the-glass-jar-6465698, *archived at* http://perma.cc/KGF2-BQ8M (last visited Oct. 4, 2014) (photo referenced in Kaufman article).

this[.]"[176] To disgruntled professional photographers, he added, "Better get used to it!"[177]

Of course, before any money from already bargain-basement license fees gets to the photographer, iStock needs to take its cut. And it is a big cut: contributors earning the minimum royalty rate get just 15%.[178] There is the possibility of higher royalties if contributors have a large number of downloads or if they agree to an exclusivity program.[179]

Rival company Shutterstock, which bills itself as "the largest subscription-based stock photo agency in the world," offers a slightly different deal, but like iStock, it is neither pricey for buyers nor lucrative for sellers.[180] A subscription, costing less than $250 per month, allows the subscriber to download about 25 images per day.[181] Out of the prices Shutterstock charges customers, it will pay the photographer a maximum of $28 and a minimum of 25¢ per download.[182] But a quarter earned is not necessarily a quarter received. Photographers are put on warning that it may take a while before Shutterstock finds it sensible to make a disbursement: no money is wired into a photographer's PayPal account until earned royalties add up to $75.[183] After that, earnings must hit $75 again before another payment is made.[184] Thus, if a photographer has relatively few images and those images receive only modest downloads, the photographer might be waiting a very long time for even a single payment.

A recent informal survey of over 800 microstock contributors gives a rough idea of the monetary compensation they are getting out of their work. Based on the survey's reported medians, the average contributor had 930 images online

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[176] Beerzie Boy, Comment to Kaufman, *supra* note 175.

[177] *Id.*

[178] *Royalty Schedule Page*, ISTOCK, http://www.istockphoto.com/help/sell-stock/rate-schedule, *archived at* http://perma.cc/D5SA-9ASF (last visited Oct. 5, 2014).

[179] *Id.* (showing that the maximum exclusive royalty rate goes up to 45 percent, which applies for a contributor with 1,200,000 redeemed credits).

[180] *See Shutterstock Becomes the World's Largest Subscription-Based Stock Photography Agency*, SHUTTERSTOCK (Feb. 1, 2006), http://www.shutterstock.com/releases/020106.mhtml, *archived at* http://perma.cc/6TY8-M7JF (stating that with over 500,000 images, Shutterstock is "the largest subscription-based stock photo agency in the world").

[181] *Subscriptions*, SHUTTERSTOCK, http://www.shutterstock.com/subscribe.mhtml, *archived at* http://perma.cc/H86V-LUGK (last visited Sept. 13, 2014) (showing that for under $250 per month, subscribers can get 25 images a day).

[182] *Earning Schedule*, SHUTTERSTOCK, http://submit.shutterstock.com/earnings_schedule.mhtml, *archived at* http://perma.cc/N59M-G4U5 (last visited Sept. 13, 2014) (showing that at lifetime earnings of $0 - $500, earnings per download ranges from $0.25 to $28.00 per download).

[183] *Frequently Asked Questions*, SHUTTERSTOCK, http://submit.shutterstock.com/faq.mhtml, *archived at* http://perma.cc/Z3HS-BDCV (last visited Sept. 13, 2014).

[184] *See id.*

and spent 12 hours a week on microstock work, yielding $3,000 in annual gross income.[185] Taking out the reported $100 in yearly expenses,[186] that means the average microstock contributor made about $3.11 per image. Computed as a wage, the average contributor earned $4.65 an hour—a rate well below the federal minimum wage of $7.25.[187] Moreover, as the survey's author noted, the data "obviously [is] biased towards people who are interested and active in microstock photography and leaves out those who have given up or forgotten they had images online."[188] That is, the data reflects those "who are trying to make this work."[189]

4. When Money is Priceless

With the prices on offer being so miniscule, and the time investment being so substantial, it is implausible that money is the motivator. But a post-classical economic approach, taking account of intrinsic motivation, suggests an explanation: for at least some microstock producers, the exchange of money seems to be less about income and more about acknowledgement that their work has been utilized. That is, money is valued for its communicative value rather than its monetary value.

Scrutinizing the stock photography sites themselves, there is evidence that contributors are looking for positive feedback, gratitude, useful information about their contribution, indications of competence, autonomy, and relatedness.[190]

As one might expect in accordance with self-determination theory, contributors to microstock houses would like to know how their images are being used. A "frequently asked question" that was answered on Shutterstock's site is "Will I know where my content will be used?"[191] Unfortunately for Shutterstock's contributors, there is no way for them to get this information, since royalty-free customers are not required to report how they use downloaded images.[192] Similarly, Fotolia's FAQ includes the question: "How

[185] Tyler Olson, *2013 Microstock Industry Survey – First Look*, MICROSTOCKGROUP (Mar. 2, 2014), http://blog.microstockgroup.com/2013-microstock-industry-survey-first-look/, *archived at* http://perma.cc/89LA-TPRS (indicating 28% of respondents considered microstock their primary source of income and 28% consider themselves full-time microstock artists).

[186] *Id.*

[187] 19 U.S.C. § 206 (2012) (providing for the federal minimum wage of $7.25 an hour).

[188] Olson, *supra* note 185.

[189] *Id.*

[190] *See* PINK, *supra* note 100, at 67; Deci et al., *supra* note 102, at 14; Ryan & Deci, *supra* note 101.

[191] *Submitting Content,* SHUTTERSTOCK (on file with author—source no longer available online).

[192] *Id*.

are my images being used?"[193] The response: "[I]t is impossible for us to know exactly how your images are being used . . . within the license guidelines."[194] Apparently the desire to find out how an image is being used gets the best of some people. Fotolia has warned: "Please note it is strictly forbidden for you to contact buyers."[195] Evidence of the same desires has also been apparent on iStock, where one of the site's top 10 questions from photographers was: "Is there a way to find out where my photos are being used?"[196] The answer: "Only the people that used your photo[] know what it was used for."[197] iStock, however, does provide a "Designer Spotlight" where lucky photographers might find their images featured.[198]

Looking deeper, one finds evidence that photographers see royalties as psychic validations. Consider the explanation offered by Central Pennsylvania photographer and microstock contributor Brad Shearer. In a post titled "Why I shoot stock photography," Shearer wrote:

> Stock photography and more specifically micro stock photography isn't going to make me rich . . . The photos I have for sale on big stock photo don't bring me clients locally. My family and friends aren't impressed with images that come across.
>
> So what does it do for me? Well I want to take photos, I love taking photos, I have to take photos[;] it's what I do. . . . I felt the amount of effort involved in learning how to get good feedback and added expense of popular photo sharing sites was just too much. So for me it's that rush I get when someone purchases my image, the satisfaction in knowing that they looked [all over] and my image stood out the most [to] them for what they wanted[;] that is the ultimate thumbs up or +1 or digg or vote or whatever you want to call it.[199]

Shearer is not alone in his attitude. In April 2009, *Time* magazine ran a cover story called "The New Frugality."[200] The photo used on the cover was of a jar of change.[201] In an ironic turn, the photo illustrated "frugality" in more

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[193] *Frequently Asked Questions*, FOTOLIA, http://www.fotolia.com/Info/Faq/Contributors#c11, *archived at* http://perma.cc/7TSJ-Y45T (last visited Sept. 17, 2014).

[194] *Id.*

[195] *Id.*

[196] *Frequently Asked Questions,* ISTOCK (on file with author; source no longer available online).

[197] *Id*.

[198] *Design Spotlight*, ISTOCK, http://www.istockphoto.com/design_spotlight.php, *archived at* http://perma.cc/C6YK-4GSB (last visited Sept. 19, 2014) (showing the "Design of the Week").

[199] Brad Shearer, *Why I Shoot Stock Photography*, STUDIO BRAD (Nov. 5, 2009) (on file with author; source no longer available online).

[200] Kaufman, *supra* note 175.

[201] *Coins in the Glass Jar*, ISTOCK, *supra* note 175.

ways than one. Instead of outlaying the usual wad of cash to commission the shooting of an original photo, *Time* purchased the right to use an existing image from iStock for an estimated $125.[202] Of that, Robert Lam, the photographer who had uploaded the photo, received about $30.[203]

When news of Lam's $30 national magazine cover hit online discussion boards, there was an outpouring of anger.[204] Lam "got screwed," according to one commenter, who said that Lam's work should have cost *Time* several thousands of dollars.[205]

But Lam himself was not part of the angry mob. To the contrary, Lam was just happy that his photo made the cover of *Time*.[206] He wrote in a discussion forum that he was planning to get a back issue of the magazine—apparently he missed it on newsstands—and that he would frame it.[207] It is not hard to imagine that the frame could cost Lam more than the $30 he was paid in royalties.

As the monetary rewards of stock photography have dwindled to the point of triviality, the transaction costs have become the dominant feature of the economic interaction. The annoyance of uploading photographs to a microstock house and filling out the forms required for being paid is a very large cost compared to the extremely small amount of income that may be earned. This means that a money-incentive/market theory becomes untenable as an explanation for how microstock is being created and distributed.

The straightforward conclusion is that microstock photographers receive their threshold motivation to participate from the psychic rewards of distributing photographs, and not from montetary rewards, despite the fact that monetary awards are a featured part of the microstock business model. In this dynamic of high transaction costs and low monetary payouts, money is still valued, but not for what it can buy. Instead, money is valued for what it says. That is, money in this context serves a social function. It provides information and feedback, confirming the value of a person's creative contribution. Money provides "the satisfaction in knowing" that an image was useful.[208]

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[202] Kaufman, *supra* note 175; *Coins in the Glass Jar*, ISTOCK, *supra* note 175.

[203] Kaufman, *supra* note 175; *The Frugal TIME Cover (and Other Indignities)*, THE ONLINE PHOTOGRAPHER (Jan. 27, 2010), http://theonlinephotographer.typepad.com/the_online_photographer/2010/01/frugality.html, *archived at* http://perma.cc/8VRN-UXZJ (discussing Lam's compensation for use of his photo).

[204] Kaufman, *supra* note 175.

[205] *Id.*

[206] *See The Frugal TIME Cover*, *supra* note 203 (indicating Lam's satisfaction with the sale).

[207] R Studios, Comment to *My Stock Photo on Time Magazine Cover*, MODEL MAYHEM, http://www.modelmayhem.com/po.php?thread_id=480730, *archived at* http://perma.cc/M9KN-MKCM (July 24, 2009).

[208] *See* Shearer, *supra* note 199.

All this suggests that the "market" for stock photography is, in substance, a very convoluted sharing regime. Money is a token of social validation, not a universal, fungible medium of exchange.

While money is an efficient medium of exchange for most transactions, when it comes to microstock, money appears to be a highly inefficient exchange medium. Contributors would seem to be better paid more directly with positive feedback, useful information, and expressions of gratitude. Thus, for stock photography, interpersonal social sharing may be considerably more efficient than the market, since interpersonal sharing caters specifically to social and intrinsic motivations and has low transaction costs.

IV. MECHANISMS FOR SHARING INTELLECTUAL PROPERTY

Up to this point, I have explained the "why" of sharing. This Part concerns the "how." There are two basic modes of sharing. Person-to-public sharing involves the one-way dedication of all or some intellectual property entitlements to the public. Person-to-person sharing involves the informal granting of permissions on a case-by-case basis arrived at through two-way communication between the sharer and sharee.

A. *Person-to-Public Sharing*

Person-to-public sharing regimes constitute the main extant alternative to the market for distributing intellectual goods. Persons wanting to share intellectual property can simply renounce some or all of their entitlements to a certain work, thus giving it over in part or in whole to the public at large.

The dominant feature of person-to-public sharing is that it involves a one-way communication. This has the advantage of lowering transaction costs, since individual bargains need not be struck each time some intellectual work is used or repurposed. There are two principal shortcomings, however.

First, because the sharing is to the entire world and for potentially all possible uses, the sharer must decide up-front what restrictions, if any, will be placed on use by members of the public. Concerns—including who might use the copyrighted work and for what—may cause the sharer to over-restrict uses. That is, the sharer may wind up prohibiting many uses that the sharer would in reality be happy to allow. Second, owing to its one-way nature, person-to-public sharing generally fails to take full advantage of the social impulses of potential sharers.

These two issues are discussed below in the context of three modalities for person-to-public sharing: public-domain dedication, free-software licenses, and the Creative Commons project. To begin with, however, it makes sense to discuss, in a general sense, the fear of being played for the fool by surrendering intellectual property entitlements. This central concern forms the primary design consideration for projects that have sought to encourage person-to-public sharing.

1. Apprehension of Cadgery and Offensive Use as Barriers to Sharing

The fear of being cadgered—getting taken advantage of or being played for the fool—is a substantial barrier to sharing. Take the example of distributed computing. Volunteers have willingly given spare microprocessor cycles over to the search for extraterrestrial intelligence and efforts to find cures for diseases.[209] There are no volunteer movements afoot, however, to give spare computing capacity to private hedge funds looking to analyze securities exchange data to find new ways to beat the market. Nor will there be. It would not matter if sharers were guaranteed not to suffer in the slightest by a hedge fund's use of their spare processing cycles. Even in a capitalist society that celebrates success, wealthy people who are simply trying to get wealthier cannot expect gratuities from strangers.

This sentiment was expressed by a photographer/blogger in regard to Creative Commons licenses that allow commercial reuse of works: "It's putting money into the coffers of large corporations, whose executives like CC-enabled crowdsourcing even better than Third World child labor."[210]

While overblown and hyperbolic, this comment illustrates a deeply engrained sense of morality that, at some level, almost everyone shares: kindness should be reciprocated. When kindness could be reciprocated, but is not, an instinctive propriety urges us to refrain from beneficence.[211]

Another barrier to sharing may be the fear of having the shared item used for some immoral or offensive purpose. For instance, putting a photograph under an irrevocable license or donating it to the public domain means that it could be used by any number of operators whom the donor might consider unsavory, such as pornographers or campaigners for political causes with which the donor disagrees.

These concerns are not merely theoretical. Producers and distributors of pornography have a need for stock photography as other media producers do. In 2006, TVX Films, the distributor of a pornographic DVD titled *Body Magic*, used as cover art a photo it found on Flickr—a self-portrait in which the female photographer posed demurely in a top hat while framed in sumptuous pink curtains.[212] The photographer, who was 14 years old at the time she took the

[209] *See* Benkler, *supra* note 51, at 291.

[210] Scott Baradell, *Why Photographers Hate Creative Commons*, BLACK STAR RISING (Dec. 19, 2007), http://rising.blackstar.com/why-photographers-hate-creative-commons.html, *archived at* http://perma.cc/N8N3-KF7U. Baradell was speaking of Creative Commons licenses without a non-commercial limitation. Creative Commons licenses are described in detail in Part VIII.D, *infra.*

[211] This sort of ingrained moral sense is coincident with what one might expected in a social organism with a psyche shaped by natural selection. *See, e.g.*, RICHARD DAWKINS, THE SELFISH GENE, 202-33 (1989) (explaining the evolutionarily stable tit-for-tat strategy in iterative games of prisoner's dilemma).

[212] *See* Lara Jade, *No Easy Way Out*, FLICKR (Jan. 16, 2006), http://www.flickr.com/photos/larajade/147723109/, *archived at* http://perma.cc/GA2F-

photo, was extremely displeased when she found out she was featured on the cover of *Body Magic*.[213] As it so happened, TVX Films used the photo despite the fact that the photographer had reserved all rights.[214] That is, the photograph was not dedicated to the public domain or even offered under a person-to-public sharing license.[215] The episode shows that for the photographer, it paid to retain her intellectual property rights, as it was her copyright that allowed her to demand the studio cease distribution of the DVDs bearing her image.[216]

An example from the political arena is 17-year-old Casey Knowles, who objected to the use of her image, shot when she was 8 years old, in a television commercial produced by the presidential primary campaign of Hillary Rodham Clinton.[217] The ad asked viewers to consider which presidential candidate would be better prepared to answer a call at 3:00 a.m. about an unfolding crisis. Knowles unwittingly acted the part of a vulnerable child sleeping in bed as an unknown threat to America materialized. Knowles, who supported Clinton's rival Barack Obama for the nomination, was displeased with the ad's "fear-mongering."[218] Knowles appeared in the ad because the Clinton campaign obtained the footage from Getty Images, which in turn obtained the footage as leftovers from an advertisement produced for a railroad, in which Knowles had actively participated.[219]

Thus, for many people, the lack of some screening mechanism that lets in deserving beneficiaries but screens out objectionable uses and users may be a substantial barrier to the sharing of intellectual works.

JHYT (depicting self-portrait photograph of Lara Jade); Lara Jade, *HELP!! (please read)*, FLICKR (May 25, 2007), http://www.flickr.com/photos/larajade/513641346/, *archived at* http://perma.cc/C23V-ZVV3 (depicting the same photograph); Allen Dell, P.A., *Teen Photographer Sues Pornographers Over Unauthorized Use of Image*, PRNEWSWIRE (July 31, 2007), http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/07-31-2007/0004636261&EDATE=, *archived at* http://perma.cc/3723-L9CN (reporting on TVX Films's unauthorized use of Lara Jade's photograph posted on the Internet).

[213] *See* Allen Dell, P.A., *supra* note 212 ("'I was absolutely horrified to see my work and my own picture being used on that kind of movie,' said Lara Jade. 'It's just appalling.'").

[214] *See* Jade, *No Easy Way Out*, *supra* note 212.

[215] *See* Jade, *HELP!! (please read)*, *supra* note 212 ("[I]t was clear that wasn't a public domain when underneath each of my picture there is a disclaimer CLEARLY stating the obvious (that's it's copyright).").

[216] *See* Allen Dell, P.A., *supra* note 212.

[217] *See Girl in Clinton Ad Now 17, Supports Obama*, CBS NEWS (Mar. 9, 2008, 8:46 PM), http://www.cbsnews.com/stories/2008/03/09/politics/main3920220.shtml, *archived at* http://perma.cc/NZS4-JXGU.

[218] *Id.*

[219] *Id.*

2. Public-Domain Dedication

The simplest sort of person-to-public mode of sharing is dedication to the public domain. This form of sharing carries no restrictions. All entitlements to the intellectual work are surrendered, putting the sharer in the position she or he would have been in if there were no overarching scheme of intellectual property law. To the extent that persons wish to make a public-domain dedication and do so effectively, the arrangement is economically efficient, since it changes surplus intellectual property entitlements into usable wealth. The questions are to what extent people wish to make public-domain dedications, and to what extent they are legally able to do so.

Perhaps surprisingly, there is a legal barrier to public-domain dedications. In fact, no easy way exists under American copyright law to effect a donation of one's copyright to the public domain.[220] The copyright system takes a paternalistic approach in that it seeks to allow artists and authors, or their heirs, to wriggle out of deals with big media companies that were concluded on less-than-generous terms.[221] The side effect of these laws is that it becomes legally difficult to permanently abandon copyright.

Putting aside legal hurdles, however, public-domain dedications are nonetheless unappetizing, even to most people inclined toward sharing. As discussed, there are two broad reasons why people are wary of sharing excess intellectual property entitlements: apprehension of cadgery and apprehension of offense. Both impediments bear heavily on a prospective dedication to the public domain. If all entitlements to a work are surrendered, then there is no legal means of resisting cadgering or offensive use.

In general, the creation of more complex person-to-public sharing regimes has been driven by a perceived need to overcome these impediments and give prospective sharers piece of mind that their works will not be used in ways that would leave sharers regretful.

3. Free Software Licenses

The most notable and economically significant real-world example of a person-to-public sharing regime for intellectual property is open-source software licensing, and, in particular, the GNU Public License, or "GPL."[222]

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[220] *See* Timothy K. Armstrong, *Shrinking the Commons: Termination of Copyright Licenses and Transfers for the Benefit of the Public*, 47 HARV. J. ON LEGIS. 359, 391-99 (2010) (describing the legal difficulties of intentionally donating a copyrighted work to the public domain).

[221] *See* 17 U.S.C. §§ 203, 304(c) (2012) (specifying several situations in which transfers of, or licenses to, copyrighted works are subject to termination).

[222] *See* GNU GENERAL PUBLIC LICENSE VERSION 1, http://www.gnu.org/licenses/old-licenses/gpl-1.0.txt, *archived at* http://perma.cc/AH35-DL92 (last visited Feb. 13, 2014) (discussing the original GPL, dated February 1989); *see also* GNU GENERAL PUBLIC LICENSE VERSION 3, http://www.gnu.org/copyleft/gpl.html, *archived at* http://perma.cc/X2V6-E9BF (last visited Sept. 21, 2014) (discussing the most recent GPL,

The essential mechanism in the license, sometimes called "copyleft"[223] or "share-alike,"[224] is a legal restriction that forces compliance with the Golden Rule—that is, do unto others as you would have them do unto you.[225] Software code released under the GPL can be used, modified, improved upon, and redistributed by anyone for any purpose, but all modifications and improvements must be shared with the public on the same terms that the original code was shared.[226] The GPL is the brainchild of computer programmer Richard Stallman, who embarked on the open-source software project after a frustrating experience in which he shared code with an acquaintance but was rebuffed when he sought the same favor in return.[227]

Intrinsic motivation plays a key role in the production of open-source software. Researchers have found that the strongest and most pervasive driver of open-source coding works is intrinsic motivation.[228] Contributions are spurred by the "desire to give a gift to the programmer community."[229]

The GPL has been a great boon economically. Stallman's license has led to the development of operating systems and full suites of applications that compete toe-to-toe with the offerings of Apple, Microsoft, and Adobe.[230]

dated June 27, 2007).

[223] *See* GNU GENERAL PUBLIC LICENSE VERSION 3, *supra* note 222 ("The GNU General Public License is a free, copyleft license for software and other kinds of works.").

[224] *See About the Licenses*, CREATIVE COMMONS, http://creativecommons.org/about/licenses/meet-the-licenses, *archived at* http://perma.cc/CT28-673K (last visited Feb. 3, 2014) (describing the "ShareAlike" feature of certain Creative Commons licenses).

[225] *See, e.g.*, *Luke* 6:31; *Luke* 10:27; *Matthew* 7:12 (espousing the Golden Rule).

[226] *See* GNU GENERAL PUBLIC LICENSE VERSION 3, *supra* note 222 ("For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received.").

[227] *See* SAM WILLIAMS, FREE AS IN FREEDOM: RICHARD STALLMAN'S CRUSADE FOR FREE SOFTWARE 1-12 (Laurie Petrycki ed. 2002); *Overview of the GNU System,* GNU OPERATING SYSTEM (Apr. 12, 2014, 12:39 PM), http://www.gnu.org/gnu/gnu-history.html, *archived at* http://perma.cc/GG43-9L5T.

[228] *See* Karim R. Lakhani & Robert G. Wolf, *Why Hackers Do What They Do: Understanding Motivation and Effort in Free/Open Source Software Projects, in* PERSPECTIVES ON FREE AND OPEN SOFTWARE 3, 12 (Joseph Feller, Brian Fitzgerald, Scott Hissam & Karim Lakhani eds., 2005) (discussing research findings, based on a survey of computer scientists, that showed "enjoyment-based intrinsic motivation" as the top single reason to contribute to projects); PINK, *supra* note 100, at 23 (citing the same research findings).

[229] *See* Jurgen Blitzer, Wolfram Schrettl & Philipp J. H. Schroder, *Intrinsic Motivation in Open Source Software Development,* 35 J. COMP. ECON. 160, 162 (2007); PINK, *supra* note 100, at 23 (citing Blitzer et al., *supra*).

[230] Open-source operating systems include Linux, which runs on all 10 of the top-10 fastest supercomputers. *See* Gary Marshall, *The 10 Fastest Computers in the World, Speed Week: They're Enormous, Expensive and They're Running Linux,* TECHRADAR (Apr. 18, 2011), http://www.techradar.com/news/computing/the-10-fastest-computers-in-the-world-

Indeed, the GPL and other open-source software licenses have been an unequivocal success when it comes to economic growth through the sharing of computer code. The GPL and its siblings were not, however, designed for personally expressive works.[231] The primary person-to-public sharing vehicle for creative works—Creative Commons—can be seen as an attempt to extend the program of open-source code to the realm of creative, expressive works.

4. Creative Commons

Creative Commons is a nonprofit organization that works to foster the sharing of creative works.[232] Its primary task has been to provide simple, ready-made means for persons to selectively surrender certain copyright entitlements.[233] The Creative Commons system is comprised of a suite of standardized "CC" licenses that irrevocably give the public at large permission to use a copyrighted work under specified conditions.[234]

The stated aims of Creative Commons are to "rebuild a public domain"[235] and to increase the amount of easily accessible raw source materials that can be

941548, *archived at* http://perma.cc/AZ4G-ZD8W. Linux also runs on most of the world's Web servers. *See* James Niccolai, *Ballmer Still Searching for an Answer to Google*, PCWORLD (Sept. 26, 2008, 2:00 AM), http://www.pcworld.com/businesscenter/article/151568/ballmer_still_searching_for_an_answer_to_google.html, *archived at* http://perma.cc/Z9FB-6JZ7 (discussing Microsoft's attempts to compete with Linux in web server applications, where "60 percent [of servers] run Linux"). Linux code is mostly licensed under the GPL. *See Debian Project Summary*, OPENHUB, https://www.ohloh.net/p/debian/analyses/latest, *archived at* http://perma.cc/A5EF-96XS (last visited Feb. 13, 2014) (describing Debian, a free operating system for which the GNU project provides key tools). Another open-source operating system is the Linux-based Android operating system for phones and tablets. Part of Android is licensed under the GNU GPL v2, while the rest is licensed under the Apache License 2.0, which lacks the GPL's copyleft restriction. *See Licenses*, ANDROID, http://source.android.com/source/licenses.html, *archived at* http://perma.cc/9UWM-XA62 (last visited Feb. 13, 2014).

[231] *See* Richard Stallman, *The GNU Manifesto*, GNU OPERATING SYSTEM (Apr. 12, 2014, 12:39 PM), http://www.gnu.org/gnu/manifesto.html, *archived at* http://perma.cc/G4Z3-2S8G.

[232] *See About Creative Commons*, CREATIVE COMMONS, http://creativecommons.org/about, *archived at http://perma.cc/R2L5-XQ93* (last visited Sept. 13, 2014) (introducing viewers to Creative Commons and its mission to "maximize[] digital creativity, sharing, and innovation").

[233] *See* CREATIVE COMMONS, http://www.creativecommons.org, *archived at* http://perma.cc/6NGV-79ZK (last visited Feb. 3, 2014) (describing the Creative Commons mission to "help[] you share your knowledge and creativity with the world").

[234] *See About the Licenses*, CREATIVE COMMONS, http://creativecommons.org/licenses/, *archived at* http://perma.cc/LA3D-AYSJ (last visited Sept. 13, 2014) (describing Creative Commons licenses, including the specific features of each license).

[235] LESSIG, *supra* note 27, at 282-83.

used by the public in fashioning new creative works.[236] On the donor side, Creative Commons responds to a perceived desire of persons to undo at least some of the effects of the currently prevailing copyright-by-default system.[237] The slogan for CC-licensed works is "some rights reserved," which is meant to draw a comparison to the copyright-assertive phrase "all rights reserved."[238]

a. *How CC Licenses Work*

To blunt varying concerns and to accommodate multiple increments of generosity among donors, the core licenses offered by Creative Commons comprise varying combinations of four key provisions: (1) Attribution, (2) NonCommercial, (3) No Derivatives, and (4) ShareAlike.[239]

The four restrictions work as their names imply. The "Attribution" provision requires licensees to provide a credit to the donor and point to the original source of the work so that others can find it.[240] The "NonCommercial" condition limits the permission to use the licensed work to non-commercial uses.[241] The "No Derivatives" condition limits licensees to using the work in its original form, without revising it or employing it as a media workpart in another work.[242] The "ShareAlike" provision is a copyleft type of limitation incorporating the same basic idea as that found in the GNU-GPL license used for open-source software. With a ShareAlike license, the licensee is permitted

[236] *See History*, CC WIKI (Apr. 28, 2011, 9:32 AM), http://wiki.creativecommons.org/History, *archived at* http://perma.cc/8KY2-UKVT.

[237] *See Frequently Asked Questions*, CC WIKI (Sept. 3, 2014, 5:40 PM), http://wiki.creativecommons.org/FAQ, *archived at* http://perma.cc/FG9U-K2U9.

[238] *See History*, CC WIKI, *supra* note 236.

[239] *See generally About the Licenses*, CREATIVE COMMONS, *supra* note 234.

[240] *See, e.g.*, *Attribution-NonCommercial-NoDerivs 3.0 Unported*, CREATIVE COMMONS, http://creativecommons.org/licenses/by-nc-nd/3.0/legalcode, *archived at* http://perma.cc/DPL7-8ZD7 (last visited Feb. 3, 2014) (requiring users to provide the name of the creator of the licensed work when distributing said work).

[241] *See, e.g.*, *id.* (not permitting licensees to use the creator's work "in any manner that is primarily intended for or directed toward commercial advantage or private monetary compensation").

[242] *See, e.g.*, *id.* (not permitting licensees to make any adaptations to the creator's work except those "technically necessary" to exercising the licensee's rights to reproduce the work, incorporate the work into one or more collections, and distribute the work). There may be some question as to whether including a piece of audio or a stock photograph in a motion picture would cause the motion picture to be considered a "derivative work" as that term is used the copyright statute. But in the context of Creative Commons licenses, a licensee should assume that No-Derivatives restriction prohibits such applications. *See Frequently Asked Questions*, CC WIKI, *supra* note 237 ("Under CC licenses, synching music in timed relation with a moving image is always considered an adaptation."); *see also* Johnson, *Rethinking Sharing Licenses*, *supra* note 40, at 416 ("[I]t seems clear enough that a Creative Commons license with the No-Derivatives limitation does not permit a work to be incorporated into a film.").

to use the licensed work as a media workpart only on the condition that the incorporating work is licensed to the general public on the same terms.[243]

These provisions are then mixed together dim-sum style to create various licenses to suit varying levels of generosity among donors. The barest license—employed by the most generous donor—is the CC-BY or "Attribution Only" license, which allows any use of the licensed work, so long as it is accompanied by proper attribution.[244] The most restrictive license is the CC-BY-NC-ND, which contains the Attribution, NonCommercial, and No Derivatives limitations, meaning that a licensee can only redistribute the work non-commercially, with proper attribution, and without alteration.[245] The CC-BY-NC-ND license is referred to as the "free advertising" license because it allows licensees to distribute the licensed material in a manner that provides free advertising for the creator.[246]

b. *Successes and Limitations*

The Creative Commons organization was founded in 2001,[247] and its first licenses were released in 2002.[248] There has been widespread adoption of Creative Commons licenses. As of mid-2005, Creative Commons reported that 53 million pages on the web carried CC-licensed content.[249] By the fall of 2008, there were at least 172 million pages with Creative Commons licenses.[250] At a minimum, the data from Creative Commons confirms the contemporary existence of an attitude held by at least a significant number of

[243] *See, e.g.*, *Attribution-NonCommercial-ShareAlike 3.0 Unported*, CREATIVE COMMONS, http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode, *archived at* http://perma.cc/VYV8-7VNM (last visited Feb. 3, 2014) (restricting licensees to distribution of creator's work on the same terms as their license agreement).

[244] *See Attribution 3.0 Unported*, CREATIVE COMMONS, http://creativecommons.org/licenses/by/3.0/, *archived at* http://perma.cc/934U-LFKX (last visited Feb. 3, 2014).

[245] *See Attribution-NonCommercial-NoDerivs 3.0 Unported*, CREATIVE COMMONS, http://creativecommons.org/licenses/by-nc-nd/3.0/, *archived at* http://perma.cc/JY5H-G5KL (last visited Feb. 3, 2014).

[246] *See About the Licenses*, CREATIVE COMMONS, *supra* note 234.

[247] *History*, CC WIKI, *supra* note 236.

[248] *Id.*

[249] *See* Mike Linksvayer, *53 Million Pages Licensed*, CREATIVE COMMONS (Aug. 9, 2005), http://creativecommons.org/weblog/entry/5579, *archived at* http://perma.cc/7B72-NMWS. Note that the figure was obtained by counting the number of links back to Creative Commons licenses as reported by the Yahoo! search engine on August 8, 2005. This figure thus would include pages that linked to Creative Commons licenses for reference, but not as part of an actual licensing of content.

[250] *See* Johnson, *Rethinking Sharing Licenses*, *supra* note 40, at 407-08 n.46 (describing search filtered for pages tagged with Creative Commons licenses). It does not appear that it is possible to duplicate this particular search today via the available interface; thus a more recent number that is comparable to the 2008 figure does not appear to be producible.

people that the full panoply of copyright entitlements is not important to them. What the numbers do not show is how much use has been made of CC-licensed content, making the ultimate level of impact harder to gauge. Nonetheless, it is clear that Creative Commons has been highly successful, fostering many sharing transactions that would not have taken place without it.

Insofar as we might desire for the Creative Commons project to eliminate as much copyright overkill loss as possible, there are four reasons to believe that the Creative Commons system, as currently constituted, will provide less-than-optimal results: (1) there are reasons to believe that Creative Commons licenses are not well suited to the sharing of media workparts in many or most situations in which there is both a need for the workparts and a willingness to share them; (2) the Creative Commons licensing scheme exhibits some problems with complexity, ambiguity, and confusion among its user base; (3) the Creative Commons model of sharing is not well-positioned to best leverage the sorts of intrinsic/social motivations that drive people to engage in creative labors and share the fruits of those labors; and (4) no matter how well-executed, a system of standardized public sharing licenses will always leave gaps—that is, unexploited circumstances where a person would be willing to share an intellectual work for a certain use, but where that use is not embraced by any of the available licenses to which the licensor is amenable.

I will explain each of these in turn.

c. *Problems with Using CC for Workparts*

The Creative Commons suite of licenses is, as a general matter, not well suited to the interchange of media workparts among citizen media producers.[251] Why not? To begin with, the CC licensing system does not take account of the distinction between media workparts and finished productions. This is important because creators are likely to have differing attitudes toward each. Specifically, an artist may be quite open to the idea of allowing people to use, for free, media workparts that the artist has produced. But that same artist may be very reluctant to surrender copyright entitlements to a finished work. For example, a filmmaker may be happy to allow a stranger to use, edit, and incorporate some of the filmmaker's b-roll footage into a motion picture project. But that same filmmaker may not wish to allow anyone to re-cut a finished film that reflects a fully realized artistic vision.

The problem in this regard arises in connection with the various flavors of CC-license restrictions. Limitations that lower the barriers for participation by sharers tend to discourage use by potential sharees, and limitations that lower the barriers for sharees tend to discourage sharers.

Consider the ShareAlike provision. ShareAlike is an easy choice for sharers, because it ensures that licensees do not receive a windfall. If they borrow, they incur the obligation to share. But there is limited usefulness for ShareAlike-

[251] I have written about this at greater length previously. *See* Johnson, *Rethinking Sharing Licenses*, *supra* note 40, at 398-99.

licensed content from the perspective of potential sharees. If a filmmaker uses ShareAlike-licensed footage in a film, the resulting film is then required under the terms of the ShareAlike license to be shared forward—meaning that it can be cut-up, re-ordered, and changed to reflect a different vision, by anyone who is interested in doing so.[252]

Another problem stems from the NonCommercial provision. Choosing a license without this limitation permits downstream uses that many creators regard as unfair. The NonCommercial limitation blocks CC-licensed content from aiding a profit-motivated activity by an entity that would not reciprocate the same kind of generosity.[253] Thus, the NonCommercial limitation is attractive to many people who are generous only to a point. The unfortunate effect of the NonCommercial provision is that it may needlessly prevent downstream uses that the donor would find unobjectionable. As one person blogged, the NonCommercial option is "too restrictive for artists who might want to stay open to making money on the work in the future or are just plain unsure what exactly they will be doing with their finished product."[254]

There is also the possibility that a creator's CC-licensed work may be used in ways that will embarrass the donor or otherwise cause the donor to regret the decision to license the material to the public. The Attribution provision—a baseline requirement in all CC licenses—can actually exacerbate this problem. As one person explained online: "If you're not careful, you might inadvertently grant permission for your photo to appear on a giant billboard for herpes medication, or in the newsletter of some political organization you despise."[255]

Another blogger wrote, "Some say that I should be happy that people want to use my photos and I am getting free publicity . . . but it becomes a whole different situation when you are getting flak about photos you took being used in manners not intended[.]"[256]

d. *Complexity, Ambiguity, and Confusion*

The Creative Commons project has aimed to create a system of licenses that are simple. Yet despite considerable success, the goal of simplicity has, in many ways, remained elusive. First, staying in compliance with Creative

[252] *See, e.g.*, *Attribution-NonCommercial-ShareAlike 3.0 Unported*, *supra* note 243.

[253] *See, e.g.*, *Attribution-NonCommercial-NoDerivs 3.0 Unported*, *supra* note 245.

[254] Lisa Rein, *Creative Commons Licenses: Pros and Cons of Each*, LISA REIN'S GRADUATE PAPERS AND RESEARCH – SAN FRANCISCO STATE UNIVERSITY (July 21, 2009), http://video.lisarein.com/sfsu/guide/prosandcons.html, *archived at* http://perma.cc/TE66-PLKV.

[255] Baradell, *supra* note 210 (discussing difficulties Creative Commons licenses pose to photographers and attributing these words to another person, Daryl Lang).

[256] Jeremy Johnstone, *Photo Licensing and the Creative Commons,* http://www.jeremyjohnstone.com/blog/2007-12-09-photo-licensing-and-the-creative-commons.html, *archived at* http://perma.cc/6H5V-ELZV (Dec. 9, 2007, 1:36 PM); *see also* Baradell, *supra* note 210 (quoting the same).

Commons licenses can be a somewhat complex task for a licensee. Second, licensing terms are ambiguous in key regards. Third, the scheme as a whole is confusing to many potential users, limiting its beneficial impact.

One aspect of the complexity of Creative Commons licenses can be found in the Attribution provision, which is present in all Creative Commons licenses. The provision requires the licensee to provide a credit to the author of the licensed material.[257] Attribution is simple in concept, but less simple in practice. The attribution must include the author's name or pseudonym, along with the names of any other parties designated by the licensor.[258] This designation may be made in a myriad of places—adjacent to the licensor's copyright notice, inside the licensor's terms of service, or by any other "reasonable means,"[259] meaning the licensee must undertake a certain amount of due diligence. The attribution must also include the title of the work used, if the work has a title,[260] along with the web address that the licensor specifies to be identified with the work.[261] Further, there is a kind of favored-nations clause tied to the credit provided to the licensor. The credit must appear "in a manner at least as prominent as the credits for the other contributing authors."[262] Additionally, users of CC-licensed content have some duty to be reasonably responsive to communications from the licensor, since CC licenses require licensees to remove attribution, "to the extent practicable," after receiving a request to do so from the credited party.[263]

There are also considerable problems with ambiguity, especially as to the NonCommercial provision. According to the terms of the license, the NonCommercial restriction means that the work cannot be used in any manner that is "primarily intended for or directed toward commercial advantage or monetary compensation."[264] This language permits multiple interpretations. One blogger, Gordon Haff, noted, "[S]tart squinting hard at the line that separates commercial from noncommercial and it starts to get fuzzy in a

[257] *See About the Licenses*, CREATIVE COMMONS, *supra* note 234.

[258] *See, e.g.*, *Attribution 3.0 Unported*, CREATIVE COMMONS, § 4(b), http://creativecommons.org/licenses/by/3.0/legalcode, *archived at* http://perma.cc/72WL-RLR6 (last visited Feb. 3, 2014) (requiring licensees to properly attribute the creator or other parties designated for attribution).

[259] *Id.*

[260] *Id.*

[261] *Id.*

[262] *Id.*

[263] *Id.* at § 4(a) ("If You create an Adaptation, upon notice from any Licensor You must, to the extent practicable, remove from the Adaptation any credit as required by Section 4(b), as requested."); *Frequently Asked Questions*, CC WIKI, *supra* note 237 ("In addition, if the licensor of a work requests that you remove the identifying credit, you must do so to the extent practical.").

[264] *Frequently Asked Questions*, CC WIKI, *supra* note 237.

hurry."[265] Haff offered several examples of cases where the meaning is ambiguous:

> What if I have some AdSense advertising on my Web page or blog? . . . What if I use the photo in an internal company presentation? (All companies are commercial enterprises, after all.) What if I'm using those photos as "incidental" illustrative content in a presentation I'm being paid to give?[266]

Even without getting into the details, the entire Creative Commons scheme is seen as unduly confusing by many people. While the licenses and their various provisions may seem quite simple to lawyers and legal scholars, that is apparently not the case for many laypersons.[267]

e. *Disconnect with Sociality and Intrinsic Motivation*

Creative Commons appeals to a sense of social responsibility on the part of those who would make donations of a portion of their copyrights through CC public licenses. Thus, it is notable that Creative Commons, in its current incarnation, does little to leverage social and intrinsic motivations in the way that many leading sharing models do. When sharers apply Creative Commons licenses to their content, they make a one-way dedication of their work, setting it free in the Internet-connected world. This sort of transaction lacks explicit sociality. Without any communication from the licensee to the licensor, there is necessarily a lack of positive feedback, gratitude, and useful information, which are intrinsic-motivation agonists.[268]

f. *Gaps*

The Creative Commons project has clearly had tremendous success in achieving adoption of its sharing licenses. But no matter how successful CC licenses are, there will necessarily be gaps. That will be true for any standardized licensing scheme. So long as the sharing paradigm requires licensors to choose from a pre-determined set of choices to selectively surrender copyright entitlements, there will be some beneficial sharing transactions foregone. Even if a sharer selects the optimal choice among

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[265] Gordon Haff, *Does the Noncommercial Creative Commons License Make Sense?*, CNET (Nov. 27, 2007), http://news.cnet.com/8301-13556_3-9823336-61.html, *archived at* http://perma.cc/T6NX-SFSL; *see also* Baradell, *supra* note 210 (quoting much of the same).

[266] Haff, *supra* note 265.

[267] One frustrated person wrote, "Perhaps those who created the descriptions of these licenses feel they are simple to understand. I'm going to admit here that they aren't to me . . . . Before you dismiss this comment I want to mention that I have a college degree, tested in the top 99 percentile in my college entrance exams, and could join Mensa if I was into that kind of thing." Comment of Internet Strategist (March 26, 2009, 12:26 PM) to Frederic Lardinois, *Creative Commons on Flickr: Users Prefer Restrictive Licenses*, READWRITEWEB (March 26, 2009) (on file with author; source no longer available online).

[268] *See* PINK, *supra* note 100, at 67; Deci, *supra* note 102, at 14.

available standardized sharing licenses, unless the terms of the sharing licenses are exactly co-extensive with the sharer's generosity, then a certain range of beneficial sharing transactions will be prevented.

This effect is, of course, not limited to the intellectual property context. Standardization necessarily involves a trade off with customization. The benefits of standardization are, of course, commonly understood to outweigh the disadvantages in many contexts. Standardization facilitates many transactions that would otherwise be prohibitively expensive. Clothing is a ready example: the manufacture of off-the-rack suits means that more people will be able to afford suits than would be the case if all suits were custom-tailored.

In the context of intellectual property sharing licenses, the advantage of standardization is the lowering of transaction costs so that more persons will allow, by license, more beneficial transactions than would take place if customized licenses were required for each transaction. Undoubtedly standardization is beneficial in such contexts. But even if beneficial, standardization still leaves gaps. This means that a system that is compatible with standardized licenses while facilitating gap-filling may be more optimal than a standardized licensing regime alone.[269]

B. *Person-to-Person Sharing*

Person-to-person sharing offers a path to furthering expression and providing economic growth where markets and public-licensing schemes exhibit substantial drawbacks. The case for person-to-person sharing builds on the above-reviewed social science, business-management literature, and economic theory, as well as the discussion about status-quo systems of distributing media workparts.

1. Barriers Unique to Person-to-Person Sharing

While apprehension of cadgery and offensive use[270] may be a substantial barrier for potential sharers in person-to-public sharing systems, person-to-person sharing does not face the same impediment. When sharing is consented to on a case-by-case basis in the context of a direct, two-way line of communication between the sharer and sharee, there is no need for defensive line-drawing in advance. This is a salient advantage of person-to-person sharing.

Even as apprehension of cadgery and offensive use are cured by interpersonal ad hoc sharing, there are other, unique barriers for person-to-

[269] One such system is Konomark, which uses a standardized invitation to signal a copyright owner's willingness to engage in person-to-person sharing on a case-by-case basis. A Konomark may be used along with a Creative Commons license: if the CC license does not cover a particular use, the Konomark signals a general inclination to go beyond the CC terms. Konomark is described in more detail in Part V.B. below.

[270] *See supra* Part IV.A.

person sharing. The orientation of these barriers, however, is reversed: instead of facing potential sharers, the barriers face persons who would want to receive the benefit of some shared intellectual property resource. The problem is not, of course, that potential sharees are likely to have objections to being granted permission to do something. The problem is in learning about opportunities for gratis licenses in the first place. That is, the barrier is informational.

As a practical matter, when it comes to using overkill works as media workparts in new works, the only way a potential sharer can know who the potential sharee is and what they want is for the potential sharee to make the first communication. In other words, the potential beneficiary must ask. And therein is the potential problem: shyness. Asking for something to be provided for free triggers feelings of embarrassment and even implicates societal taboos about begging. That is the psychic side of shyness. Additionally, there is the economic side of shyness. People asking for something without offering something in return may expect to be summarily turned down most of the time. That means that asking strangers for gratuitous gifts can be costly—in an economic sense—because of the time wasted in getting turned down.

To summarize: The potential for cadgery and unseemliness, the bane of person-to-public sharing, is largely a non-issue for person-to-person sharing. Yet spontaneous person-to-person sharing faces barriers in the form of transaction costs—both social and economic—that arise from uncertainty in knowing whether an inquiry for a gratis license will be welcomed or rebuffed.

The key to overcoming those transaction costs is signaling.

2. The Role of Signals in Overcoming Barriers

Markets, in order to work efficiently, depend on a free flow of information. It is well understood in economics that incomplete information can cause market failure.[271] One way to overcome incomplete information is for signals to be sent prior to the transaction, thus filling in missing information. Signals are means by which parties in a market can overcome asymmetric information that might bar mutually beneficial transactions.[272]

The theory of marketplace signals was principally developed by Nobel Prize winning economist Michael Spence.[273] In a seminal paper, Spence showed how post-secondary education could be understood as a kind of economic signal, sent by job seekers to employers.[274] As a signal, the existence of post-secondary education allows employers to gain information, in advance of hiring, about which workers will be the most productive. With such a signal,

[271] *See, e.g.*, PINDYCK & RUBINFELD, *supra* note 113, at 583 ("[W]hen some economic participants have better information than others, markets may fail to allocate goods efficiently or may not even exist.").

[272] *See id.* at 623.

[273] *Id.*

[274] Michael Spence, *Job Market Signaling*, 87 Q.J. ECON. 355, 367-68 (1973).

employers can then confidently agree to pay higher salaries to workers with higher levels of education.

The observation that more educated workers are more likely to be productive may not sound terrifically earth-shattering. But Spence showed that post-secondary education could serve this function as a signal for employers even if the education itself did not help the worker to become more productive.[275] That is, in the context of a functioning economy, a college degree could become entrenched as an economic signal, causing employers to offer higher salaries to college grads, even if college itself did absolutely nothing to make the graduate a better employee. What matters, in Spence's analysis, is that college is less costly for good future employees than it is for not-as-good future employees. The key factor in the cost of college is not the tuition, room, and board, but the mental labor required. Spence's analysis assumes that college will be "cheap"—that is, easy and not terrifically off-putting—for people who are smart and motivated—the kind of people who make great employees; but college will be "expensive" for people who are lazy and not as bright—at least compared with the good-worker group.[276]

Generally, economics deals with persons competing over limited resources. Spence's work is offered in this vein. In Spence's example, the money and the worker's time are both limited resources. Every hour of the worker's time that the employer gets is an hour that the worker cannot use for family, friends, or another employer. The employer's dollars are, of course, limited as well. The situation with sharing a public good—such as intellectual property—is quite different, and, correspondingly, Spence's analysis is inapposite as a general matter when it comes to intellectual property. Yet Spence's analysis does lead to at least one important insight here. The use of an intellectual property-sharing signal can achieve stable usage in equilibrium because the signal exhibits differential costs for good actors versus bad actors. That is, a person-to-person sharing invitation signal is relatively expensive for ne'er-do-wells, yet is relatively cheap for do-gooders. Put still differently, there is little or nothing to gain from a duplicitous use of such a signal, but there is something to lose. A faithless user of an intellectual property-sharing signal incurs the cost of having to rebuff unwelcome sharing inquiries. Any nefarious scheme, such as a bait-and-switch to obtain monetary compensation, is likely to be a costly nuisance for the rogue with no upside. Thus, an intellectual property-sharing signal will helpfully point toward likely sharers, even in the absence of honorable behavior, because of the differential expense involved in employing the signal.

3. Legal Complexities and Beneficent Fuzziness

There is an additional wrinkle that presents itself if the thing being shared is intellectual property. Unlike tangible property, intellectual property, as a pure

[275] *Id.*

[276] *See id.*

creation of law, necessarily involves an element of legality. Moreover, getting permission to use intellectual property has a heightened legal feel, especially compared with examples such as distributed computing or carpooling. One naturally wonders: Can non-lawyer individuals, working alone, conclude legally sufficient licenses so as to make a sharing scheme work? The answer is yes. Intellectual property licenses need not be negotiated by lawyers, nor must they be couched in any kind of formal language. In fact, licenses need not even be written.

A little legal background on licenses is in order. First, note that an intellectual property license is not a contract. An intellectual property license is, technically speaking, an affirmative defense. If sued for infringement, a licensee can interpose the license as a defense to a claim of infringement. If it can be proved that there was a license, then a prima facie case for infringement is defeated. A contract might contain an intellectual property license, but the license itself is not a contract.[277]

The distinction between a license and a contract is often confusing. The confusion probably stems from the fact that people think of a license as an agreement. Many people with legal training seem to think intuitively that an agreement will have to qualify as a contract if it is to be legally binding. That, however, is not the case. Counter to some people's intuition, no consideration is necessary for a license to be binding.[278]

This distinction between licenses and contracts is important when comparing social-sharing transactions involving intellectual property with market-based monetized transactions. If intellectual property is shared, there does not need to be a contract, because there does not need to be consideration. On the other hand, a market-based transaction for intellectual property rights will always involve a contract, since something—either money or something that can be monetized—is exchanged for the license. With a sharing transaction, there may be a social "debt," but this liability is purely non-legal. The obligation enters into a non-legal "cloud of good will."[279]

This is where we come to a salient advantage of ad hoc person-to-person sharing of intellectual property. There is a significant information advantage to the cloudiness and the fuzziness of a sharing transaction, as opposed to an exchange for money or its equivalent. As Benkler explains, "social systems will be particularly valuable as information-processing systems where the context, precise nature of the alternative possible actions, and range of possible outcomes are persistently vague or difficult to specify formally."[280]

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[277] *See, e.g.*, Christopher M. Newman, *A License Is Not A "Contract Not to Sue": Disentangling Property and Contract in the Law of Copyright Licenses*, 98 IOWA L. REV. 1101 *passim* (2013) (explaining that a license is not a contract, but that a license may be a term of a contract, and exploring the mischief that results when courts misunderstand this).

[278] *Id.* at 1141-42.

[279] Benkler, *supra* note 51, at 316.

[280] *Id.* at 318-19.

Thus, in the context of sharing intellectual property, the lack of lawyers and legal language, and even the lack of written terms, is a good thing.

4. Payments in the Currency of Sociality

Perhaps the most important aspect of why person-to-person sharing is ideally suited to intellectual property sharing has to do with the serendipitous correspondence between the non-rivalrous nature of intellectual works and the intrinsic motivation to produce them. As it turns out, the same intrinsic motivation that encourages creative labor also encourages altruistic sharing. Intrinsic motivation pushes people to undertake interesting tasks and to "contribute to the world."[281]

If, as the literature suggests, intrinsic motivation is stoked by expressing gratitude, by providing positive feedback and useful information, and by confirming the importance of the sharer's contribution, then a well-designed social-sharing paradigm should provide these things.[282] In fact, successful social-sharing systems generally do. Distributed computing projects, for instance, are implemented in such a way as to take advantage of the effects of these intrinsic-motivation agonists. SETI@home and other such projects give participants feedback about the kind and value of their contributions.[283] These projects also are explicitly social. Many of the projects promote conversation on discussion boards, thus offering "connectedness and mutual companionship," and some projects also encourage the formation of teams that compete to outdo one another.[284]

It is only natural that persons sharing media workparts would want the same sort of social connections as desired by those participating in other sharing regimes. Providing direct social connectedness should result in a greater quality and quantity of sharing of media workparts.

5. The Surprising Benefits of High Transaction Costs

At this point, we come to what is perhaps the most beguiling feature of person-to-person sharing within a structured system: transaction costs actually contribute to the economic efficiency of person-to-person sharing.

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[281] *The Great Cognitive Surplus*, WIRED, June 2010, at 128, 130 (quoting Daniel Pink).

[282] *See supra* Part IV.A.4.

[283] Benkler, *supra* note 51, at 294-95.

[284] *Id.* at 295 n.74.

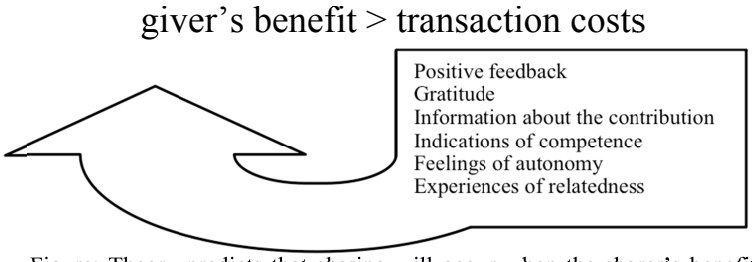

Figure: Theory predicts that sharing will occur when the sharer's benefit exceeds the transaction costs. With person-to-person sharing of creative intellectual works, the same aspects of the transaction that constitute costs simultaneously work to increase the sharer's received benefit.

In order to overcome apprehensions of cadgery and offensive use, a potential sharee seeking permission to make use of an intellectual work will have to craft a personal, informative communication to the potential sharer. It does not need to be wordy or extensive, but regardless, the communication is, in the language of economics, costly. Ordinarily, a money-denominated market tends to be efficient because the price encapsulates and summarizes a huge amount of relevant information. With person-to-person sharing transactions involving reuse of intellectual works, the lack of a price leaves a gap that is filled with detail-rich, unquantifiable information. In other words, substantial transaction costs are incurred. But what constitutes "transaction costs" in the economic sense constitutes a thing of value in the social sense: the information provided by the prospective sharee translates into positive feedback, gratitude, useful information about the contribution, indications of competence, feelings of autonomy, and experiences of relatedness. Thus, high transaction costs, rather than detracting from the viability of person-to-person sharing, actually add to it.

V. EXTENSIONS AND APPLICATIONS

This Part reviews potential applications of the analysis offered above.

A. *A Notice Requirement for Person-to-Public Sharing Licenses*

The analysis offered in this Article suggests a tweak to the person-to-public sharing licenses: the addition of a notice requirement.

I suggested above that the dominant model of person-to-public sharing, Creative Commons, does not seem to mesh well with what we know about the intrinsic motivation to create and share.[285] That is, as currently structured, CC licenses do not push sharees to provide to sharers the positive feedback,

[285] *See supra* Part IV.A.4.

gratitude, helpful information, indications of competence, and experiences of relatedness that are intrinsic motivation agonists.

Rather than encouraging social connections among sharers and sharees, the Creative Commons suite of licenses, functioning as a one-way person-to-public dedication, encourages distance between the parties.[286] In fact, a sharer in the CC system may never know that a work proved useful to someone. With luck, some online uses might be revealed through an Internet search, but many online uses and virtually all offline uses will likely remain entirely hidden from the sharer.

A notice requirement—making the license conditioned upon a notification of the usage to the licensor—would be a way of encouraging intrinsic motivation agonists to be transmitted as part of the sharing transaction. Thus, a notice requirement could spur the relaying of helpful information, indications of competence, positive feedback, and gratitude, as well as providing an experience of relatedness. This, in turn, could potentially induce a greater quantity and quality of works to be CC licensed.

There would be disadvantages. A notice requirement involves increased transaction costs as compared to CC licenses without such a requirement, since an additional burden is placed on the licensee. But as discussed above,[287] those transaction costs might be captured as benefits to the sharer, making sharing marginally more beneficial, and thus encouraging more sharing and more creative activity. Also, if the notice requirement were added as an option, then the CC licensing system as a whole would increase in complexity, imposing informational transaction costs. On the other hand, if a notice requirement were added as a baseline requirement for all CC licenses, then there would be costs in the form of disrupted expectations on the part of those who are already well-accustomed users of the Creative Commons system. Despite these disadvantages, the social science on intrinsic motivation is compelling enough, I believe, that such a change is worth exploring.

B. *Standardized Signaling to Facilitate Person-to-Person Sharing*

As discussed in Part IV.B, person-to-person sharing is promising as a means of capturing lost economic value from the intellectual property system, particularly if signals function to overcome inherent barriers to spontaneous sharing.

In conjunction with the Stanford Law School Center for Internet and Society, I have developed a real-world public-interest project exploring the implications of this Article's analysis: the Konomark Project.[288] The project

[286] The only two-way communication contemplated by Creative Commons licenses is an antagonistic one: licensors can send a notice to licensees demanding removal of the licensor's attribution in adaptations or collective works. *See, e.g.*, *Attribution 3.0 Unported*, CREATIVE COMMONS, *supra* note 244.

[287] *See supra* Part IV.B.5.

[288] *See* Rosenblatt, *supra* note 98, at 365 (describing Konomark as a "low-formality IP

aims to facilitate person-to-person sharing transactions through a standardized signal comprising a word—"Konomark"—and a graphical symbol—a circle with a pineapple in it.[289] The name derives from the Hawaiian word "kono," which means to invite, prompt, or ask in.[290] "Mark" has the same meaning as in "trademark"—signifying that this is a symbol meant to indicate the existence of a certain quality or status. The design uses a pineapple because the pineapple has long been a symbol of hospitality.[291]

In a beta-test of the concept, more than 100 people responded to request permission to reuse photographs uploaded to a popular photo-sharing website.[292]

C. *Sharing Rights to Unregistered Designs, Databases, and Inventions*

This Article has primarily concerned the problems and opportunities of sharing creative works that are encumbered with copyright and sometimes publicity rights. The implications, however, extend to other kinds of intellectual property entitlements.

Like copyright, intellectual property rights in designs, databases, and inventions are generally grounded in the idea that monopoly entitlements will incentivize intellectual labors.[293] Just as people create copyrighted works for myriad reasons other than external monetary incentives enabled by intellectual property entitlements, people also create designs, inventions, and databases for many reasons. Thus, these rights can be shareable as well.

Rights in inventions, databases, and designs vary by kind and by jurisdiction. Some of these rights arise automatically. For instance, in the United Kingdom, law automatically vests three-dimensional designs with a design right, without any requirement that the design be registered.[294]

licensing concept"); Grimmelmann, *supra* note 12, at 2029 (describing Konomark as "a voluntary symbol a creator can apply to a work to invite a conversation about possible free reuse"); Daniel Austin Green, *Indigenous Intellect: Problems of Calling Knowledge Property and Assigning It Rights*, 15 TEX. WESLEYAN L. REV. 335, 341 (2009) (pointing to Konomark as an alternative to default copyright).

[289] An example may be found—naturally—in the authorial footnote to this Article.

[290] *See* HENRY P. JUDD, MARY KAWENA PUKUI & JOHN F. G. STOKES, HANDY HAWAIIAN DICTIONARY 261 (1995).

[291] *See* JULIA F. MORTON, FRUITS OF WARM CLIMATES 18-28 (Curtis F. Dowling, Jr. ed., 1987), *available at* http://www.hort.purdue.edu/newcrop/morton/pineapple.html, *archived at* http://perma.cc/NUS-5ZYA.

[292] Eric E. Johnson, *Beta-Testing the Konomark Project*, STANFORD CIS BLOG (Dec. 31, 2012, 3:32 PM), http://cyberlaw.stanford.edu/blog, *archived at* http://perma.cc/B44E-96LF.

[293] I discuss free riding and its place within the economic theory of intellectual property in Part I, *supra*.

[294] Copyright, Designs and Patents Act, 1988, c. 48, § 215 (U.K.) ("The designer is the first owner of any design right in a design which is not created in pursuance of a commission or in the course of employment."). For a general introduction, see *Designs: How to Protect Your Design,* INTELLECTUAL PROPERTY OFFICE (2012),

Similarly, the European Union recognizes a *sui generis* database right that arises in new databases, with no requirement of registration. Wherever such intellectual property rights arise automatically, there will be overkill loss.[295] And correspondingly, there is potential shareability.

Other intellectual property rights do not arise by default, but instead require a process of application and registration before the right can vest. A leading example is patent law. To obtain patent protection, an inventor must go through a lengthy, complex, and expensive application procedure.[296] Therefore, patents do not create overkill losses in the same way that entitlements such as copyrights and U.K. design rights do.

Yet despite the affirmative efforts required by inventors to obtain patents, the patent system can nonetheless exhibit some level of overkill loss. Why? Patents provide all-or-nothing protection. Once an inventor is awarded a patent, the patentee receives total exclusive rights with a patent in the jurisdiction of the country awarding the patent.[297] Because of social motivations, however, a patentee may not wish to exercise exclusive rights as fully as the law allows. For example, a great number of extremely valuable patents are held by nonprofit universities that espouse a mission of public service. Indeed, universities have sometimes chosen to license fundamental research inventions broadly and affordably to allow for maximum participation by academic institutions in a line of research.[298]

Such civic-mindedness among inventors is not limited to the university context. Steve Gass is the inventor of the SawStop, a table saw that is capable of retracting its circular blade instantly upon contact with human flesh.[299] With SawStop, an absent-minded operator who feeds fingers into the blade will come away with a superficial cut rather than an amputation. Gass has committed to refusing to grant exclusive rights to the SawStop technology to anyone—even his own company—so that all manufacturers can use the technology to prevent grievous injuries.[300]

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http://www.ipo.gov.uk/d-basicfacts.pdf, *archived at* http://perma.cc/5CR7-GU2S.

[295] *See supra* Part II.A.1.

[296] *See* 35 U.S.C. §§ 111-122 (2012).

[297] *See id.* § 271.

[298] Frequently, however, they do not. *See generally* Kenneth W. Dam, *Intellectual Property and the Academic Enterprise* (John M. Olin L. & Econ., Working Paper No. 68) (1999), *available at* http://ssrn.com/abstract=166542 (discussing how universities have increasingly sought to profit from research and how this is in tension with an ethic of scholarly openness).

[299] *See About*, SAWSTOP, http://www.sawstop.com/company/story.php, *archived at* http://perma.cc/545E-SKPB (last visited Feb. 13, 2014).

[300] *See* Tom O'Brien, *SawStop Inventor Launches Own Line of Safety-Minded Table Saws*, FINE HOMEBUILDING (Aug. 1, 2003), http://www.finehomebuilding.com/how-to/articles/sawstop-revisited.aspx, *archived at* http://perma.cc/NH6X-4VKH ("Although SawStop is now committed to the manufacture of its own saws, Gass hopes that his example will persuade reluctant manufacturers to get on board and make use of this technology. He

The costs involved in scientific research, industrial manufacturing, and other endeavors will generally greatly eclipse the cost of typical creative endeavors that have a need for copyrighted media workparts. Because of the higher costs involved in these contexts, the need for a standardized sharing signal, such as Konomark, is likely to be considerably less. On the other hand, the prevalence and expense of business-to-business advertising shows that large-scale firms do make use of signals in initiating efficient large-scale transactions. Thus, signaling an intent to share may well have value in such a context.

CONCLUSION

To stoke the intellectual labor of creativity and innovation, the intellectual property system provides extrinsic incentives in the form of monopoly entitlements, which can then be redeemed for money in the marketplace. This system, however, neglects to consider two important truths: First, market transactions are not efficient except for a minority of works with sufficiently high commercial value. Second, money is not an ideal motivator for creativity and innovation.

Holding in mind a more nuanced conception of the economics of intellectual property allows us to see that sharing is more efficient than markets in many cases. In large part, this is because sharing saves on transaction costs. A market transaction requires agreeing on a price, worrying about particular terms of the deal, and having a way of ensuring that payment is received. This is not too onerous when a television network is negotiating with a Hollywood studio—in such a situation, the transaction costs may well be negligible. Transaction costs are unacceptably high, however, in many other contexts. In general, the smaller the stakes, the higher the relative transaction costs become. For an individual person, seeking a hobbyist's permission to use a photograph on a blog, dealing with the rigmarole of setting terms and transmitting payment is likely far too burdensome to manage. By dispensing with the hassle of market formalities, sharing makes possible a great number of small exchanges that would not be feasible otherwise. While any given sharing transaction may be tiny in relation to the economy as a whole, considered in the aggregate, the economic impact of sharing transactions could be substantial.

Transactional efficiency is not the only reason that sharing is powerful. Sharing also has the capacity to give creators something more valuable than money. Evidence from the social sciences has shown that people who produce creative and innovative works are, in general, more motivated by the intrinsic satisfaction that comes from the act of creating and sharing than they are by money. It turns out that money can even take away from the feelings of satisfaction that come with engaging in creative labors, and money can thus be detrimental to the creative impulse. Non-monetary rewards, on the other hand, can strongly abet creators' intrinsic motivations. Among these are expressions

promises that no one (himself included) will ever be granted exclusive rights to this important safety feature.").

of gratitude, helpful feedback, and information about the impact of the creator's contribution. Social sharing can provide exactly these things. In fact, because sharing facilitates the kind of social rewards that bolster persons' intrinsic motivation to engage in creative labor, sharing may be much more capable of encouraging creativity and innovation than commercial markets enabled by intellectual property law.

The idea that society could profit from creators giving away their wares for free is deeply counterintuitive. It flies in the face of much established economic wisdom. But it is a twist that may have been foreseen millennia ago by Roman philosopher Lucius Annaeus Seneca, who wrote, in ruminating on the fruits of human intellect, "There's no delight in owning anything unshared."

This Article has argued that when it comes to intellectual works, social sharing can be an optimal means of exchange, even when measured by the market's own preferred yardstick of economic efficiency. Taking deliberate action to foster thriving sharing-based exchanges of intellectual property may lead to greater wealth, creativity, and interconnectedness.