



Everything in its Right Place: Social Cooperation and Artist Compensation

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EVERYTHING IN ITS RIGHT PLACE†: SOCIAL COOPERATION AND ARTIST COMPENSATION

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The music industry's crisis response to the Internet has been the primary driver of U.S. copyright policy for over a decade. The core institutional response has been to increase the scope of copyright and the use of litigation, prosecution, and technical control mechanisms for its enforcement. The assumption driving these efforts has been that without heavily-enforced copyright, artists will not be able to make a living from their art. Throughout this period artists have been experimenting with approaches that do not rely on technological or legal enforcement, but on constructing web-based business models that engage fans and rely on voluntary compliance and payment mechanisms. Anecdotal reports of such efforts have occasionally surfaced in the media. Here we present the first extensive sales-data evidence, gleaned from hundreds of thousands of

† 'Everything in its Right Place' is the title of a Radiohead song. It can be found on *Kid A*, the group's 2000 album.

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online voluntary transactions, from three web-based efforts over a period of several years. This Article examines the effectiveness of these voluntary models as compared to the baseline-forcing system advocated by the industry and adopted and enforced by Congress and successive U.S. administrations over the past fifteen years.

Platforms for artist-fan cooperation are complex and dynamic systems, sensitive to a variety of design factors that can either increase participation and prosocial behavior or dampen participation and enable anti-social behavior. In addition to providing substantial evidence for copyright policy, our study reports field observations of the design characteristics that support cooperation. A growing literature experimentally and theoretically explores prosocial behavior that significantly and systematically refutes the self-interest hypothesis characterizing most rational actor modeling. This literature has not yet been translated into a design approach aimed specifically at designing systems of cooperation.

Building on experimental and theoretical literature in diverse fields of behavioral sciences, we synthesize a series of design levers that should improve the degree to which individuals cooperate. We then specify how these design levers might be translated into specific user interface features, describe the ways in which these design levers have been utilized in the sites under study, and present hypotheses about additional features that could improve cooperative outcomes.

The Article contributes to the Internet copyright policy debates by offering empirical evidence showing that well-designed voluntary cooperation models compare favorably to more aggressive and widely criticized enforcement policies based on copyright law and the Digital Millennium Copyright Act. It provides an empirical foundation for challenging the guiding assumptions of those policies.

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INTRODUCTION

Making a living as a musician has never been more complicated. The Internet's near total eclipse of the media environment, along with advances in recording technologies, have drastically reduced the cost of recording and distributing music. As a result, more musicians than ever are able to realize their vision without relying on the mainstream music industry's traditional filtering role. Meanwhile, the major record labels continue their long decline amidst falling CD sales and only modest success with alternative models. Music fans are increasingly accustomed to consuming music without paying for it, via streaming content, downloading from file-sharing networks, or copying from friends.¹ In short, long-standing structures for artist compensation are collapsing at

1. See Jon Pareles, *1,700 Bands, Rocking as the CD Industry Reels*, N.Y. TIMES, March 15, 2008, at A1 ("In an era of plummeting CD sales and short shelf lives even for current hit makers, the [South by Southwest Music Festival] is full of people seeking ways to route their careers around what's left of the major recording companies.").

just the moment when new possibilities for production and distribution have emerged.²

In the face of all this change, both media companies and musicians themselves are cultivating new models for distributing recorded music, often bypassing established intermediaries to engage directly with consumers. A variety of models have emerged, each seeking to monetize the dissemination of digital music, and in so doing, provide artists with a stable stream of revenue.³

Cooperative models—approaches to the sale and distribution of music that rely on voluntary contributions and other forms of prosocial fan behavior—are beginning to appear in many different forms.⁴ World famous bands and relative unknowns alike have experimented with cooperative models, authorizing fans to download music without paying for it, but appealing to fans' sense of generosity, community or obligation in asking for voluntary contributions. Some artists are appealing directly to fans to raise the funds necessary for recording and distributing new material. Entrepreneurs have launched new business models designed to harness the power of cooperative fan behavior, providing artists with platforms for engaging their fans' goodwill. Indeed, the basic logic of the tip jar is emerging in many forms, with models evincing a range of sophistication and ambition.

This Article analyzes three such models—Magnatune.com, Jonathan-Coulton.com, and Sheeba.ca⁵. All three enable artist-fan cooperation. Their approaches range from allowing flexible pricing schemes and voluntary payments to enabling fan-driven promotion and distribution. We begin by describing the range of currently operating cooperative models

2. For an overview of the broad range of new models for the distribution of music (most of them digital), see Henry H. Perritt, Jr., *New Architectures for Music: Law Should Stay Out of the Way*, 29 HASTINGS COMM. & ENT. L.J. 259 (2007).

3. For example, Last.FM and Rhapsody provide access to a library of music for streaming, and rely on either ad sales (Last.FM) or subscription sales (Rhapsody) for revenue. The most successful and well-known model is Apple's iTunes online music store. A competitor, eMusic, offers a fixed number of downloads per month for a subscription fee. See *Most Frequently Asked Questions*, EMUSIC, <http://www.emusic.com/help/index.html> (last visited Nov. 21, 2010). Last.FM (a CBS subsidiary), an early adopter of the free streaming funded by advertising dollars model, currently provides a catalogue of over 3.5 million songs. See Saul Hansell, *Last.FM Has a First with Streaming Music*, N.Y. TIMES BITS BLOG (Jan. 23, 2008, 10:45 AM), <http://bits.blogs.nytimes.com/2008/01/23/lastfm-is-first-with-streaming-music-users-choose/>.

4. Business models relying on prosocial fan behavior are not entirely new. See, e.g., Mark F. Schultz, *Fear and Norms and Rock & Roll: What Jambands Can Teach Us About Persuading People to Obey Copyright Law*, 21 BERKELEY TECH. L.J. 651 (2006) (identifying prosocial norms founded on notions of reciprocity functioning in fan communities associated with jambands (i.e., the Grateful Dead and its progeny)).

5. Sheeba.ca was formerly an online music store run by the musician Jane Siberry. Siberry now permits fans to download her music for free.

for music distribution. Next, we describe the sales data from each of the three sites under study, and consider the extent to which these alternative models can be deemed successful—from the standpoint of the artists—when compared against baseline industry revenues. After establishing that the revenues generated by these models are substantial, we then describe each site’s basic approach and analyze the ways in which each enables cooperation.

Our analysis is driven by a recognition that platforms for artist-fan cooperation are complex and dynamic systems sensitive to a variety of design factors that can either increase participation and prosocial behavior *or* dampen participation and enable anti-social behavior. That is to say, the success of cooperative models depends not just on music consumers’ relative virtue; the models’ design features matter a great deal. What design features will work to increase prosocial behavior, and why, is not well addressed within mainstream economic theory anchored in universal self-interest. If *homo economicus* adequately captured human behavior, individuals would never pay for music they could get without paying. And yet, they do. To understand this behavior, we need a more nuanced model of human motivation and behavior.

The past fifteen years have seen the emergence of a rich literature, across many fields of research, analyzing human cooperation theoretically, experimentally, and observationally. From this work we can begin to synthesize an approach to designing institutional, technical, and organizational interventions that harness prosocial motivations and social dynamics to the goal of sustaining human cooperation.

By “cooperation,” we mean deviation from the predictions of selfish rationality in ways that contribute to the well-being of others or the provisioning of public goods. Thus, to cooperate is to undertake a cost to contribute voluntarily to the provisioning of a public good—the creation and distribution of music. And by “public good,” we mean here the technical economic term: a good that is both non-rival in consumption, and, in this case, also non-excludable. In our case studies, the cooperators or prosocial actors are fans who contribute time and money to artists whose work they enjoy, even though they could get the music for free through other channels. In the case of the artists we study, fans could do so legally, because the music is either entirely free and unencumbered by copyright protection, or licensed under a Creative Commons license that makes redistribution among fans legal.⁶ The cooperation problem we study here is particularly challenging because there is no effective

6. For a general discussion of how such licenses work, see Molly Shaffer Van Houweling, *Cultural Environmentalism and the Constructed Commons*, LAW & CONTEMP. PROBS., Spring 2007, at 23.

mechanism for excluding third parties from benefiting from the public good at issue, and there are no mechanisms to enforce reciprocity among contributors.

We introduce a series of design levers that, based on underlying research on cooperation, should improve the degree to which individuals cooperate.⁷ We then specify how these design levers might be translated into specific user interface features, describe the ways in which these design levers have been utilized in the sites under study, and present hypotheses regarding additional features that could improve cooperative outcomes.

As a matter of policy, our goal here is not to identify new legal rules or system design aspects intended to save the recording industry or assure its revenue model. Rather, the policy question our analysis responds to is whether voluntary donations can play a substantial role in putting artists in a position that is not systematically worse, in terms of their ability to expect to make a living from their art, than under the old system. Our tentative answer is yes: voluntary donations, particularly when the lessons of well-designed sites are refined over time, do provide a pathway for artists to keep body and soul together while pursuing their art.

The Article's main policy implication is to caution against blunt policy interventions aimed at "saving" the recording industry's lucrative, but now obsolete, twentieth-century business model.

I. THE EMERGENCE OF VOLUNTARY PAYMENT AS A MODE OF ARTIST COMPENSATION

We begin by canvassing the range of cooperative models for the sale and distribution of music that emerged in the last three years alone. This Part does not offer a comprehensive review—new models are emerging all the time—but instead attempts to document an increasingly common phenomenon in the music marketplace.⁸

7. The underlying research for these design levers includes Yochai Benkler, *Law, Policy, and Cooperation*, in *GOVERNMENT AND MARKETS: TOWARD A NEW THEORY OF REGULATION* 299, 312–23 (Edward J. Balleisen & David A. Moss eds., 2010); Yochai Benkler, *Technology Policy, Cooperation and Human Systems Design*, in *THE NEW ECONOMICS OF TECHNOLOGY POLICY* 337, 343–53 (D. Foray ed., 2009); Yochai Benkler, *Beyond the Bad Man and the Knave: Law and the Interdependence of Motivational Vectors* (Mar. 12, 2010) (unpublished manuscript), available at http://www.law.yale.edu/documents/pdf/Intellectual_Life/LTW-Benkler.pdf.

8. Many artists are testing the cooperative model waters, providing a robust variety of examples to analyze and compare. See, e.g., Kristen Nicole, *More Bands and Musicians Giving Away Free Downloads*, *MASHABLE* (Oct. 9, 2007), <http://mashable.com/2007/10/09/radiohead-free-downloads/>.

The most well-known voluntary payment model, unquestionably, is the release of the British rock group Radiohead's album *In Rainbows*. In October 2007, Radiohead released *In Rainbows* exclusively (for a limited time) through its website.⁹ The site permitted fans to select their own price for a digital download version of the album.¹⁰ The sound files were not encumbered by restrictive code (commonly known as "DRM," short for "digital rights management"), and fans were permitted to download the album for free (although a small service charge was required).¹¹ According to public statements, the band hoped to sidestep the bloated record label-wholesaler complex, but beyond the simple economics, the members of Radiohead also wanted to offer their fans the freedom to decide for themselves how much the album was worth.¹² After nearly three months, Radiohead disabled the download portal, and proceeded to release the physical version of the album in the traditional manner.¹³

Radiohead has not released comprehensive sales figures, and apparently does not plan to do so.¹⁴ Market research firms, however, have offered estimates. One report concluded that nearly two-thirds of downloaders paid between \$5 and \$15, with roughly a third electing to download for free.¹⁵ The Internet market research firm comScore reported a less rosy outcome for the band, estimating that 38% of 1.2 million overall downloaders paid for the album, paying an average of \$6 per album (and an overall average of \$2.26 per album, factoring in those who downloaded for free).¹⁶ Estimates also showed that payment levels were highly skewed, with a relatively small group of fans (16% of downloaders) accounting for 80% of the overall revenue.¹⁷

9. Jeff Leeds, *Radiohead to Let Fans Decide What to Pay for Its New Album*, N.Y. TIMES, Oct. 2, 2007, at E1.

10. *Id.*

11. *Id.*

12. *Id.*

13. See *The End of the Beginning*, RADIOHEAD DEAD AIR SPACE (Dec. 5, 2007), <http://www.radiohead.com/deadairspace/index.php?a=303>.

14. In October 2008, the band released sales figures from the *In Rainbows* release, including revenues from physical album sales and digital music stores, but declined to break down album sales by type (i.e., digital or physical), or by the source of the purchase or download (i.e., iTunes or Radiohead.com). *Radiohead "In Rainbows" Sales Data Unveiled*, CURRENT (Oct. 20, 2008), http://current.com/entertainment/music/89428205_radiohead-in-rainbows-sales-data-unveiled.htm. Aggregating digital and physical album sales, Radiohead sold three million copies of *In Rainbows*. The physical album release, in January 2008, entered both the U.S. and U.K. charts at number one, even though the digital version had been available for almost two months. The album also became available on iTunes in January 2008 and was the most downloaded album of the month, selling 30,000 digital download versions the first week it was available. See *id.*

15. See Steven Levy, *How Much Is Music Worth?*, NEWSWEEK, Oct. 29, 2007, at 20.

16. *For Radiohead Fans, Does "Free" + "Download" = "Freeload"?*, COMSCORE (Nov. 5, 2007), <http://www.comscore.com/press/release.asp?press=1883>.

17. *Id.*

Radiohead's distribution scheme triggered a wave of media attention and scrutiny. Commentators wondered aloud whether direct artist-to-consumer voluntary payment schemes could replace, or at least provide a strong supplement to, the music industry's traditional forced payment methods.¹⁸ Some deemed the venture a success, providing the band with a direct revenue stream and a per-album profit margin that exceeded by far what most musicians receive under the terms of a standard recording industry contract.¹⁹ Many others, however, noted the large percentage of downloaders who paid nothing (of course, nobody knows exactly how many—estimates range from 33% to 60%) and concluded that music consumers are generally selfish and unwilling to contribute money to finance the music they enjoy.²⁰

Rock musician Trent Reznor (the leader of the band Nine Inch Nails) and hip-hop artist/spoken word poet Saul Williams released a collaborative record in the fall of 2007, employing a simple variable pricing scheme.²¹ Reznor and Williams made the record (entitled *The Inevitable Rise and Liberation of Niggy Tardust*) available directly through their website, without the involvement of a record label.²² Downloaders could access either a high quality DRM-free version of the record for \$5, or a slightly lower sound quality version for free.²³ Two months after the release, Reznor reported on his blog that of the 154,449 people who downloaded the record, 18.3% chose to pay for it.²⁴ Reznor expressed

18. See, e.g., Eduardo Porter, *Radiohead's Genius?: Making Music Downloading Pay*, N.Y. TIMES BOARD BLOG (Nov. 27, 2007, 11:15 AM), <http://theboard.blogs.nytimes.com/2007/11/27/radioheads-genius-making-music-downloading-pay/>. Radiohead disputed the comScore figures, calling them "wholly inaccurate." See Greg Sandoval, *Radiohead Criticized as Band Shuts Down 'In Rainbows' Promotion*, CNET NEWS BLOG (Dec. 11, 2007, 3:12 PM), http://www.news.com/8301-10784_3-9832659-7.html.

19. See, e.g., Steven D. Levitt, *How Much Do You Think Paul Feldman Will Pay for the New Radiohead Album?*, N.Y. TIMES FREAKONOMICS BLOG (Oct. 7, 2007, 9:53 AM), <http://freakonomics.blogs.nytimes.com/2007/10/02/how-much-do-you-think-paul-feldman-will-pay-for-the-new-radiohead-album/>.

20. See, e.g., Sheila Marikar, *Radiohead Lets Fans Set CD Price, Most Say \$0*, ABC NEWS (Nov. 6, 2007), <http://www.abcnews.go.com/Entertainment/story?id=3826638> (reporting on market research data suggesting that 60% of the 1.2 million people who downloaded *In Rainbows* in the two weeks after its release paid nothing). But see, e.g., Gordon Haff, *People Do Pay for Music*, CNET PERVASIVE DATA CENTER BLOG (Nov. 7, 2007, 5:31 AM), http://www.cnet.com/8301-13556_1-9812667-61.html (reviewing and criticizing mainstream media reporting that deemed Radiohead fans "freeloaders" and the *In Rainbows* experiment a failure).

21. See Trent Reznor, *Saul Follow-up and Facts*, NINE INCH NAILS—NIN.COM BLOG & MEDIA ARCHIVE (Jan. 3, 2008, 1:04 PM), <http://ninblogs.wordpress.com/2008/01/03/saul-follow-up-and-facts/>. Reznor and Williams have since removed the free download option, stating that the option was limited to the first 100,000 downloaders.

22. *Id.*

23. *Id.*

24. *Id.*

some disappointment with the sales figures, explaining that the large percentage of downloaders that chose not to pay left him “dishearten[ed].”²⁵

Reznor’s better known musical project, Nine Inch Nails (“NIN”), structured their most recent album release differently. NIN offered the full thirty-six song version of their album *Ghosts I–IV* for download through their website, without DRM and in a high quality format, for \$5.²⁶ NIN also allowed fans to access a nine song abridged version of the album for free, and made available a variety of higher cost limited edition physical copies of the record.²⁷ Reznor reported receiving \$1,619,420 in revenue from 781,917 online transactions in the week after the *Ghosts I–IV* release.²⁸ NIN followed up with an entirely free digital album release (entitled *The Slip*) in May 2008, which Reznor described as a “thank you” to his loyal fans.²⁹ The band released the album under a Creative Commons license, encouraging fans to download and share.³⁰

Reznor continues to explore the possibilities of fan-artist collaboration, converting the NIN website into a platform for file sharing, remixing, and facilitating fan-to-fan communication.³¹ Fans have produced thousands of remix versions of NIN songs (all available for free download), uploaded photos, videos, and set list archives (over 30,000 free photos and videos, all produced and uploaded by fans), and even volunteered as moderators to facilitate message boards and other website

25. *Id.* Chris Anderson, author of *The Long Tail*, found Reznor’s disappointment curious. He notes that Reznor and Williams earned more from the digital *Niggy Tardust* release than they would have from a traditional physical release. Reznor reported that 28,232 people paid \$5 for the album, and the remainder downloaded the free version. That amounts to \$141,610 in revenue. Williams’s previous record (released through a label in 2004), sold 33,897 copies. Anderson points out that, assuming Williams’s 2004 release was covered by a typical record deal, he earned around \$1.60 per album, for a total of \$54,235. Thus, even with over 80% of downloaders downloading for free, Williams did well. Chris Anderson, *How Not to Do a FREE Calculation, Trent Reznor Edition*, THE LONG TAIL (Jan. 3, 2008, 10:52 PM), http://www.longtail.com/the_long_tail/2008/01/how-not-to-do-1.html.

26. *See Order Options*, NINE INCH NAILS: GHOSTS I-IV, http://ghosts.nin.com/main/order_options (last visited Sept. 11, 2010).

27. *Id.*

28. Daniel Kreps, *Nine Inch Nails’ “Ghosts I-IV” Makes Trent Reznor an Instant Millionaire*, ROLLING STONE (Mar. 13, 2008), <http://www.rollingstone.com/music/news/13511/70878>.

29. *E.g.*, *Nine Inch Nails – The Slip*, NIN.COM, <http://dl.nin.com/theslip/signup> (last visited Sept. 12, 2010).

30. *Id.*

31. *See* Frank Rose, *Nine Inch Nails iPhone App Extends Reznor’s Innovative Run*, WIRED UNDERWIRE BLOG (Apr. 6, 2009, 4:41 PM), <http://www.wired.com/underwire/2009/04/trent-reznor-wa/> (“[Reznor’s] embrace of ‘freemium’ pricing, torrent distribution, fan remixes, and social media seem to be paying off financially even as they have helped him forge deeper connections with the Nine Inch Nails faithful.”).

functions.³² To reduce the costs of delivering free digital music to fans, Reznor makes downloads available through BitTorrent, a web application regarded by many other musicians as “the domain of pirates.”³³

The independent musicians Kristen Hersh (of Throwing Muses) and Donita Sparks (of L7) launched an online project called CASH Music (Coalition for Artists and Stakeholders) in 2008.³⁴ The CASH site initially offered only Hersh’s music for download,³⁵ but many other musicians are now involved.³⁶ The site makes music downloads available in several DRM-free formats, and permits downloaders to pay whatever they want for music (set at a \$3 default price and presented on the CASH site as an optional “one-time contribution”), album artwork, and liner notes, or in the alternative, to download for free.³⁷ Hersh has also made the original sound files for each song available to enable more technically adept fans to produce remixed versions of her songs.³⁸ The music on Hersh’s CASH site is offered to fans under a Creative Commons license permitting fans to copy, distribute, and alter the works, as long as they provide attribution and refrain from using the work for a commercial purpose.³⁹

Singer-songwriter Jill Sobule, a former major label recording artist, raised over \$75,000 through online contributions on her website to finance a new album in fifty-three days, surpassing her initial goal.⁴⁰ Sobule handed responsibility for the basic pitch to her mother, displaying this message on the website created for the fundraising drive:

Hi, I’m Elaine, Jill’s mother. As you all know, my daughter is a real talent. She has put out 6 great CDs (which never leave my

32. *Id.*

33. *Id.*

34. Antony Bruno, *New Web Site Encourages Fan Remixes and Interaction*, REUTERS (Dec. 9, 2007), <http://www.reuters.com/article/musicNews/idUSN0933738520071209>.

35. *Id.*

36. See CASH Music, <http://www.cashmusic.org/more> (last visited Sept. 21, 2010) (“CASH Music is a . . . nonprofit organization building open-source tools and services to benefit artists and music organizations. It’s our belief that the need for technology should never get in the way of promotion, distribution, or support of great music.”).

37. See, e.g., *Series 1*, CASH MUSIC, <http://kristinhersh.cashmusic.org/series1/> (last visited Nov. 22, 2010).

38. E.g., *id.* (click on an individual track on the right to see a download link for the mix stems).

39. *Id.*

40. See *Questions & Answers*, JILL’S NEXT RECORD, <http://www.jillsnextrecord.com/faq.asp> (last visited Sept. 21, 2010) (“Think of it as a kind of a web-based telethon, or the pledge drive for your favorite public TV or radio station. We’re taking donations here (using PayPal for online payment processing) and, just like with a telethon, you can watch the tote board and see how we’re doing.”).

stereo), and has been on 4 labels—two of which went bankrupt; the other two were also farkakte.

This time she wants to do it on her own. She has some wonderful new songs (although she has not sent them to me, like I asked). She also has lined up some wonderful musicians and guest artists.

So help and be a part of her new album, in exchange for some wonderful gifts and services.⁴¹

Five hundred fifty-six people contributed to the fundraising drive, with most paying between \$10 and \$100 (one fan paid \$10,000) before Sobule closed the site to donations.⁴² At each level of contribution, Sobule offered informal rewards connected to the production of the album (for example, free digital downloads before the official release, free admission to Sobule's shows in 2008).⁴³ One critic referred to the album (entitled *California Years*) as one of the first releases to be funded entirely by "fan anticipation."⁴⁴

All of the models discussed above emerged in the last three years alone. But despite broad experimentation, there is still no consensus on cooperative models' potential as a mode of artist compensation. Indeed, the criteria for deeming a cooperative model "successful" remain elusive. The cooperative experiments we describe here, generally speaking, have exhibited high levels of free riding. Is that a signal that permissive downloading norms are so firmly rooted that voluntary compensation models will inevitably fall short, or is the overall percentage of people who download for free a misleading statistic? Discussion of cooperative models tends to assume that voluntary payment must replace the traditional industry model in order to be deemed significant. The traditional model, however (as we discuss in greater detail below), is not a particularly efficient mechanism for delivering revenue to artists.

Finally, the basic mechanics of cooperative models have received too little attention; that is, we don't know much about how they work. The

41. *A Message from Jill*, JILL'S NEXT RECORD, <http://www.jillsnextrecord.com/Prevmsg.asp> (last visited Sept. 26, 2010).

42. Sobule cut off contributions after exceeding her goal of \$75,000—the amount she estimated would be necessary to produce the new record. *See Tote Board*, JILL'S NEXT RECORD, <http://www.jillsnextrecord.com/toteboard.asp> (last visited Sept. 11, 2010). Sobule treats fan donations as contributions, not as investments with an associated right to return on capital. *Questions & Answers*, *supra* note 40.

43. The website that Sobule created for the fundraising drive displayed an ongoing tally of contributions, broken down by amount contributed and also by state and country. *See Tote Board*, *supra* note 42.

44. Ben Greenman, *Price Point*, THE NEW YORKER, Apr. 13, 2009, at 14.

models discussed above, and the models that we examine in depth in this Article, rely on different design strategies. No attempt has yet been made to identify best practices and examples of systemic failure in the development of voluntary payment models. As a result, we have only a crude picture of why such models succeed and why they fail.

II. MUSIC INDUSTRY BASELINES

The landscape is changing quickly, but at least this much is clear: revenues from retail sales of recorded works represent a small percentage of overall income for most musicians.⁴⁵ As a result, relatively small-scale cooperative models can—from the perspective of individual musicians—amount to a major improvement over existing options.

In order to see why this is so, one must understand how standard record label-artist recording contracts work. As of 2005, four major record labels controlled almost 72% of the market for recorded works.⁴⁶ In a standard major label contract, an artist ordinarily receives a royalty between 9–12% on every (physical) album sold.⁴⁷ The Future of Music Coalition, a non-profit organization devoted to bettering economic conditions for musicians, estimates that the actual royalty is usually more like 6%, as labels generally take “standard industry deductions” (for example, warehousing fees, deduction for promotional free copies) that reduce the artist’s share of each album sold.⁴⁸ Factoring in such deductions, the authors of *This Business of Music*, a popular industry guide now in its tenth edition, estimate that an artist receiving a 12% base roy-

45. See John Seabrook, *The Price of the Ticket*, THE NEW YORKER, Aug. 10, 2009, at 34.

46. See IFPI Releases *Definitive Statistics on Global Market for Recorded Music*, IFPI (Aug. 2, 2005), http://www.ifpi.org/content/section_news/20050802.html. A slew of “independent” labels control the remainder of the market. *Id.* See generally INT’L FED’N OF THE PHONOGRAPHIC INDUS., DIGITAL MUSIC REPORT 2009, [hereinafter DIGITAL MUSIC REPORT] available at <http://www.ifpi.org/content/library/dmr2009.pdf> (describing the market structure of the recording industry).

47. The royalty figure is complicated by the existence of two distinct intellectual property rights residing in the recorded work—the copyright in the sound recording, and the copyright in the underlying piece of music. Terry Fisher estimates that composer and performer royalties amount to 4% and 12%, respectively, of an album’s retail price. Thus, when a recording artist is also a work’s composer, the expected royalty percentage will be higher. See WILLIAM W. FISHER III, PROMISES TO KEEP: TECHNOLOGY, LAW, AND THE FUTURE OF ENTERTAINMENT 262 (2004).

48. *Major Label Contract Clause Critique*, FUTURE OF MUSIC COALITION (Oct. 3, 2001), <http://futureofmusic.org/article/article/major-label-contract-clause-critique>.

alty ultimately receives approximately \$0.55 for every \$15.00 album sold (12% of \$15.00 is \$1.80).⁴⁹

Before an artist begins receiving royalties, album sales must surpass a “break even” point defined by the up-front investment that the label puts into the album’s production, distribution, and promotion.⁵⁰ These costs vary dramatically. A self-produced artist working with her own equipment can produce an album for as little as a few thousand dollars.⁵¹ In a typical major label release, recording costs alone typically run from \$80,000–150,000.⁵²

Of the approximately 32,000 albums released in the United States each year, less than 10% sell enough to allow the label to recoup its up-front costs.⁵³ Fewer than 250 of those 32,000 albums sell more than 10,000 copies, and fewer than 30 go platinum (i.e., sell more than 1 million copies).⁵⁴ Thus, the overwhelming majority of album releases net no revenue for the individual artist, and it is common for artists to wind up owing money to the record label for un-recouped recording and promotion costs.⁵⁵

The market for recorded music is increasingly going digital amidst a steady decline in physical CD sales, but unfavorable contract terms for artists persist. In 2008, record companies brought in \$3.7 billion globally from digital music sales, 20% of the overall market for recorded music (up from 5% of global revenue in 2005, and 15% in 2007).⁵⁶ The majority of digital revenues came from individual song downloads through platforms such as Apple’s iTunes online music store.⁵⁷ Artists, however, typically receive only a royalty between 8–14% on each download, with iTunes retaining a 35% cut and the remainder going to the record label.⁵⁸

49. M. WILLIAM KRASILOVSKY & SIDNEY SHEL, *THIS BUSINESS OF MUSIC* 21 (10th ed. 2007).

50. *Id.* at 22–23.

51. See DAVID KUSEK & GERD LEONHARD, *THE FUTURE OF MUSIC: MANIFESTO FOR THE DIGITAL MUSIC REVOLUTION* 143 (2005).

52. KRASILOVSKY & SHEL, *supra* note 49, at 22.

53. KUSEK & LEONHARD, *supra* note 51, at 108.

54. *Id.*

55. Record labels generally treat an up-front advance as a non-recourse loan to the artist, and recoup their costs out of the artist’s share of future royalties. Because the loan is treated as non-recourse, the advance functions as the only tangible income most recording artists receive—and the amount of any advance varies according to a recording artist’s relative bargaining power. See MOSES AVALON, *SECRETS OF NEGOTIATING A RECORDING CONTRACT* 11–12 (2001). As fewer than 10% of artists sell enough records to cover the advance, most artists never see any royalties, and indeed, at least in theory, owe money to the label. See KUSEK & LEONHARD, *supra* note 51, at 108.

56. See DIGITAL MUSIC REPORT, *supra* note 46, at 6–7.

57. See *id.* at 6, 10.

58. See *iTunes iSbogus*, DOWNHILL BATTLE, <http://www.downhillbattle.org/itunes/> (last visited Sept. 12, 2010).

Further, the persistence of illicit peer-to-peer (“P2P”) file-sharing presents a serious challenge for artists who seek to convert downloads into revenue. A major music industry trade group estimates that for every legal song downloaded (through online stores like iTunes), nearly twenty copies are downloaded over the file-sharing networks.⁵⁹

For artists seeking a route around record labels and the accompanying unfavorable contract terms, alternative pathways have emerged. From the standpoint of artist compensation, the online music store CD Baby is perhaps the most successful new model.⁶⁰ CD Baby distributes the work of independent artists (i.e., those that are not affiliated with a record label), and serves as both a download platform and a distributor of physical CDs.⁶¹ In contrast to the traditional model, CD Baby strives to minimize overhead costs: approximately 90% of revenues generated through the site is paid directly to the artists.⁶²

Since its founding ten years ago, more than 228,000 artists have distributed their music through CD Baby, and over 4.2 million albums have been sold through the site, generating over \$97 million in revenue distributed directly to artists.⁶³ In 2008, the site’s most successful sales year to date (based on available information), CD Baby paid out more than \$34 million in revenue to artists.⁶⁴

While the aggregate sales numbers are impressive—especially considering the industry-wide decline in CD sales—the average artist selling music through CD Baby received a payment of just \$228 in 2008.⁶⁵ Four thousand artists received between \$1000 and \$10,000 in payments from CD Baby, and roughly 200 (out of more than 150,000 artists selling music on the site) earned more than \$10,000.⁶⁶

Of course, record sales amount to just one potential revenue stream for musicians—others include payment for live performances, merchandise sales, and work-for-hire composing gigs. Despite the myriad ways that musicians manage to make a living, and the ubiquity of music in most of our lives, their aggregate income tends to be quite modest. In

59. See DIGITAL MUSIC REPORT, *supra* note 46, at 22 (“IFPI, collating separate studies in 16 countries over a four-year period, estimated unauthorised file-sharing at over 40 billion files in 2008. This means that globally around 95 per cent of music tracks are downloaded without payment to the artist or the music company that produced them.”).

60. See generally CD BABY, <http://www.cdbaby.com/> (last visited Sept. 12, 2010) (website for world’s largest online distributor of independent (i.e., not distributed by an established record label) music).

61. *About Us*, CD BABY, <http://www.cdbaby.com/About> (last visited Nov. 21, 2010).

62. Tony van Veen, *CD Baby 2008 Stats for CD and Download Sales*, CD BABY BLOG (Jan. 15, 2009, 8:49 AM), <http://cdbaby.org/stories/09/01/15/8158752.html>.

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.*

2005, the 273,000 working musicians in the United States earned an average annual income of around \$30,000.⁶⁷ Taking into account the low percentage of recorded works that sell enough copies to justify their upfront costs, it is clear that existing models do not permit the vast majority of musicians to depend on the sale of recorded works to satisfy their basic material needs.

In sum, existing pathways for the sale and distribution of music make it very difficult for musicians to profit from their recorded works. The persistence of illicit file-sharing and the rise of legal download platforms that hold a large share of overall revenue combine to squeeze digital sales as a mode of artist compensation. While online distribution carries the promise of empowering musicians and providing them with a more reliable stream of income, that potential remains for the most part untapped.

III. RESULTS FROM THE THREE STUDY SITES

The three study sites at the center of this paper employ cooperative models similar, at a general level, to the distribution experiments summarized above. On closer inspection, however, their different approaches to fostering cooperation are significant and instructive. Our research team followed each of the study sites for over a year, retaining complete access to sales databases and web activity data.

Let us first clarify the ways in which the study sites rely on social cooperation. First, the artists that distribute their music through the study sites are sufficiently popular that their music could be found either through P2P networks or by identifying and trading with users who have already purchased songs. Because much of the music is licensed under Creative Commons licenses, doing so would be perfectly legal. Thus, to the extent that users are coming to the three study sites and paying to download music, they are choosing to pay and taking the time to do so, even though there are alternative avenues through which they could legally acquire the music for free.⁶⁸

Next, each of the sites involve some form of voluntary or flexible payment—specifically, payment that users need not make if their only goal is to access music for the lowest possible price. Users who do contribute “extra” money are thus voluntarily contributing to the artists’

67. KUSEK & LEONHARD, *supra* note 51, at 108.

68. At least in the case of Coulton, who also makes his music available on iTunes, fans who come to pay on the site may benefit the artist by cutting out iTunes. However, doing so imposes higher transactions costs on the downloader—iTunes is popular, convenient, and easy to use.

well-being, and are demonstrating generosity in the dyadic relationship of fan to artist. They are also supporting the continued creation of music—a public good.

Finally, Jonathan Coulton's music distribution model relies on cooperation in that he specifically enlists fans to help with promotion, concert planning, and creation of new mashups, without compensating them. Users who respond to these solicitations are cooperating with Coulton by contributing time and effort.

With the exception of Coulton, the artists associated with the study sites generally make modest amounts from download sales. The amounts are, nonetheless, substantial by comparison to what artists can expect to make from royalties under the traditional approach (and newer alternative approaches). On Magnatune, top-selling artists can earn from \$8000–10,000 per year.⁶⁹ Jane Siberry's online store yielded more than \$33,000 over the three years between the site's launch in March 2005 and the conclusion of our study. Considering that the vast majority of artists net little or no income from the sale of their recorded works,⁷⁰ these numbers reflect substantial fan contributions. Jonathan Coulton earns about \$90,000 per year from digital downloads on his personal site. To achieve a similar level of compensation through more traditional channels, Coulton would need to sell about 650,000 full albums per year through iTunes, and much more under the more artist-unfriendly terms contained within a standard record industry contract.

A. Jane Siberry's Online Music Store

Canadian singer-songwriter Jane Siberry⁷¹ launched an experiment in consumer-determined pricing in March 2005.⁷² She made digital

69. Data on the study sites are on file with the authors. Magnatune's contracts with artists are non-exclusive. *Distribution Contract Terms*, MAGNATUNE, <http://www.magnatune.com/info/terms> (last visited Oct. 9, 2010). Magnatune revenues are often only a portion of a given artist's revenues from recorded works. *What We Do for Our Musicians*, MAGNATUNE, <http://www.magnatune.com/info/whatwedo> (last visited Oct. 9, 2010).

70. See discussion *supra* Part II.

71. Jane Siberry released several albums on major record labels through the 1980s and early 1990s, and enjoyed considerable commercial and critical success. See *Jane Siberry Biography*, ARTISTDIRECT, <http://www.artistdirect.com/artist/bio/jane-siberry/492899> (last visited Oct. 8, 2010). She is perhaps best known for her song "Calling All Angels," released as a duet with k.d. lang on her 1993 album *When I Was a Boy*. *Id.* In 1995, Siberry created her own independent label, SHEEBA Records, and has since released all of her new material on that imprint. *Id.*; see also *Jane Siberry Opens a Window on a Better Download World*, ELECTRONIC FRONTIER FOUND. (Nov. 27, 2005), <http://www EFF.org/deeplinks/2005/11/jane-siberry-opens-window-better-download-world> [hereinafter *Jane Siberry Opens a Window*] (reporting on Siberry's then newly unveiled download store, where all of her songs were available as plain MP3s).

72. See *Jane Siberry Opens a Window*, *supra* note 71.

download versions of recorded music from over fifteen albums available for free through a self-designed, owned, and operated online store.⁷³ Siberry's store permits fans to set their own price for music, or to pay nothing at all.⁷⁴ The downloads are not encumbered with restrictive code, and come in a high-fidelity MP3 format.⁷⁵ Siberry also makes sheet music, videos, and album artwork available, all on a voluntary payment model.⁷⁶

After electing to download an individual song on Siberry's site, a consumer selects from four options in a drop-down menu: (1) "a gift from the artist" (no payment); (2) "standard price" (\$0.99); (3) "self-determined, pay now"; and (4) "self-determined, pay later."⁷⁷ Those who choose the "standard price" are directed to provide credit card information, and those who choose the "self-determined" options are allowed to enter whatever price they like before providing payment.⁷⁸ The site informs downloaders that choosing a price of less than \$0.45 actually costs the site money, as it does not cover the transactional fee (it also informs visitors that free downloads bypass all transaction costs).⁷⁹ Siberry also makes entire albums available for sale, and the "standard price" varies depending on the number of tracks on the album (i.e., a four-song EP is priced at \$3.33, and a full-length album at \$9.99).⁸⁰ Potential customers can also elect to stream all of the music on the site before downloading, enabling them to preview a song before selecting a purchase option.⁸¹

The site presents visitors with a mission statement explaining the design principles, spirit, and reasoning behind Siberry's pricing policy. It reads:

This store model is based on the belief that: People are good. In trust, our best comes forward full force. To treat others as we would like to be treated is generous, not selfish. Good living can

73. *Id.* Siberry recently overhauled her website, altering or removing some of the features discussed herein. For her current website, see *Music*, JANE SIBERRY, <http://www.janesiberry.com/janesiberry/music.html> (last visited Oct. 16, 2010). Sources for the website's prior features are on file with the authors. Some of these features and language from the original website are available at *Frequently Asked Questions*, SHEEBA MUSIC CATALOGUE, <http://www.jemmoore.com/store/help.php> (last visited Nov. 18, 2010). Citations to this website are provided where consistent with Siberry's original website.

74. *Jane Siberry Opens a Window*, *supra* note 71.

75. *Id.*

76. *See Music*, *supra* note 73.

77. *Jane Siberry Opens a Window*, *supra* note 71. Siberry removed the "pay later" option in March 2008. *See Music*, *supra* note 73.

78. *See Jane Siberry Opens a Window*, *supra* note 71.

79. *Frequently Asked Questions*, *supra* note 73.

80. Data on file with authors.

81. *Frequently Asked Questions*, *supra* note 73.

still come from not trying to control things; in trusting in a wider sense of transactions. We are ‘a part’ more than ‘apart’.

Things to ponder. Not too long, though. Life is out there waiting. The most important thing is that the music flow out to where it could bring enjoyment. And THAT is the best thing you could give back to me.⁸²

The site also hosts an open-thread “feedback” page where fans can express their views on the pricing policy and explain the reasons for their payment decisions.⁸³ In March 2008, Siberry added a page entitled “creative currencies,” on which downloaders can commit to performing positive deeds in exchange for music downloads (“creative currency” is also now one of the options a downloader can choose from in electing their preferred mode of payment).⁸⁴

Siberry displays summary statistics on the online store’s home page, reporting the percentage of downloaders that pay for an individual song, and the average price per song.⁸⁵ The summary statistics are incomplete. They do not include, for example, information about album sales, and the averages are not weighted to include those that download for free. Even so, the summary statistics provide visitors to the site with a basic sense of how others are behaving.

We have analyzed sales data from Siberry’s site spanning from its launch in March 2005 through January 2009. Over that time, 52,661 people downloaded content from the store, earning Siberry approximately \$33,000 in revenue. Twenty-two percent of the transactions conducted on the site involved a voluntary payment. In the remaining transactions, the downloader selected the “gift from the artist” option, or chose the “pay later” option and never returned to make a contribution.

Period of Record

March 2005 through January 2009

Total Revenue

<i>Total</i>	<i>Songs</i>	<i>Albums</i>
\$33,212	\$22,387	\$10,825

82. *Id.*

83. *Id.*

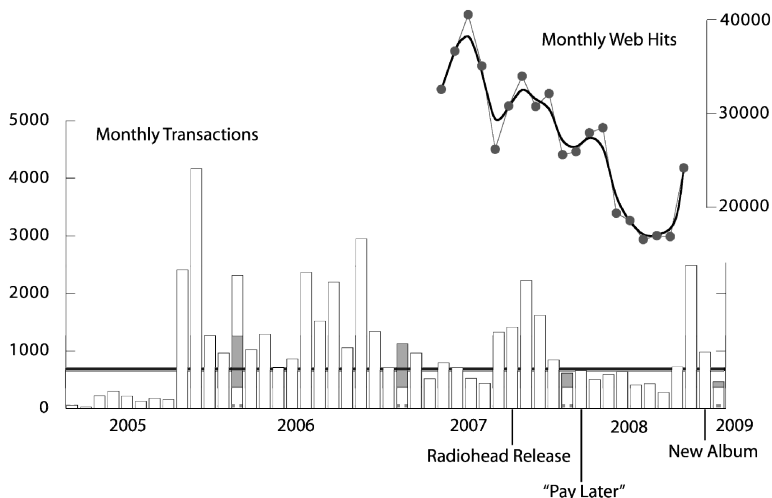
84. *Id.*

85. *See Id.* (listing statistics for February 3, 2005 through January 23, 2008).

Transactions

	<i>Total</i>	<i>Songs</i>	<i>Albums</i>
Total	52,661	39,091	10,607
Paid	11,638	8,660	2,175
Unpaid	41,023	30,431	8,432

FIGURE 1
 DOWNLOAD TRANSACTIONS PER MONTH⁸⁶



Shaded bars denote the month of December. The black line shows mean monthly revenue, and the shaded region (dotted line) encompasses the 25th (5th) and 75th (95th) percentiles.

The average price per song, among those who paid, was \$1.25, and the average price per album was \$9.00. The term “corrected average” refers to the average price among those who paid some amount for an album or song. The “nulls” represent transactions where, due to record-keeping idiosyncrasies, Siberry’s sales database does not note whether a given downloader chose the standard price, self-determined price, or some other option, but does record the amount paid (if any).

86. Siberry began keeping track of web statistics in late 2006, and we are unable to represent web visitation data for the entire period of record.

Album Sales

Average Prices	\$1.85
Corrected Average	\$9.00
Standard	\$9.06
Self Determined	\$8.30
Nulls	\$1.61
Nulls Corrected	\$9.62

Song Sales

Average Price	\$0.28
Corrected Average	\$1.25
Standard	\$0.99
Self Determined	\$2.10
Nulls	\$0.20
Nulls Corrected	\$1.29

Three notable trends emerge upon close review of the sales data. First, voluntary contribution on Siberry's site is persistent and relatively stable over a significant period of time. The declining number of transactions reflects the natural drop-off in interest as the period since the release of the last new album increases. We see transactions picking up again in early 2009, when Siberry released a new album. Second, norm-driven behavior appears to account for the bulk of voluntary contributions. Third, Siberry derives a great deal of her revenue from the downloaders who exhibit an unusual level of generosity—what we deem “asymmetric” contributors.

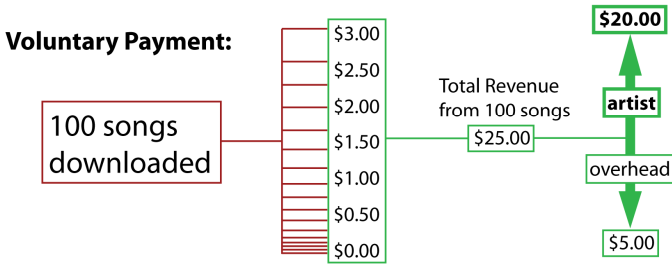
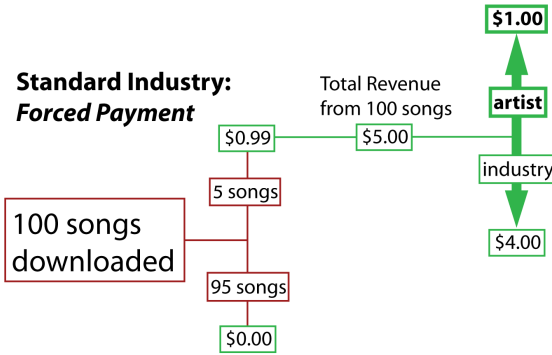
Although a sizeable majority of downloaders elect to pay nothing, the combination of norm-driven behavior and unusual altruism led to an average price per song download that is higher than the average price in the standard forced payment (i.e., iTunes or Amazon.com) model. If we do not include those who download for free in the calculation of the average, contributors pay about 25% more than in the \$0.99 per song forced payment models.

If one compares the average including the nonpaying fans, however, then the relevant comparison to the forced payment system should include the nonpaying illegal downloaders. A major music industry trade group, in its 2009 annual report on the state of the global music market, found that for every legal digital MP3 sale, twenty digital files are downloaded illegally over the file-sharing networks.⁸⁷ On Siberry's site,

87. See DIGITAL MUSIC REPORT, *supra* note 46, at 22.

the ratio is much more favorable to the artist (five free downloads for every paid download).⁸⁸ If the music industry’s estimation of illegal file-sharing volume is correct, then the average payment per track in that system is about \$0.05, as compared to Siberry’s \$0.28 (uncorrected).

The figures below illustrate the point.⁸⁹



1. Stable Cooperative System

All content on Siberry’s site is entirely free. One need not enter a credit card number or provide contact information to access digital

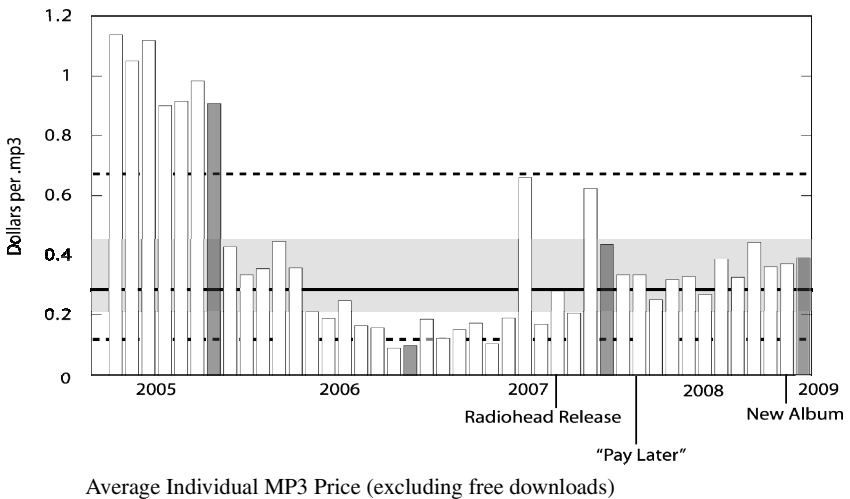
88. Although it is of course possible that some people download Siberry’s music over P2P file-sharing networks, we assume the volume of such downloads to be negligible given that downloaders can access free copies of Siberry’s work through her website without incurring *any* legal risk. Choosing to download Siberry’s work over P2P networks therefore amounts to a voluntarily choice to absorb an additional cost (i.e., the risk of incurring copyright liability, or receiving a corrupt or low quality file). Obtaining free downloads from Siberry’s website does not require the downloader to enter an email address or any other personal information.

89. The “overhead” figure in the Voluntary Payment figure is a rough estimate of web maintenance and other related costs that artists like Siberry must cover.

downloads. Over the course of three and a half years, approximately 22% of the people that came to the site to download music chose to pay for it, and on average, they paid more than the standard iTunes baseline-market price. Although the size of the average payment fluctuated somewhat, responding to internal events (for example, the launch of the site, Siberry's release of a new album) and external events (media coverage of Siberry's site connected with the Radiohead *In Rainbows* release), the percentage of people choosing to voluntarily pay for music stabilized around 22% and persisted at that level over the length of the study period.

The standard rational actor model, of course, predicts that anyone who wants to download Siberry's music will choose the "gift" option. Doing so incurs no material costs, there is no threat of a lawsuit, and paying for music does not allow a downloader to obtain a higher quality file or any additional material benefit. In a slightly more expansive view of rational self-interest, contribution would have to be explained with a "warm glow" or a self-signaling model, since the transactions are opaque to others and so cannot provide a social-signaling or reputation function.⁹⁰

FIGURE 2
DOLLARS PER MP3 DOWNLOAD⁹¹



90. See Roland Benabou & Jean Tirole, *Incentives and Prosocial Behavior*, 96 AM. ECON. REV. 1652, 1657–58 (2006).

91. Over the first few months of 2005, Siberry did not record how many people downloaded for free, which accounts for the inflated average at the beginning of the graph. The following two figures show average song and album price, excluding free downloads.

FIGURE 3

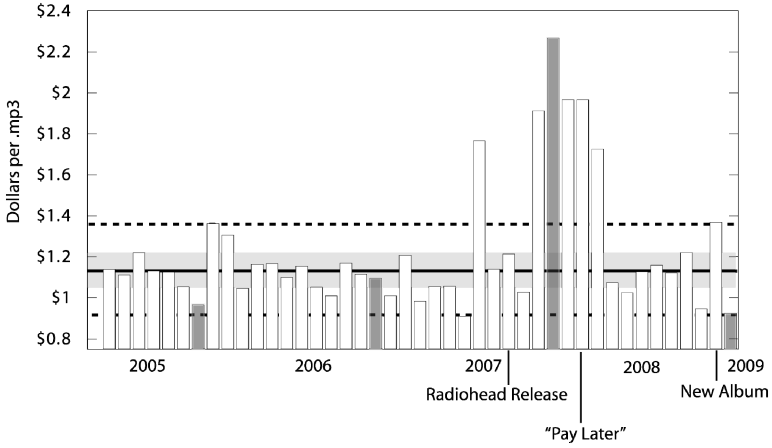
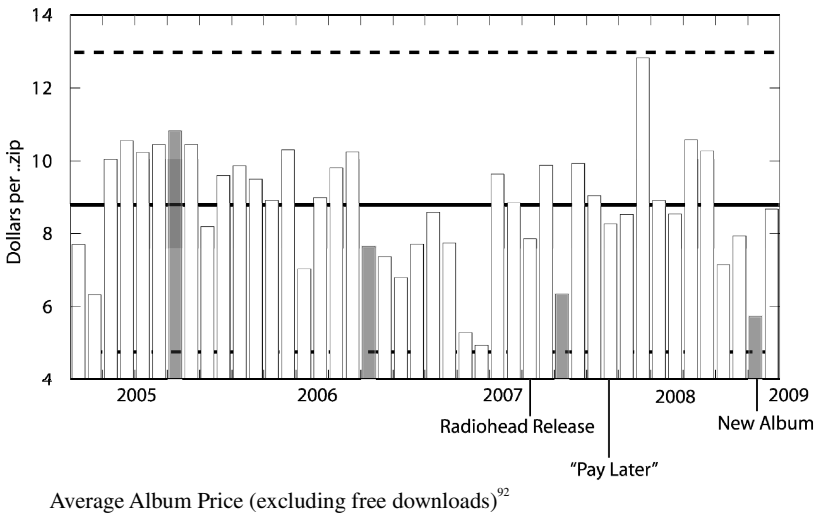


FIGURE 4



Average Album Price (excluding free downloads)⁹²

92. The shaded bars in Figure 4 denote prices in November of each year.

2. Norm-Driven Cooperators, Focal Points, and Asymmetric Contribution

A relatively small group of moderate contributors are responsible for about 70% of Siberry's overall revenue, and a tiny group of hyper-generous altruists account for a non-trivial portion.⁹³ The tables below reflect the percentage of revenue, and the overall frequency of "normal" and hyper-generous payments, for both individual song (MP3) and full album downloads (.zip).

MP3 DOWNLOADS

BIN	FREQUENCY	FREQUENCY	
		%	REVENUE %
\$0.00	30229	77.74%	0%
\$0.50	542	1.39%	2%
\$1.00	6991	17.98%	61%
\$2.00	744	1.91%	8%
\$3.00	164	0.42%	8%
\$5.00	129	0.33%	7%
\$10.00	64	0.16%	5%
\$>10.00	23	0.06%	8%

ALBUM DOWNLOADS

BIN	FREQUENCY	FREQUENCY	
		%	REVENUE %
\$0.00	8432	79%	0%
\$2.00	175	2%	1%
\$6.00	469	4%	11%
\$10.00	608	6%	30%
\$12.00	789	7%	45%
\$18.00	86	1%	6%
\$30.00	39	0.4%	4%
\$100.00	9	0.1%	2%

Close to 7,000 contributors paid the "industry standard" payment of about \$1, and another 700 paid twice that amount, together accounting for 69% of the revenue from singles. Three hundred eighty downloaders paid \$3 or more for an individual MP3 (just under 1% of all MP3

93. Data on file with authors.

downloaders), but these hyper-generous contributors accounted for 28% of the total revenue from MP3 sales. Similarly, about 1400 downloaders contributed around the less well-defined “industry standard” (as we will see from Magnatune, this number is typical) of \$10 or \$12 per album, accounting for 75% of the revenue from albums. One hundred thirty-four downloaders paid \$18 or more for a full album (1.5% of all album downloaders), accounting for 12% of the total revenue from album sales.

This pattern of contribution is consistent with at least three or four distinct motivational profiles. First, around 78% (+/-1%) of downloaders pay nothing. Given the persistent and pervasive nature of this public good problem, it is impossible, to separate the self-interested actors from the conditional cooperators in this group.⁹⁴ It is well understood theoretically, and well-established experimentally, that in a repeated public goods game, where cooperators have no means of policing defectors or reciprocating their defection, conditional cooperators “reciprocate” or “punish” the defectors by withholding their own contributions.⁹⁵ The surprising result is that, despite the absence of any means of punishment or reputation, a stable portion continues to contribute. Based on the amount contributed, this portion seems to fall into two categories. The bulk of the remaining participants contribute a “normal” amount, where “normal” is defined either from the internal promptings of the site itself (as we will see in the study of Magnatune), or derived from baseline cultural understandings of whatever behavior counts as appropriate for that setting. “Normal” can reflect moral commitment,⁹⁶ whether enforced emotionally, cognitively, or some combination of the two;⁹⁷ social conformism;⁹⁸ or a norm-defined level of “fair” or “equitable” payment, which in turn is enforced by the kind of inequity aversion that has been

94. The prevailing experimental finding is that in unmodified public goods games, a substantial number of players initially cooperate, but gradually reduce cooperation over the life of the experiment once they see that other players are free riding. See Ernst Fehr & Simon Gächter, *Altruistic Punishment in Humans*, 415 NATURE 137, 137–39 (2002). In the field setting we studied, an observation of a high level of non-contribution almost certainly corresponds to later stages of the experimental model, where both self-interested players and conditional cooperators no longer contribute to the common pool.

95. See *id.*

96. See Amartya K. Sen, *Rational Fools: A Critique of the Behavioral Foundations of Economic Theory*, 6 PHIL. & PUB. AFF. 317 (1977).

97. The long debate over the source of moral commitments, whether based in moral emotions or sentiments, as Hume and Smith posited, or in rational commitment, as Kant would have it, continues in cognitive psychology today. See MARC HAUSER, MORAL MINDS 20–26, 31, 36 (2006); Joshua D. Green, *The Secret Joke of Kant's Soul*, in 3 MORAL PSYCHOLOGY 35, 41 (Walter Sinnott-Armstrong ed., 2006).

98. See ROBERT BOYD & PETER J. RICHESON, CULTURE AND THE EVOLUTIONARY PROCESS 205–212 (1985); Joe Henrich & Robert Boyd, *The Evolution of Conformist Transmission and the Emergence of Between-Group Differences*, 19 EVOLUTION & HUM. BEHAV. 215, 215–41 (1998).

shown to exist experimentally in many studies.⁹⁹ It is difficult to tell which of these mechanisms is at play here, because Siberry uses both appeals to “the market price,” which would evoke the focal point of \$0.99 from iTunes and Amazon.com, and also speaks of fairness, trust, and generosity, thus evoking several mechanisms.

What is interesting about these actors is that they seem to be distinct from the conditional cooperators, who are predicted and observed to reciprocate the behavior of large numbers of noncontributors by withholding their own contributions. Rather, this appears to be an instance of norm-driven behavior that successfully overcomes, for some actors, the inter-contributor negative reciprocity usually thought to lead to the unraveling of cooperation in public goods games without punishment. Finally, there is the group of hyper-generous altruists who pay well above anything that could be considered norm-compliant. These findings support the ideas that: (a) there are different “types” of agents, who respond differently to different types of motivations; and (b) not all forms of prosociality are the same, and not all are triggered by the same mechanisms or susceptible to the same failures. Even in a repeated public goods game, as here, there remains a substantial minority of contributors consisting of what appear to be norm-driven contributors and altruists.

For purposes of design, these findings suggest that a site needs both normative triggers and affordances for asymmetric contribution, in order to capture contributions from this diverse range of motivational types.

B. *Magnatune—Internet Label with Flexible Pricing Scheme*

In May 2003, after watching his wife and friends endure the tribulations of releasing their CDs through a classic record label, John Buckman founded Magnatune.¹⁰⁰ Unlike Siberry’s site, which houses a few artists, Buckman envisioned Magnatune as a music *label* that would embrace “Internet Reality.”¹⁰¹ It would allow file-sharing,¹⁰² share profits fairly,¹⁰³ and reject the strict \$0.99 per song industry default price. Instead, Magnatune uses a flexible payment scale for online music sales in

99. See Ernst Fehr & Klaus M. Schmidt, *Theories of Fairness and Reciprocity: Evidence and Economic Applications*, in 1 *ADVANCES IN ECONOMICS AND ECONOMETRICS* 208, 211–218 (Mathias Dewatripont et al. eds., 2003).

100. John Buckman, *Founder’s Rant*, MAGNATUNE, <http://www.magnatune.com/info/why> (last visited Oct. 8, 2010); see also *Interview with John Buckman*, RED HAT MAG. (Apr. 2005), <http://www.redhat.com/magazine/006apr05/features/buckman/>.

101. Buckman, *Founder’s Rant*, *supra* note 100.

102. *Give 3 Free Copies to Your Friends*, MAGNATUNE, <http://www.magnatune.com/info/give> (last visited Oct. 8, 2010).

103. See *Why We Are Not Evil*, MAGNATUNE, <http://www.magnatune.com/info/whynotevil> (last visited Oct. 8, 2010).

which the price paid for music is set by the buyer.¹⁰⁴ Commenting on the sliding scale, a *USA Today* reporter said, “The Internet makes dynamic pricing possible—prices that change depending on demand. EBay’s auctions are one way to do it. Magnatune is trying something a little different—and it includes playing on a buyer’s conscience.”¹⁰⁵

The model relies on two basic assumptions: first, customers will pay more than the required minimum when they feel they are being treated fairly by a record label and know that a label’s artists are treated fairly as well; and second, customers will pay more when they are permitted to stream full versions of albums before deciding whether to purchase them.

Magnatune currently maintains a catalogue of over 700 albums¹⁰⁶ in a diverse range of genres (including classical),¹⁰⁷ and offers the artists’ works as digital album downloads and as part of a commercial licensing package.¹⁰⁸ All revenues are split evenly with the artists.¹⁰⁹ The label maintains a strict selection process, accepting submissions from only three percent of artists, and only those who fit the label’s creative profile.¹¹⁰

Magnatune’s sliding scale model offers multiple ways for visitors to consume albums for free. Site visitors can stream the label’s entire catalogue without making a purchase or click “license” and download albums under a Creative Commons license.¹¹¹ The choice to make the downloads accessible only after a user clicks “license,” rather than presenting the “free” or “gift” options like Siberry or Coulton, is a pointed one. As Buckman explains:

The reason for this seemingly arcane process is to divide users between those looking for ‘free as in beer’ from those looking for ‘free as in freedom’. The ‘free as in beer’ people would be unlikely to think to click on the ‘license’ button, looking instead for a download button. The ‘free as in freedom’ people (i.e.,

104. Magnatune has recently shifted to a membership model. See *Magnatune Relaunches as Membership Site*, MAGNATUNE, <http://www.magnatune.com/info/news/email/albums-2010-03-25.html> (last visited Nov. 18, 2010). The following discussion describes the prior “sliding scale” model.

105. Kevin Maney, *Apple iTunes Might Not Be Only Answer to Ending Piracy*, USA TODAY, Jan. 4, 2004, at 3B.

106. *Magnatune Statistics*, MAGNATUNE, <http://www.magnatune.com/info/stats/> (last visited Oct. 8, 2010).

107. *MP3 Music Genres*, MAGNATUNE, <http://www.magnatune.com/genres/> (last visited Oct. 8, 2010).

108. *Music Licensing at Magnatune*, MAGNATUNE, <http://www.magnatune.com/info/licensing> (last visited Oct. 8, 2010).

109. *Why We Are Not Evil*, *supra* note 103.

110. *Id.*

111. *Interview with John Buckman*, *supra* note 100.

creators who want to make a new work) are more likely to want to see what the license cost and terms are. The goal of this approach is to offer the CC licensed downloads for free to creative people, while the consuming public pays for downloads.”¹¹²

In addition to the voluntary payment system and the framing of the free download option, Magnatune is also unique in that users control how much they pay for albums and subscriptions.¹¹³ The label charges between \$5 and \$18 per album, and recommends that purchasers pay \$8. Purchasers choose a price from a drop-down menu that says “How much do you want to pay? \$8 (typical), \$10 (better than average), \$12 (generous), \$15 (VERY generous), \$18 (We love you!).”¹¹⁴ These prompts create normative focal points for differently motivated users—ranging from those who want to pay the minimum, to those who want to conform to a behavioral norm, to those who want to signal that they are better than average or even hyper-generous.

The transaction can be completed by credit card or PayPal, and purchasers are free to leave their email addresses so that they can be contacted by artists.¹¹⁵ In addition, until recently, physical CDs could also be purchased for an additional \$4.97, covering the costs of materials and shipping.¹¹⁶

Magnatune added a subscription component in May 2008, and tinkered with the component’s design during the study period.¹¹⁷ Initially, purchasers were allowed to buy streaming or download memberships at

112. E-mail from John Buckman, Founder and Owner, Magnatune, to authors (Feb. 4, 2010, 2:09 PM EST) (on file with authors).

113. *Interview with John Buckman, supra* note 100. To understand the business models of open sharing of music, it is worth noting that Magnatune also offers efficient commercial licensing features. In addition to downloading and purchasing albums for individual use, consumers can commercially license music for use in films, ringtones, podcasts, and other media. Commercial licensing represents the site’s largest source of revenue and continues to grow. Unlike the industry standard where licensees often have to show music owners the final work or pay copyright owners perpetual royalties, Magnatune uses a fast, computerized process. Licensees provide details on how the music will be used and the predicted scope of distribution, and Magnatune, trusting the honesty of users, charges a flat fee. These attributes of the site, while interesting, do not go to the question of voluntary donation that is the core concern of our study. *See The Business Model, MAGNATUNE*, <http://www.magnatune.com/info/model> (last visited Sept. 11, 2010).

114. *See infra* Figure 8.

115. *FAQ: Download Membership, MAGNATUNE*, http://www.magnatune.com/info/faq_download (last visited Nov. 18, 2010); *What’s In It for Musicians, MAGNATUNE*, <http://www.magnatune.com/info/musicians> (last visited Oct. 8, 2010).

116. *See FAQ: Download Membership, supra* note 115.

117. *See John Buckman, Magnatune Memberships: The Only “All You Can Eat” DRM-Free Music Subscription Service, BUCKMAN’S MAGNATUNE BLOG* (May 7, 2008, 11:09 AM), <http://blogs.magnatune.com/buckman/2008/05/magnatune-membe.html>.

three month, one year, or lifetime intervals (Period 1).¹¹⁸ Four months later, Magnatune added a flexible payment model to the subscriptions option, allowing customers to select their own price for a subscription by filling in a box and replacing a default price with the new number (Period 2).¹¹⁹ Finally, in November of 2008, Buckman added a one month option to the subscription offerings, lowering the minimum commitment required (Period 3).¹²⁰

We analyzed consumer sales data for Magnatune's site spanning over five years from May 2003 to November 2008.¹²¹ Over that time, 75,186 transactions were completed, generating \$671,770 in revenue. This sum does not include commercial licensing revenues.

FIGURE 5

	Period of Record	Total Transactions	Total Revenue
<i>Albums</i>	5/13/2003–12/11/2008	73589	\$600,750
<i>Subscriptions</i>	4/30/2008–11/20/2008	1597	\$71,020

TABLE 1

	Mean	Median	Mode
Total	8.16	8.00	8.00
Period 1	8.06	8.00	8.00
Period 2	8.32	8.00	8.00
Period 3	8.24	8.00	8.00

Average price per album during three time periods. The difference in mean prices between Period 1 and Periods 2 and 3 is significant at $p > .05$. There is no statistically significant difference between the mean album price during Periods 2 and 3.

118. *Id.*

119. John Buckman, *Pay-What You Want Memberships*, BUCKMAN'S MAGNATUNE BLOG (Sept. 27, 2008, 4:13 AM), <http://blogs.magnatune.com/buckman/2008/09/pay-what-you-wa.html>.

120. John Buckman, *Membership Without Obligation*, BUCKMAN'S MAGNATUNE BLOG, (Nov. 18, 2008, 4:31 AM), <http://blogs.magnatune.com/buckman/2008/11/membership-with.html>.

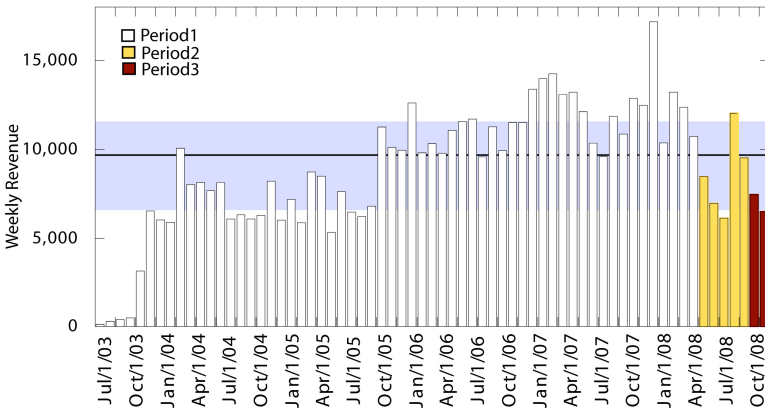
121. Data on file with the authors.

around the least burdensome subscription option but continue to pay more than the minimum.

1. Stable Cooperative System—Over 90% of Revenue Generated from People Paying More than the Minimum Required

In the standard rational-actor model, one would expect fans of the music distributed on Magnatune to pay nothing. The music is available legally and at high technical quality, and can be redistributed at low cost once one copy has been downloaded. Even among fans who choose to buy the music, the standard prediction is that fans would pay the minimum \$5 per album required for purchase. Instead, the payment history over five years demonstrates that Magnatune fans are consistently cooperating and voluntarily paying significantly more than what the site requires. The average price paid on the site is \$8, 60% more than the minimum required \$5 payment. This average payment has persisted from the site’s launch through half a decade of music industry development. Significantly, the introduction of subscription payments on the site did not disrupt the trend of stable voluntary payment.

FIGURE 7



Weekly revenue. The gray box spans the 25th and 75th percentiles.

The level of generosity exhibited by Magnatune’s customers is also significant. It is not just a small crowd of people that pay more than what is required—over 80% of purchasers do, and only 16% of albums are purchased at the minimum price of \$5. The generosity of the voluntary contributors is also notable in that nearly 20% of purchasers paid \$10 or

more—twice the minimum payment required. As a result, over 90% of Magnatune revenues flow from album purchases of \$8 or more.

TABLE 2

	Bin	Frequency	%	Revenue	Revenue %
<i>Minimum</i>	\$5.00	11720	15.93%	\$58,600	9.72%
	\$5.50	446	0.61%	\$2,453	0.41%
	\$6.00	3411	4.64%	\$20,466	3.4%
	\$6.50	28	0.04%	\$182	0.03%
	\$7.00	2053	2.79%	\$14,371	2.38%
	\$7.50	2159	2.93%	\$16,193	2.69%
<i>Typical</i>	\$8.00	35362	48.05%	\$282,896	46.93%
	\$8.50	250	0.34%	\$2,125	0.35%
	\$9.00	1426	1.94%	\$12,834	2.13%
	\$9.50	420	0.57%	\$3,990	0.66%
<i>Better than Average</i>	\$10.00	8974	12.19%	\$89,740	14.89%
	\$10.50	216	0.29%	\$2,268	0.38%
	\$11.00	395	0.54%	\$4,345	0.72%
	\$11.50	10	0.01%	\$115	0.02%
	<i>Generous</i>	\$12.00	3657	4.97%	\$43,884
\$12.50		67	0.09%	\$838	0.14%
\$13.00		193	0.26%	\$2,509	0.42%
\$13.50		33	0.04%	\$446	0.07%
\$14.00		323	0.44%	\$4,522	0.75%
\$14.50		68	0.09%	\$986	0.16%
<i>Very Generous</i>	\$15.00	1072	1.46%	\$16,080	2.67%
	\$15.50	9	0.01%	\$140	0.02%
	\$16.00	188	0.26%	\$3,008	0.50%
	\$16.50	91	0.12%	\$1,502	0.25%
	\$17.00	26	0.04%	\$442	0.07%
	\$17.50	81	0.11%	\$1,418	0.24%
<i>We Love You</i>	\$18.00	867	1.18%	\$15,606	2.59%
	\$18.50	9	0.01%	\$167	0.03%

Bin	Frequency	%	Revenue	Revenue %
\$19.00	6	0.01%	\$114	0.02%
\$22.50	3	0.00%	\$68	0.01%
\$24.00	18	0.02%	\$432	0.07%

Total album sales binned by their relative frequency and percent of total revenue.

2. Coordination Around Focal Points and Norm-Driven Behavior

The Magnatune sales data also illustrates how descriptive signals attached to specific prices can create clear focal points around which purchasers coordinate. Although purchasers can select any dollar amount between \$5 and \$18, 84% of purchasers select a dollar value that has a corresponding label of “typical,” “better than average,” “generous,” “very generous,” or “we love you.” Note that there is no written signal next to the minimum \$5 payment.

FIGURE 8



The coordination around focal points is also illustrated by the steep drop in the percentage of purchasers making payments at rates that do not have corresponding signals. For example, in contrast to the 2% who paid \$9 or the 1.4% who paid \$11, 12% of purchasers paid \$10 for their albums. This pattern indicates the strong effect of reference-dependent payments,¹²² but unlike the standard economic models, the reference on

122. See Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference-Dependent Model*, 106 Q.J. ECON. 1039, 1039–61 (1991); Botond Koszegi & Matthew Rabin, *A Model Of Reference-Dependent Preferences*, 121 Q.J. ECON. 1133, 1133–65 (2006).

which the preference is dependent is a normative one, not an alternative price, good, or state to which the agent orients herself.

Words of encouragement communicated in descriptive signals around the pricing seem to have a significant impact in coordinating cooperative behavior. Designating \$8.00 as “typical” seems to have pulled 48.05% of contributors to the \$8.00 price, 2.93% to \$7.50, and 0.34% to \$8.50, as opposed to \$7.00 or to the minimum. Part of the result can be explained by reference to the apparent allure of whole numbers, as we see some clustering around the \$6.00 price point. Nevertheless, the major driver seems to be the normatively weighted focal points.

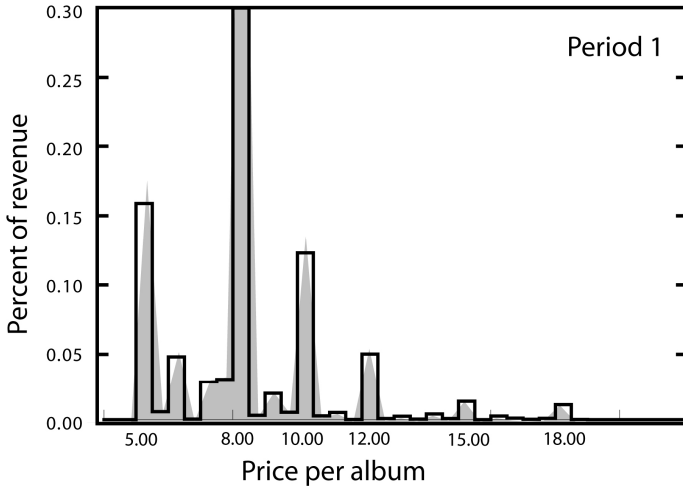
Magnatune does not display the price paid by any individual customers or confer any observable status upon contributors. Instead, the written signals seem to trigger two discrete norms: first, a norm of conforming to the behavior of others, evoked by “typical,” and perhaps even by “better than average”; second, the norm of generosity. Given the absence of any social signal within this system, the behavior is likely most consistent with a self-signaling, warm glow, or norm compliance model of motivation. They allow purchasers to construct an identity as someone who is “typical,” “better than average,” or “generous.”

3. Asymmetrical Payments

Magnatune purchasers exhibit significant asymmetry in price selection. In contrast to Siberry’s model, where 28% of revenue is generated through purchases of \$3 or more per song, only 11% of revenue is generated from purchasers that pay \$12 or more per album. Site design could account for the difference. Unlike Siberry’s pricing scheme, Magnatune caps its payment scale at \$18, and does not provide purchasers with a means for exceeding that amount. It is unclear from the data whether the \$18 maximum, with the accompanying framing of “we love you,” creates a focal point around which extremely generous purchasers would still collect absent the constraint, or whether Magnatune would earn more money if it allowed purchasers to input their own price at the top of the scale, thereby capturing some additional hyper-generous contributions. In any event, most of Magnatune’s revenue comes from purchasers seeking to behave as an “average” purchaser.

But see Henry S. Farber, *Reference-Dependent Preferences and Labor Supply: The Case of New York City Taxi Drivers*, 98 AM. ECON. REV. 1069, 1069–82 (2008) (using data from New York City Taxi Drivers to test a model that provides evidence suggesting that reference-dependent preferences play a limited role).

FIGURE 9



Histograms showing the percentage of total revenue on Magnatune from each album bin.

C. Jonathan Coulton—Individual Artist Developing Cooperative Relationship with Fans

Smaller-scale artists are also pursuing independent distribution of their works through cooperative relationships with fans. Although cooperative distribution in this case may not involve direct monetary payment, what we see in these relationships is that fans are making other contributions in the form of time, labor, marketing, and artistic contributions. As with the voluntary payment schemes we analyze, artists who successfully build supportive fan communities employ a range of design levers that are worthy of close analysis.

Jonathan Coulton is a Brooklyn-based singer and songwriter who produces and sells his music independently.¹²³ The hub of Coulton's operation is his personal website, JonathanCoulton.com, where he communicates with fans, gives away free songs, and sells digital downloads.¹²⁴ In addition to his personal site, Coulton also sells his work through traditional outlets like Rhapsody, iTunes, and Amazon.com.¹²⁵

123. See *The JoCo Primer—General Info*, JONATHANCOULTON.COM, <http://www.jonathancoulton.com/primer/info/> (last visited Oct. 8, 2010).

124. See *id.*

125. *The JoCo Primer—Getting Music*, JONATHANCOULTON.COM, <http://www.jonathancoulton.com/primer/get/> (last visited Oct. 8, 2010).

Coulton's website includes his online store, where he offers roughly one-third of his music for free download, with a recommended price of one dollar per track.¹²⁶ The digital copies are DRM-free and come in high-quality formats.¹²⁷ All songs are sold under a Creative Commons license, which grants consumers the right to share copies for non-commercial use (among other permissions), thus empowering his fans to promote his music and broaden his fan base, but also making any payment on the site strictly "voluntary," as it is not illegal for users to share copies.¹²⁸

Coulton also offers another more unusual transactional option to his fans—his online store invites fans who previously copied his music without paying (using file-sharing networks or burning copies of his CDs) to make a contribution.¹²⁹ He frames this donation option under the heading "Already Stole It?" and allows fans to contribute by purchasing a robot, monkey, or banana icon with an accompanying message to the artist (for example, "Many thanks for the awesome songs JC!" or "\$10 for a monkey! When will it be delivered?").¹³⁰

In contrast to the two other study sites, Coulton's entire distribution and production effort is highly collaborative. He extends cooperation beyond the storefront. Coulton's fans organize and promote live shows, promote his music across the web, and even perform more mundane functions (one fan reformatted Coulton's catalogue for karaoke compatibility, while another designed free graphics for Coulton's digital albums).¹³¹ Many fans have created music videos with his work and posted them on YouTube.¹³² Coulton also maintains constant communication with his fans through both his blog and regular email contact, responding to each and every one of more than one hundred emails he receives daily.¹³³ The site also provides extensive forums where fans

126. *The MP3 Store*, JONATHANCOULTON.COM, <http://www.jonathancoulton.com/store/downloads/> (last visited Oct. 8, 2010).

127. *See id.*

128. *Id.*

129. *Id.*

130. *Id.* Fans who purchase icons are considered members of the "JoCo Golden Circle." *Id.*

131. *See* Spektugalo, *JoCo UltraStar Karaoke Songs Voting*, JoCo FORUMS (Nov. 8, 2008), <http://www.jonathancoulton.com/forums/comments.php?DiscussionID=945>; *The JoCo Primer—More Awesomeness*, JONATHANCOULTON.COM, <http://www.jonathancoulton.com/primer/more/> (last visited Oct. 14, 2010).

132. *Jonathan Coulton*, YOUTUBE, http://www.youtube.com/results?search_query=jonathan+coulton&aq=f (last visited Nov. 22, 2010).

133. Clive Thompson, *Sex, Drugs and Updating Your Blog*, N.Y. TIMES, May 13, 2007, at E42.

introduce themselves, submit clips, and communicate about all things Coulton.¹³⁴

Despite the fact that much of his material is available for free, Coulton earns about \$90,000 annually from voluntary donations and digital downloads on his site.¹³⁵ This accounts for 70% of his overall revenue from digital downloads, with the remainder coming from iTunes and other online stores. Downloads represent about 40% of his overall revenue. CD sales make up another 29%, and ticket sales from live shows 18%. The final 11% comes from T-shirts, typically purchased through his website. Roughly 93% of revenues from website downloads are for songs that can only be downloaded directly from his site upon payment. These payments are “voluntary” in the sense that it would be *easy and legal* (because of his licensing practice) for fans to copy and distribute his music without payment. About 5.5% of store revenues are for payment for free songs (those you can download from the site itself without payment), and another 1.35% comes from donations of monkeys or bananas at the online store. Coulton’s case is notable for the amount of revenue he is earning compared with the other sites under study.

TABLE 3

	Jonathan Coulton	Magnatune	Siberry
Revenue to Artists from Website	\$80–90k yearly	\$8–10k yearly to top artists	\$33k total

The difference in earnings can likely be attributed to some combination of Coulton’s relative popularity and his distribution and website design. We discuss the design elements of Coulton’s store in more detail in Part V of this Article. However, what stands out most vividly is that Coulton engages his fans in a more complex and multifaceted cooperation dynamic, at multiple stages of his distribution strategy, apart from the storefront.

The differing use of voluntary donations on Coulton’s site is also notable. Coulton does not offer flexible payment options within his store. Instead, he uses fixed prices for songs and then solicits donations, while allowing fans to pay the one dollar fixed price for songs.¹³⁶ The voluntary donation strategy, which produces 6.65% of Coulton’s revenue, does not

134. See JoCo FORUMS, <http://www.jonathancoulton.com/forums/> (last visited Oct. 8, 2010).

135. Data on Coulton’s earnings discussed in this Article is on file with the authors.

136. See *The MP3 Store*, *supra* note 126.

appear successful when compared to the 90% of revenue that Magnatune earns for payments of \$8 or more, and with the rate of payment above the minimum that Siberry collects. Given the significant fan dedication harnessed by Coulton's site, there is reason to believe that implementing a flexible payment system, rather than a donation or payment for free songs strategy, would enable Coulton to capture significant additional revenues. This recommendation will be explored further as we now look deeper into the design of the voluntary payment systems on each site.

IV. DESIGNING FOR COOPERATION

Our data suggest that cooperative models based on voluntary contributions to a public good produce meaningful results when compared to industry baselines. A question of great practical significance to artists, and of great theoretical significance to researchers interested in systems designed for cooperation, is how to stabilize and extend this model so as to improve its performance. How do we understand users who pay for what they have already gotten for free? What leads people who have the option of getting an album for \$5 to pay \$8 or even \$16?

The past fifteen years have seen the emergence of a substantial literature studying a range of deviations from the standard rational actor model, and forming the foundations of an approach that provides useful answers to these and related questions. Well-known legal scholarship in this vein has spanned observational work on social norms and trust,¹³⁷ common property regimes,¹³⁸ and experimental behavioral law and economics.¹³⁹ The better-known aspect of the experimental work has been a divergence from the predictions of rationality itself.¹⁴⁰ Less well-known is work that does not take aim at cognitive failures of rationality, but rather challenges two core simplifications of rational actor theory and mechanism design, neither entailed by rationality: that individuals are motivated similarly, and that they are all self-interested.¹⁴¹ Instead, we find that human beings have diverse motivational-behavioral profiles. In experiments, more than half act cooperatively, while a substantial minority, perhaps one-third, behaves as predicted by the standard

137. E.g., ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* 61, 77, 164–66, 247 (1991).

138. E.g., ELINOR OSTROM, *GOVERNING THE COMMONS* (James E. Alt & Douglass C. North eds., 1991).

139. E.g., Christine Jolls, Cass R. Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 *STAN. L. REV.* 1471 (1998).

140. *Id.*

141. See Samuel Bowles & Herbert Gintis, *Homo Reciprocans*, 415 *NATURE* 125, 126 (2002).

rational actor theory.¹⁴² Many are active reciprocators, responding cooperatively to those who cooperate, and punishing, even at a cost to themselves, those who behave uncooperatively.¹⁴³ Others cooperate unconditionally, whether because they are true altruists or solidarists, or because they simply prefer to cooperate and do not measure what others are doing.¹⁴⁴ In addition to the experimental work and the observational work on commons-based regimes and social norms, there is work in social psychology¹⁴⁵ and neuroscience on social preferences,¹⁴⁶ such as empathy¹⁴⁷ and solidarity, or in-group bias,¹⁴⁸ in the evolutionary biology of cooperation,¹⁴⁹ in management science and organizational sociology on new collaborative models of production,¹⁵⁰ in social

142. Three excellent review articles are Colin F. Camerer & Ernst Fehr, *Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists*, in FOUNDATIONS OF HUMAN SOCIALITY 55, 60–65 (Joseph Henrich et al. eds., 2004); Ernst Fehr & Herbert Gintis, *Human Motivation and Social Cooperation: Experimental and Analytical Foundations*, 33 ANN. REV. SOC. 43, 47–51 (2007); Elinor Ostrom, *A Behavioral Approach to the Rational Choice Theory of Collective Action*, 92 AM. POL. SCI. REV. 1, 5–9 (1998).

143. Camerer & Fehr, *supra* note 142, at 60–65; Fehr & Gintis, *supra* note 142, at 47–51; Ostrom, *supra* note 142, at 5–9.

144. Camerer & Fehr, *supra* note 142, at 60–65; Fehr & Gintis, *supra* note 142, at 47–51; Ostrom, *supra* note 142, at 5–9.

145. *E.g.*, Henri Tajfel & John Turner, *An Integrative Theory of Intergroup Conflict*, in THE SOCIAL PSYCHOLOGY OF INTERGROUP RELATIONS 33 (William G. Austin & Stephen Worchel eds., 1979); Toshio Yamagishi et al., *Bounded Generalized Reciprocity, Ingroup Boasting and Ingroup Favoritism*, 16 ADVANCES GROUP PROCESSES 161 (1999).

146. *E.g.*, Tania Singer et al., *Empathetic Neural Responses Are Modulated by Perceived Fairness of Others*, 439 NATURE 466, 466 (2006) (describing changes in empathy level based on fairness of counterparty's play in a prisoner's dilemma game).

147. *E.g.*, C. DANIEL BATSON, THE ALTRUISM QUESTION: TOWARDS A SOCIAL-PSYCHOLOGICAL ANSWER (1991). Batson's work and responses to it produced a major contribution to the literature on the psychology of empathy. More recently, there has been extensive work on the biological foundations of empathy. *See, e.g.*, Paul J. Zak & Jorge A. Barraza, *Empathy and Collective Action* (Apr. 8, 2009) (unpublished manuscript), available at <http://ssrn.com/abstract=1375059>.

148. *E.g.*, Helen Bernhard et al., *Parochial Altruism in Humans*, 442 NATURE 912 (2006); Marilyn B. Brewer, *In-Group Bias in the Minimal Intergroup Situation: A Cognitive-Motivational Analysis*, 86 PSYCHOL. BULL. 307 (1979); Charles Efferson et al., *The Coevolution of Cultural Groups and Ingroup Favoritism*, 321 SCI. 1844 (2008); Henri Tajfel et al., *Social Categorization and Intergroup Behaviour*, 1 EUR. J. SOC. PSYCHOL. 149 (1971); Jay J. Van Bavel et al., *The Neural Substrates of In-Group Bias: A Functional Magnetic Resonance Imaging Investigation*, 19 PSYCHOL. SCI. 1131 (2008); Yamagishi et al., *supra* note 145.

149. *E.g.*, Martin A. Nowak, *Five Rules for the Evolution of Cooperation*, 314 SCIENCE 1560 (2006).

150. *E.g.*, THE FIRM AS A COLLABORATIVE COMMUNITY: THE RECONSTRUCTION OF TRUST IN THE KNOWLEDGE ECONOMY (Charles Heckscher & Paul S. Adler eds., 2006); Walter W. Powell, *Neither Market nor Hierarchy: Network Forms of Organization*, in 12 RESEARCH IN ORGANIZATIONAL BEHAVIOR 295 (Barry M. Staw & L. L. Cummings eds., 1990).

software and peer production online,¹⁵¹ and in social network theory on how social dynamics influence behavior,¹⁵² all of which provide different perspectives on why we cooperate, and what aspects of the systems we inhabit influence the degree to which we cooperate.

It is inappropriate to claim that we can create a set of predictions about human behavioral responses to various design interventions under the claimed determinism of the traditional rational actor theory. But the crispness of the theory was itself overstated. It is, nonetheless, feasible to synthesize out of this range of materials a set of design interventions that we can predict with some confidence will likely improve the quality of cooperation.¹⁵³

Communication

Communication plays a critical role in fostering cooperation. In dozens of experiments, allowing participants to communicate with one another predictably and reliably leads to higher levels of cooperation.¹⁵⁴ Experiments also show that unstructured, fluid communication is more effective than simply sending canned messages. Specifically, we use communication to achieve several design levers discussed here, like trust and humanization¹⁵⁵ and promise to cooperate even where the promise is non-binding in the sense that there is no third-party enforcer.¹⁵⁶ In observational work too, stabilizing and routinizing communication is a central

151. E.g., YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2006); Yochai Benkler, *Coase's Penguin, or, Linux and "The Nature of the Firm,"* 112 *YALE L.J.* 369 (2002) [hereinafter Benkler, *Coase's Penguin*].

152. E.g., Nicholas A. Christakis & James H. Fowler, *The Spread of Obesity in a Large Social Network over 32 Years*, 357 *NEW ENG. J. MED.* 370, 370–79 (2007) [hereinafter Christakis & Fowler, *Obesity*]; James H. Fowler & Nicholas A. Christakis, *Dynamic Spread of Happiness in a Large Social Network: Longitudinal Analysis over 20 Years in the Framingham Heart Study*, 337 *BMJ* a2338 (2008); Nobuyuki Hanaki et al., *Cooperation in Evolving Social Networks*, 53 *MGMT. SCI.* 1036, 1036–50 (2007); Gregory Todd Jones, *Heterogeneity of Degree and the Emergence of Cooperation in Complex Social Networks*, 10 *EMERGENCE: COMPLEXITY & ORG.* 46, 46–54 (2008).

153. See Yochai Benkler, *The Penguin and the Leviathan: The Science and Practice of Cooperation* (forthcoming 2011) (discussing implications of evolutionary, social, and psychological research to organizational, institutional, and technical design aimed at increasing cooperation through leveraging empathy and solidarity, fairness and norms, and reciprocal social dynamics).

154. See, e.g., David Sally, *Conversation and Cooperation in Social Dilemmas*, 7 *RATIONALITY & SOC'Y* 58, 58–92 (1995).

155. See, e.g., Olivier Bochet et al., *Communication and Punishment in Voluntary Contribution Experiments*, 60 *J. ECON. BEHAV. & ORG.* 11, 11–26.

156. Olivier Bochet & Louis Putterman, *Not Just Babble: Opening the Black Box of Communication in a Voluntary Contribution Experiment*, 53 *EUR. ECON. REV.* 309, 309–26 (2009).

aspect of the new managerial processes.¹⁵⁷ Communication is both a dynamic in its own right and a mechanism for producing the other design levers. First, communication is a mechanism through which people come to see their own goals, preferences, and policies in conversation with others with whom they interact—a mechanism for endogenous creation of prosocial motivations. Communications is also a foundational, and often the most readily available and natural, mechanism for facilitating most of the other design levers. The effect of communication is a very robust finding in these literatures, and an obvious target for design interventions. It has a large effect in experimental work, and its routinization is one of the core design principles of the organizational shift to collaborative models.

Situational Framing

We cannot help but think of relations within frames of reference, and these frames in turn shape the remainder of the decisional process. In sociology, Erving Goffman called this aspect of interactions “frame analysis.”¹⁵⁸ In psychology, it is often called “situational construal” or simply “framing.” The baseline phenomenon is the same: we cannot avoid interpreting a situation in which we find ourselves in social and cultural terms. In this model, we are already at least partly determining the nature of the interaction and our likely behavior in it. This aspect of the interaction is like a lens through which we observe reality, and which simply must exist; there is no unmediated mechanism of accessing a situation that does not go through a lens of cognitive and social-cultural framing. One particularly evocative experiment studied whether framing a game by telling the subjects they were playing “the community game” as opposed to telling them that they were playing “the Wall Street game” would make a difference.¹⁵⁹ The study found that under an identical pay-off structure, about 70% of subjects told they were playing “the community game” cooperated for the duration of the experiments.¹⁶⁰ When subjects were told that they were playing “the Wall Street game,” 33% opened cooperatively, and the rest defected and continued to defect throughout the game.¹⁶¹ The framing choice in this case may have

157. See, e.g., Anabel Quan-Haase & Barry Wellman, *Hyperconnected Net Work: Computer-Mediated Community in a High-Tech Organization*, in HECKSCHER & ADLER, *supra* note 150, at 281–333 (describing communications flows in collaborative segments of a firm).

158. ERVING GOFFMAN, *FRAME ANALYSIS: AN ESSAY ON THE ORGANIZATION OF EXPERIENCE* 1–20 (1st ed. 1974).

159. Varda Lieberman et al., *The Name of the Game: Predictive Power of Reputations Versus Situational Labels in Determining Prisoners Dilemma Game Moves*, 30 *PERSONALITY & SOC. PSYCHOL. BULL.* 1175, 1176 (2004).

160. *Id.* at 1177.

161. *Id.*

informed subjects as to “the right thing to do,” or it may have acted to alter their predictions about what others would do, so as to make cooperation or defection a better strategy. But it clearly had a real effect on behavior of otherwise similar populations encountering otherwise identical payoffs.

Empathy and Solidarity: Expanding the Set of Subjects Whose Utility Matters

One of the first deviations from pure self-interest is our ability to care about the payoffs to particular others as individuals, and our capacity to care about payoff to a group that we see as constituting at least part of our identity. These are, respectively, empathy and solidarity. One clear experimental finding is that humanization—mechanisms to assure that participants know and recognize the humanity of their counterparts—improves the number of cooperators and the degree of “generosity” they are willing to show others.¹⁶² Neuroscientific studies support the proposition that agents’ brains respond differently to cooperation with humans than to “cooperation” (that is, playing strategies that in game theory count as cooperative) with computers.¹⁶³ Current neuroscience and neurochemical analyses suggest that this effect is quite primitive, and likely mediated by oxytocin uptake in the brain.¹⁶⁴ But treating other individuals as human beings generally, worthy of our concern, is only one of two signals of the degree to which another is worthy of our cooperation or, at least, is highly likely to reciprocate. The other major approach to triggering the recognition of other as close to oneself is group solidarity. There has been substantial work in social psychology to support the finding that people increase the degree to which they cooperate with strangers whom they perceive to be part of even very minimally-triggered solidarity groups. Experimental subjects in psychological experiments show greater generosity to, and cooperation with, others who merely claimed to share their preferences to Klee paintings over Kandinsky, and vice versa,¹⁶⁵ although more robust solidarity groupings offer a more stable basis for sustained cooperation.¹⁶⁶ There continues to be substantial work refining the degree of solidarity present, and the extent to which it is a heuristic for reciprocity as opposed to something more foundational to

162. Iris Bohnet & Bruno Frey, *The Sound of Silence in Prisoner's Dilemma and Dictator Games*, 38 J. ECON. BEHAV. & ORG. 43, 43, 53 (1999).

163. James K. Rilling et al., *A Neural Basis for Social Cooperation*, 35 NEURON 395, 395–96 (2002); James K. Rilling et al., *Opposing Bold Responses to Reciprocated and Unreciprocated Altruism in Putative Reward Pathways*, 15 NEUROREPORT 2539, 2539–43 (2004).

164. See Zak & Barraza, *supra* note 147, at 2, 14.

165. See David G. Rand et al., *Dynamic Remodeling of In-Group Bias During the 2008 Presidential Election*, 106 PROC. NAT'L ACAD. SCI. 6187 (2009).

166. See *id.*

identity membership.¹⁶⁷ But the role of symbolically marked groups in fostering cooperation is substantial in scholarship in human evolutionary biology,¹⁶⁸ in particular the anthropological work on the co-evolution of genes and culture.¹⁶⁹ A similar dynamic, covered by the concept of “affiliation-based trust” in organizational sociology,¹⁷⁰ is consistent with the role of homophily in social networks,¹⁷¹ and plays a significant role in organizational psychology.¹⁷² The basic intuition is that either (a) the more someone has a sense of being part of a team, the more one is willing to sacrifice one’s own good for the group, or (b) the clearer the “groupness” of the group, the more likely cooperative action will be reciprocated. Both empathy and solidarity, and their instigation through face-to-face meetings or detailed descriptions of the background of participants, are another important mechanism for design, and are directly part of the dynamic of recognition.

Normativity: Fairness, Rights, and Norm Conformism

In his classic *Rational Fools* Amartya Sen emphasized the importance of what he called “commitment” to human motivation, and the failure of economics, by and large, to account for the possibility that people act out of commitment.¹⁷³ Commitment should cover at least two distinct concerns: what is fair and what is right. Indeed, a consistent finding in the experimental literature is that fairness is endogenous to the cooperative dynamic. People care about the fair distribution of

167. See *id.*; see also Joachim I. Krueger & Theresa E. DiDonato, *Social Categorization and the Perception of Groups and Group Differences*, 2 SOC. & PERS. PSYCHOL. 733, 741–45 (2008) (exploring whether solidarity is an internalized form of identity or a shortcut people use to determine whether they are likely to interact with a person again, and therefore should cooperate with them in expectation of future reciprocity).

168. See, e.g., Ernst Fehr et al., *Egalitarianism in Young Children*, 454 NATURE 1079–1083 (2008); Rand et al., *supra* note 165.

169. See, e.g., ROBERT BOYD & PETER J. RICHERSON, *CULTURE AND THE EVOLUTIONARY PROCESS* (1985); PETER J. RICHERSON & ROBERT BOYD, *NOT BY GENES ALONE: HOW CULTURE TRANSFORMED HUMAN EVOLUTION* (2004).

170. See Lynne G. Zucker, *Production of Trust: Institutional Sources of Economic Structure, 1840–1920*, 8 RES. ORG. BEHAV. 53 (1986).

171. See generally Miller McPherson et al., *Birds of a Feather: Homophily in Social Networks*, 27 ANN. REV. SOC. 415 (Aug. 2001).

172. See generally S. ALEXANDER HASLAM, *PSYCHOLOGY IN ORGANIZATIONS: THE SOCIAL IDENTITY APPROACH* (2004) (claiming that fostering the creation of a social identity among members in an organization, in particular employees of a firm, improves organizational performance).

173. See generally Sen, *supra* note 96, at 317 (arguing that standard economics fails to appreciate that we act in certain ways not only to advance material self-interest, but also to follow through on our moral commitments, including where doing so undermines our material self-interest).

outcomes,¹⁷⁴ the perceived fairness of the intentions of others in the interactions,¹⁷⁵ and the fairness of the process of the interaction.¹⁷⁶ As we will see, several of the sites seek to trigger a sense of fair action, between fans and the artist and amongst the fans, as an element in the site design.

In addition to fairness, many of us also care about doing what is right, that is to say, doing what is morally appealing. There is increasing work today in cognitive psychology and neuroscience covering this basic fact—that we have an emotional and subconscious rational need to do what we understand to be moral.¹⁷⁷ Appeals to fairness or to doing what is right, which we see in various tones on the music sites we study here, are therefore not simply irrelevant whining, but appeal directly to concerns that many of us have and experience as reasons for prosocial action.

In addition to seeking to do what is fair and what is right, we also have a widespread practice of doing what is just plain normal; that is, conforming to social norms.¹⁷⁸ The literature on social norms in law generally deals with long-standing, usually tight-knit communities, which combine many of the design levers we describe here.¹⁷⁹ When contemplating the design for systems that may be as new as a collaborative wiki launched yesterday, or in our case, musicians' sites, social norms must play a different role. At a minimum, they refer not to long-standing internalized norms, but to instances of more-or-less clearly specified behavioral expectations about what counts as "cooperative" in a given system. Once participants know what counts as cooperation and what as defection, they can adjust their own actions, as well as judge the actions of others. In music, we have seen references to the "typical" or "average" amount donated, or a "suggested" price, playing this role. These

174. See Fehr & Schmidt, *supra* note 99, at 208 ("The evidence suggests that many people are strongly motivated by other-regarding preferences, and that concerns for fairness and reciprocity cannot be ignored in social interactions.").

175. See *id.* at 224-29; see also Armin Falk et al., *On the Nature of Fair Behavior*, 41 *ECON. INQUIRY* 20, 20-26 (2003) (describing experiments in which subjects were confronted with outcomes that were unfair, but where it was sometimes clear that the other party had no intention of treating them unfairly, and sometimes that the unfair treatment was the product of intentional action, and showing that subjects responded differently to unfair intentions, cumulative to unfair outcomes).

176. See Tom R. Tyler, *Procedural Justice, Legitimacy, and the Effective Rule of Law*, 30 *CRIME & JUST.* 283, 284 ("[P]eople's reactions to legal authorities are based to a striking degree on their assessments of the fairness of the process by which legal authorities make decisions and treat members of the public.").

177. See generally HAUSER, *supra* note 97 (reviewing extensive literature on the cognitive, emotional, neuroscientific components, and processes underlying moral capacities).

178. ELLICKSON, *supra* note 137, at 130, 149-55; Richard H. McAdams, *The Origin, Development and Regulation of Norms*, 96 *MICH. L. REV.* 338, 343-52 (1998).

179. See, e.g., OSTROM, *supra* note 138 (the foundational text in the field).

serve as Schelling coordination norms,¹⁸⁰ providing a focal point for coordinating behavior. Beyond that, they can be explicitly stated expectations about behavior, like the purely norm-based system that anchored Wikipedia and made it unique among cooperation models in its early days. There is evidence that norms that are self-consciously chosen by a group enjoy high adherence with minimal enforcement requirements.¹⁸¹ Where these norms evoke background norms that are already culturally ingrained, they may enjoy the status of those already internalized norms, or the norms can themselves be the object of enforcement through another design lever, punishment.

Trust and Authenticity

Trust is the subject of its own immense literature, and has been used in many different ways.¹⁸² Often, particularly in computer science, it is used to characterize the success of a system that removes the possibility of human defection or error.¹⁸³ That is the purpose of trusted computing platforms. When used thus, “trust” is not a design lever at all, but rather a description of the outcome of a system, which signifies confidence in its performance. Trust as a design lever should be seen as an attitude or belief of agents, not a condition they inhabit. It is a belief about how others in the system will behave in the absence of constraint. That is, whether these others are likely to be harmful or helpful to the trusting agent when not forced to be helpful, or prevented from being harmful, by the system itself.¹⁸⁴ Trust here means a factual belief held by individuals about the state

180. Thomas Schelling introduced the idea of a focal point for coordination in THOMAS SCHELLING, *THE STRATEGY OF CONFLICT* 54–55 (1960).

181. ELINOR OSTROM, ROY GARDNER & JAMES WALKER, *RULES, GAMES, AND COMMON POOL RESOURCES* (1994).

182. See generally *TRUST & RECIPROCITY: INTERDISCIPLINARY LESSONS FROM EXPERIMENTAL RESEARCH* (Elinor Ostrom & James Walker eds., 2005) (reviewing current work on trust); *TRUST: MAKING AND BREAKING COOPERATIVE RELATIONS* (Diego Gambetta ed., 1998) (representing one of the earliest collections emphasizing trust); Iris Bohnet, Bruno S. Frey & Steffen Huck, *More Order with Less Law: On Contract Enforcement, Trust, and Crowding Out*, 95 AM. POL. SCI. REV. 131 (2001) (analyzing the dynamics of trust over time given varying institutional arrangements); Dan M. Kahan, *The Logic of Reciprocity: Trust, Collective Action, and Law*, 102 MICH. L. REV. 71 (2003) (providing the first major analysis of how the experimental literature on trust and reciprocity intersects with legal design).

183. See Helen Nissenbaum, *Will Security Enhance Trust Online, or Supplant It? in TRUST AND DISTRUST WITHIN ORGANIZATIONS: EMERGING PERSPECTIVES, ENDURING QUESTIONS*, RUSSELL SAGE PUBLICATIONS 155–88 (R. Kramer & K. Cook eds., 2004), available at <http://www.nyu.edu/projects/nissenbaum/papers/trust.pdf>.

184. There is increasing evidence that this “state of mind” understanding of trust (as opposed to a “state of affairs” concept) is mediated in the brain by oxytocin uptake. Zak & Barraza, *supra* note 147, at 2, 12. For our purposes, the process is less important than the extent to which it reinforces that trust as a design lever should be understood as a subjective state of mind of agents in a system—a state that can be developed and aided by the system design, but is not itself an objective characterization of the system.

of the social system they occupy. Thus, we treat it differently than normativity. Trust as we use it here is not about the value of being trustworthy, rather, it is about constructing a system in which people can reasonably believe that some substantial number of others will not take advantage of them whenever they can. Constructing a system that builds this sense of trust will usually be facilitated by breaking down cooperative actions into observable chunks, where participants can lower their exposure to others while, for example, observing their proclivities to cooperate or defect. A subset, or a requirement of trust, is that the person constructing the cooperative system is regarded as an authentic actor. The basic insight is simple: empty promises of community and cooperation may trick others for a short time, but not over the long term. An artist or label that wishes to engage a cooperative dynamic will need to make a credible commitment and behave in a way that authentically exhibits trustworthiness as a stable characteristic, as well as exhibiting trust in other players.

Transparency and Reputation

Another important design element, the transparency of a system, bears powerfully on the issues of both trust and punishment. Critically, many of the other design features depend on participants knowing who did what, to and with whom, to what effect, and by which mechanism. Recognition of this dependence lies behind the argument that biologists Nowak and Sigmund make about the evolutionary impact of moral accounting (though they did not call it that); such accounting, they suggest, was necessary to sustain indirect reciprocity, which in turn may have been the driving force behind the evolution of human intelligence.¹⁸⁵ Whether or not they are correct, studies in experimental economics typically show that games in which subjects can develop and communicate reputations lead to cooperation more quickly and robustly than anonymous games.¹⁸⁶ Similarly, reputation systems play a significant role in social software platforms, ranging from commercial systems like eBay and Amazon.com,¹⁸⁷ to the wide range of commons-based peer production projects that deploy the possibility of creating a stable locus for

185. See Martin Nowak & Karl Sigmund, *Evolution of Indirect Reciprocity*, 437 NATURE 1291, 1296–97 (2005).

186. See Ernst Fehr & Simon Gächter, *Cooperation and Punishment in Public Goods Experiments*, 90 AM. ECON. REV. 980, 986–91 (2000).

187. See Paul Resnick & Richard Zeckhauser, *Trust Among Strangers in Internet Transactions: Empirical Analysis of eBay's Reputation System*, in 11 ADV. APPLIED MICROECON. 127 *passim* (Michael R. Baye ed., 2002).

reputation, and observable behavior and opinion, as a major design element.¹⁸⁸

Autonomy/Efficacy

There is significant psychological literature suggesting that people need a personal sense of competence or efficacy in their actions, and pursue activities that satisfy that need.¹⁸⁹ A central aspect of the reforms initiated by the Toyota Production System had to do with decreasing the number of process engineers, and locating greater autonomy to define the specifics of execution of the task at hand in the hands of employees in teams, on the line.¹⁹⁰ This need for autonomy and personal efficacy then plays an important role in limiting the efficacy of reward and punishment as complementary, as opposed to competing, methods of assuring cooperation. Efforts to assure and visibly permit personal autonomy, and to illuminate the efficacy of contributions, appear to be important to stabilizing levels of contribution.

Calculation: Punishment, Reward, Crowding Out and Cost

The first set of design levers all operate at the level of intrinsic motivations. That is, they cause participants to want to cooperate for reasons that are internal to their own psychological and social needs and desires, rather than in response to external rewards or constraints. However, both the observational and experimental work suggest a significant diversity in motivational profiles, and a substantial presence of selfish actors. Thus, stable cooperation systems require extrinsic motivations to keep in line those not driven to cooperate by intrinsic motivations, and to prevent the unraveling of cooperation in those situations (which are not all instances of cooperation) where the presence of selfish actors can undermine the efficacy, fairness, solidarity, or any of the other mechanisms that might sustain cooperation among cooperators, even in the presence of defectors. The presence and design of mechanisms for disciplining and punishing defectors are therefore important to the overall design of cooperation platforms. The experimental literature finds that (a) with the right design, reciprocators can solve the second-order public

188. See, e.g., *Wikipedia: Barnstars*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Wikipedia:Barnstars> (last visited Sept. 1, 2010); see also Yochai Benkler, *Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production*, 114 YALE L.J. 273, 292–95 (2004) (discussing aspects of SETI@Home that allow individuals and teams to be seen as particularly high contributors).

189. See, e.g., Edward L. Deci & Richard M. Ryan, *The “What” and “Why” of Goal Pursuits: Human Needs and the Self-Determination of Behavior*, 11 PSYCH. INQUIRY 227 (2000).

190. See Paul S. Adler et al., *Flexibility Versus Efficiency? A Case Study of Model Changeovers in the Toyota Production System*, 10 ORG. SCI. 43, 54–56 (1999).

goods problem of punishment without intervention from an external body, such as the state or management,¹⁹¹ but (b) punishment can backfire if it is not properly designed, leading to deterioration.¹⁹² It is important to understand that punishment does not collapse the analysis back to selfish rationality. It is neither necessary (we see cooperation without it) nor sufficient (we see instances where it reduces cooperation, probably through crowding out) to explain cooperation. It can impose such great costs on groups that the game is not worth the candle.¹⁹³ In addition, the degree to which its effects are beneficial or detrimental varies among cultures.¹⁹⁴ But it remains one design lever available to systems designers to improve compliance by selfish actors with the cooperative behavior of the other agents in the system. While punishment has been studied much more extensively, reward systems have a similar and symmetric structure—participants pay a cost to keep the more self-interested behavior of others in line with the common good. Analytically, rewards are merely negative punishments. They also have the benefit of not triggering spirals of mutual punishment.

The ambiguous effects of punishment bring to the fore one more design focus, or constraint: the phenomenon of crowding out, or the non-severability of motivational vectors. Crowding out refers to the situation in which an intervention in one motivational subsystem (most importantly, affecting material interests through explicit incentives treatments, in the form of reward or punishment), leads to opposite effects in other motivational subsystems (such as affecting commitment to a project, or moral commitment to a behavior).¹⁹⁵ Intra-system crowding out refers to situations where use of one design lever reduces the efficacy of another. For example, the introduction of punishment can, under certain circumstances, crowd out trust, and thereby undermine, rather than improve, cooperation.¹⁹⁶ From the psychological literature, we know that even ex-

191. See Bowles & Gintis, *Homo Reciprocans*, *supra* note 141, *passim*; Fehr & Gächter, *supra* note 94, *passim*.

192. Armin Falk et al., *Driving Forces Behind Informal Sanctions*, 73 *ECONOMETRICA* 2017, 2028–29 (2005); Ernst Fehr & Bettina Rockenbach, *Detrimental Effects of Sanctions on Human Altruism*, 422 *NATURE* 137, 140 (2002).

193. Anna Dreber et al., *Winners Don't Punish*, 452 *NATURE* 348, 350 (2008).

194. Benedikt Herrman et al., *Antisocial Punishment Across Societies*, 319 *SCIENCE* 1362, 1363–64 (2008).

195. See BRUNO S. FREY, *NOT JUST FOR MONEY: AN ECONOMIC THEORY OF PERSONAL MOTIVATION* 25–26 (1997); Benabou & Tirole, *supra* note 90, at 908; Bruno S. Frey & Reto Jegen, *Motivational Interactions: Effects on Behavior*, Samuel Bowles, *Policies Designed for Self-Interested Citizens May Undermine “The Moral Sentiments”: Evidence from Economic Experiments*, 320 *SCIENCE* 1605 (2008); 63/64 *ANNALES D'ÉCONOMIE ET DE STATISTIQUE* 131, 149 (2001).

196. Toshio Yamagishi, *The Provision of a Sanctioning System as a Public Good*, 51 *J. PERSONALITY & SOC. PSYCHOL.* 110, 114 (1986).

plicit rewards can trigger the crowding out effect, but not as powerfully, and that they may be susceptible to framing that will treat them as non-controlling rewards.¹⁹⁷ Inter-system crowding out can occur when one tries to “mix-and-match” elements from cooperative systems with elements from other systems, such as market mechanisms. There is a broad literature on crowding out caused by the introduction of money into otherwise cooperation-based interactions.¹⁹⁸ For the kinds of systems we are studying here, crowding out presents a particularly salient problem, because the object of cooperation is payment in money. Given that we observe many mixed systems, such as open source software innovation and the introduction of cooperative models into firms, mixing is not impossible. But it requires attention to the interactions between the motivational and organizational forms, rather than a simple assumption of additive effect.¹⁹⁹

In addition to punishment and reward, which operate primarily on individuals who otherwise might not cooperate because of intrinsic drives, it is important to remember that the existence of prosocial motivations does not exclude consideration of personal costs and benefits. The point is not that large numbers of us are altruists irrespective of cost. Rather, it is that large numbers of us have prosocial motivations—regard for others owing to empathy and solidarity, or regard for the normative implications of what we do, in addition to our other cost-benefit considerations. It is not surprising, therefore, that the cost of cooperation affects its levels and the number of people who cooperate. In experiments, subjects will cooperate more when the cost of doing so is lower, such as when the opportunity cost of cooperating in a prisoner’s dilemma is lower because of payoff structure,²⁰⁰ and in real life we see improvements in peer production online when the task has been modularized or chunked into sufficiently fine-grained modules to make the cost of contribution smaller.²⁰¹

Social Dynamics

There is a growing body of research today in social network effects on behavior. It turns out, for example, that our own obesity is affected by

197. Deci & Ryan, *supra* note 189, at 235.

198. See, e.g., Bruno S. Frey & Reto Jegen, *Motivation Crowding Theory*, 15 J. ECON. SURVS. 589 (2001); Bowles, *supra* note 195, at 1605–1609.

199. See Yochai Benkler, *Beyond the Bad Man and the Knave: Law and the Interdependence of Motivational Vectors*, YALE LAW SCHOOL (Mar. 12, 2010), http://www.law.yale.edu/documents/pdf/Intellectual_Life/LTW-Benkler.pdf.

200. See, e.g., Colin F. Camerer & Ernst Fehr, *Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists*, in FOUNDATIONS OF HUMAN SOCIALITY 55, 61–68 (Joseph Henrich et al. eds., 2004).

201. Benkler, *Coase’s Penguin*, *supra* note 151, at 377–78.

whether our friends and relatives have recently become obese.²⁰² The mechanism is not altogether clear, but it appears that there is at least some role for benchmarking and imitation—that is, we judge our own behavior and outcomes by comparing ourselves to others in our social neighborhood.²⁰³ Allowing participants to observe each other (transparency), and to selectively form and break attachments with people who are more-or-less cooperative (in order to increase the number of interactions they have with cooperators as opposed to defectors), is therefore also a valuable design feature in enabling groups of cooperators to stabilize and provide mutual support.

Within social dynamics, leadership is important. This conclusion does not come out of the experimental work, which does not examine leadership, but it is a consistent feature of the organizational sociology,²⁰⁴ is often emphasized in the study of open source software,²⁰⁵ and has been an object of study for field studies of online cooperation as well.²⁰⁶ It is important to recognize, however, that “leadership” does not mean “hierarchy.” Rather, what we see in the observational work is that people contribute at widely diverse levels, and systems need to be designed to accommodate these divergent patterns and to find fulfilling ways for participants to be recognized for their asymmetric contribution, often through greater say in the collective governance of the enterprise, or through symbolic means of expressing honor and respect. Moreover, for at least some people, it is precisely the seeking of positional power, and recognition of leadership, that can drive generous and prosocial behavior. The role of gift giving as a modality of asserting dominance, or agonistic giving, is widespread in the anthropology of the gift,²⁰⁷ in fundraising practices where public exhibition of one’s gift is a form of asserting status, and we also see it in some, but by no means all, online cooperation sites.

The following, then, is a list of the above design levers, or design considerations:

202. Fowler & Christakis, *Obesity*, *supra* note 152, at 370.

203. See Hanaki et al., *supra* note 152, at 1036.

204. See MICHAEL MACCOBY & CHARLES HECKSCHER, *A Note on Leadership in Collaborative Communities*, in HECKSCHER & ADLER, *supra* note 150, at 469–478.

205. STEVE WEBER, *THE SUCCESS OF OPEN SOURCE* 166–71 (2004).

206. See, e.g., Mayo Fuster Morell, *Governance of Online Creation Communities: Provision of Infrastructure for the Building of Digital Commons* (Aug. 2010) (unpublished Ph.D. dissertation, EUROPEAN UNIVERSITY INSTITUTE) (on file with authors); Joseph M. Reagle Jr., *Do as I Do: Authorial Leadership in Wikipedia*, REAGLE.ORG (Oct. 2007), <http://www.reagle.org/joseph/2007/10/Wikipedia-Authorial-Leadership.pdf>.

207. See, e.g., MAURICE GODELIER, *THE ENIGMA OF THE GIFT* 1–9 (Nora Scott trans., Univ. Chi. Press 1999).

Communication

Situational Framing

Expanding the utility function:

Empathy

Solidarity

Normativity

Fairness

Moral commitment

Norm compliance or conformism

Trust

Trust and authenticity

Transparency and reputation

Autonomy/efficacy

Calculation

Punishment and reward

Crowding out

Cost

Social dynamics

Social network effects

Leadership and asymmetry

No list of fourteen potential loci of design intervention can hope to provide the determinism implied by simpler models of human motivation and system intervention. For readers who seek the comfort of analysis capable of stating “if you do *X*, you will increase rewards through action *A*, and therefore increase compliance with the expected behavior,” what follows in Part V will be disappointing. Other readers may recognize that human motivations and social, psychological, and cultural interactions are extremely complex phenomena. They cannot be reduced to a simple “if you do *X* then *A* will follow” without enormous loss of information. Readers who accept this reality may be more patient as we explore how the design levers still provide substantial advantages over an approach that simply recognizes the complexity of human action and calls for highly contextual analysis. In Part V, we suggest that the

design levers indeed offer some greater purchase to explaining and predicting results, provide analysis of diverse design decisions, and offer suggestions for design improvements in discrete cooperative activities—like voluntary payment music websites.

V. USE OF DESIGN LEVERS IN INTERFACE DESIGN IN STUDY SITES

This section seeks to demonstrate how the levers can be implemented in practice by analyzing the study sites. In so doing, we highlight the differences in design choices across the sites, and gain insight into which designs are more conducive to cooperation. Naturally, the sites presented here represent only one set of ways in which the levers could be implemented.

For example, a site might aim to build empathy among users and humanize an artist by detailing an artist's personal story and enabling the artist to communicate with fans through a blog or email. Alternatively, rather than aggregating and publishing this information unilaterally, a website might give fans tools to upload testimonials and stories of an artist. Both mechanisms achieve a similar goal of humanizing the artist, but they do so through different design interventions. Here we detail and compare the design decision employed on each of the study sites while also suggesting alternative implementations.

Communication

Despite the salience of communication as a cooperation-enabler, most communication on Magnatune and on Siberry's site is unidirectional. The sites are not built as social networks with active profile messaging, internal emailing, chat rooms, or other user interaction. Instead, messaging flows from the owners to fans, and there is little robust fan-to-fan or artist-to-fan dialogue. On Magnatune, for example, the site founder keeps a blog where he regularly messages the community, but community posting on blog posts is limited.²⁰⁸

By contrast, Coulton's site includes active community forums that contain over one thousand discussion threads.²⁰⁹ The forums are administered by volunteers and require all contributors to sign in before posting.²¹⁰ As predicted by cooperation theory, what we see in these forums is a community that actively discusses its relationship to Coulton and to the broader project of cooperative music distribution. The fans

208. See Buckman, *Magnatune Memberships*, *supra* note 117.

209. See JoCo FORUMS, *supra* note 134.

210. See *id.*

engage with the various payment options that Coulton presents and share their views on acceptable behavior.

For example, in a thread called “Payday,” fans directly respond to Coulton’s payment proposition:

Lots of [my music] is freely available depending on how technical you are—you can get all of it for free if you really try. But please remember I do make a living this way, so if you like what you hear I’d certainly appreciate you throwing a little payment or donation my way. If you can’t afford it, for goodness sake please send copies of everything to all of your friends.²¹¹

The responses to this request range in character. Here are a few responses seen in the “Payday” thread:

“People should donate/pay what they feel the music deserves, and if you can’t afford to pay money, it is ok to pay in your time and effort in spreading the word of how awesome this music is.”

“Well people that enjoy his music, download it, and never give a penny should feel guilty. If you can afford an internet connection, you can afford to pay something.”

“His intentions seem pretty clear to me. He’d like you to pay for it, but he’d rather you take it for free than not take it at all. Just spread it around, and he knows eventually money (poop?) will come back to him. I’ve given him money for music & concert tickets, but I always sort of feel like I haven’t given him nearly enough to cover all the entertainment he’s provided me. I do ‘promote’ him by giving people CD’s, sending youtube [sic] links, talking about his music to anyone who’ll listen, etc.....[sic]”²¹²

What we see throughout these comments and the broader discussion is that fans use the forums to present themselves and identify as part of the cooperative community. The community tools are then used to discuss the question of voluntary payment and define norms and practices. It is thus the provisioning of the communications tools that allows this conversation about fairness to develop and enables fans to see themselves as connected to a broader community of purchasers.

211. *The JoCo Primer—Getting Music*, *supra* note 125.

212. *Payday*, JoCo FORUMS, <http://www.jonathancoulton.com/forums/comments.php?DiscussionID=1139> (last visited Nov. 19, 2010).

Situational Framing

All three of the sites under study frame the exchange of music as more than a monetary transaction. Purchasing music becomes an opportunity to participate in something greater. It is a chance to support an artist, to give a gift, and to remedy the problems in the music marketplace.

That said, the frame used and the method of communicating the frame differs from site to site. On Magnatune, visitors are invited to take part in the launch of a new music label and a new way of distributing music. The framing takes place through the Magnatune tagline, “We are not evil You get great music, musicians get 50%,” the labeling of the different levels of payment, and the founder’s detailed explanation of Magnatune’s creation.²¹³ Specifically, after detailing the difficulties his wife experienced as an independent musician, Buckman explains:

I thought: why not make a record label that has a clue? That helps artists get exposure, make at least as much money [sic] they would make with traditional labels, and help them get fans and concerts.

. . . .

If you think Magnatune is a worthy goal, please support it. There are powerful forces who want it to fail, so I need your help if this is going to work.²¹⁴

Coulton, by contrast, takes fans out of a pure transactional context by framing the site as a music community. He invites fans to participate throughout the site but then warns, “listen to my music, be part of my community, but remember I make my living this way.”²¹⁵ Furthermore, rather than emphasizing duty or obligation, Coulton expresses appreciation for contributions and invites reciprocity. For example, when he explains how fans can “get music” he writes, “[i]f you like what you hear I’d certainly appreciate you throwing a little payment or donation my way. If you can’t afford it, for goodness sake please send copies of everything to all of your friends.”²¹⁶

As with Coulton and Magnatune, Siberry frames the relationship as one of implicit obligation. The site characterizes the free download option as a “gift from the artist,”²¹⁷ signaling that, as in any gift context, a formal quid pro quo is neither required nor expected, but a moral and social obligation is incurred. This framing may offer a mixed signal: on

213. *Why We Are Not Evil*, *supra* note 103.

214. Buckman, *Founder’s Rant*, *supra* note 100.

215. *The MP3 Store*, *supra* note 126.

216. *The JoCo Primer—Getting Music*, *supra* note 125.

217. *See supra* note 81.

the one hand, the artist leaves the decision on contribution entirely to the consumer, without threat of punishment, shaming, or even disapproval—an uninhibited expression of trust in those that visit the online store. On the other hand, as anyone who has received a gift knows, the trust comes with an expectation and a social performance of reciprocation. Signals on the site are further mixed because, contrary to the decidedly non-market framing of the site overall, Siberry calls her “standard” payment rate a “market price,” and describes her system as having a “flexible price interface.”²¹⁸ This designation likely misaligns the framing of contributions on her site, at least to some extent. Future work would be required to examine whether a more tightly aligned set of messages would result in lowering the percentage of non-participants. It is hard to tease out, however, whether the relatively high level of non-participation we observed on Siberry’s site is a result of her site design’s capacity to actually capture and observe those non-participants (unlike Coulton and Magnatune), or whether the levels of non-participation are affected by the mixed messaging.

Empathy and Solidarity

The sites vary in the degree to which they enable empathy and solidarity. In all three sites, the founders use personal messaging, photographs, and stories to humanize themselves and the artists. For example, Magnatune uses a video to introduce artists.²¹⁹ It gives the artists an opportunity to present themselves, explain why they joined, and speak about what Magnatune represents to them.

Coulton also induces solidarity through his framing of the site. However, while all three sites do a decent job of building solidarity and empathy between the founder and fans, or between artists and fans (Magnatune), only Coulton enables building of solidarity among the fans themselves. Magnatune in particular seems to seek ingroup solidarity in the face of an outgroup threat, with Buckman’s plea for help in the face of unnamed outsiders who are resisting Magnatune’s efforts.²²⁰ Solidarity, measured in the experimental literature as ingroup bias, may well have its roots in inter-group conflict,²²¹ of which the oppositional trigger is a telltale sign.

218. *Id.*

219. Nicolás Amado, *Magnatune in Six*, MAGNATUNE (Dec. 18, 2006), <http://www.magnatune.com/six>.

220. Buckman, *Founder’s Rant*, *supra* note 100 (“If you think Magnatune is a worthy goal, please support it. There are powerful forces who want it to fail, so I need your help if this is going to work.”).

221. Bowles & Gintis, *supra* note 191, at 125–28.

Given the literature on solidarity, it is possible that both Magnatune and Sheeba could enhance levels of contribution results if they enabled fans to build “teams” or “groups” that would participate and contribute as teams, as part of the larger enterprise of supporting the artists. There is, however, some uncertainty about the extent to which this effect is gender biased and male specific.²²² Either site could design for solidarity-creation by enabling Coulton-style forums. However, merely allowing fans to post pictures of themselves, submit comments, or express their own identities and connection to the site might be enough to cultivate this “team spirit.”

Normativity: Fairness, Moral Commitment and Norm Compliance or Conformism

All three sites appeal heavily to a sense of fairness and community norms. However, what distinguishes the communities is whether the sites attempt to set norms of fairness independently or whether they invite users to consider their own sense of fairness when deciding how much to contribute.

For example, Siberry’s explicit (and idiosyncratic) pitch, displayed on the site’s “Frequently Asked Questions” page, appeals to core fairness principles even as it makes clear that the freedom to decide compensation questions rests with the consumer. She writes:

WHAT ARE SELF-DETERMINED TRANSACTIONS?

A flexible interface that accommodates all transaction needs.

It ensures that money (or lack of it) never comes between the artist and someone who might be lifted by their offering.

NOT donations

NOT pay-what-you-can

NOT guilt-trips

NOT tests of your integrity

NOT giving music away for free

IS a flexible price interface

222. See Jung-Kyoo Choi & Samuel Bowles, *The Coevolution of Parochial Altruism and War*, 318 *SCIENCE* 636 (2007); Rand et al., *supra* note 165, at 6190.

IS respectful of our wider senses of balance

IS non-policing

IS a way of treating others as we would like to be treated

IS trusting that the world is good and so are people

IS acknowledgement that our creative gifts are just that. Gifts to us. Wanting to share them is the ultimate thank you back to the source.

OK, BUT HOW DO I DO IT?

You decide what feels right to your gut. \$100? \$20? \$1? Let your gut guide you. If you download as a gift from artist, perhaps you'll buy an extra CD at another band's concert. Or if you don't go with your gut feeling, you might sleep poorly, wake up grumpy, put your shoes on backwards and fall over. Whatever. You'll know what to do.²²³

This appeal implicates several insights from the cooperation literature. It explicitly eschews enforcement, emphasizing "non-policing," and the artist's desire to avoid imposition of "guilt trips." It explicitly evokes fairness on the golden rule model, trust, and reciprocal gift giving. Moreover, it attempts to trigger customer behavior that coheres with *one's own* understanding of what constitutes fair conduct, rather than imposing an external behavioral norm.

The site prominently displays the average price per song, which may destabilize the non-market character of the interaction, but also effectively translates the actual consumer behavior into a guidepost for fairness. The notion here appears to be that publication of summary statistics sets an expectation of community behavior that then influences all other transactions on the site. As the coordinating price point displayed on the site is reflective of *actual* community behavior (as opposed to a unilateral command from the artist), the average price may perform a normative function, in the sense of a clear signal for imitation and conformist norm compliance.

As discussed in the Magnatune results section, clustering of the majority of payments around a value labeled "typical" is evidence of how behavior can be influenced by reporting and tagging of community

223. *Frequently Asked Questions*, SHEEBA, *supra* note 81.

payment trends. On Magnatune, the “typical” price reported also reflects the average price seen in the data.

In addition to the tagging of the payment options in normative terms (i.e., typical, generous, very generous) Buckman also tries to establish a norm of “fair sharing,” permitting and encouraging users to share only three copies of the music they download.²²⁴ The “give three copies” norm stands in contrast to industry norms, where file sharing is generally treated as illegal and even immoral. The norm also differs from those of file-sharing communities, where unabashed and unlimited sharing is often seen not only as acceptable but also as beneficial to the artist. In these ways, the norm is more permissive than the baseline in much of the music sharing world. But the “give three copies” policy is also more restrictive than one more baseline: the actual legal license that governs the relationship.

Because all Magnatune files come with a Creative Commons license, users are legally permitted to share them without limits, as long as they do not do so commercially. Yet Buckman does not mention the legal standard. Instead, he “overlays” his own norm of what constitutes “fair sharing” of Magnatune files. It is unknown whether Magnatune users recognize whether this “give three copies” norm is in fact a norm rather than the legal standard, and, indeed, a norm that is more restrictive than their actual rights. Nevertheless, Buckman admits to receiving regular letters from users who, in an attempt to scrupulously “play by the rules,” seek guidance regarding the official sharing policy.²²⁵

Trust, Authenticity, Transparency, and Reputation

Although both Magnatune and Siberry’s site display some aggregated sales data, none of the sites approach full transparency with respect to revenues. In addition, none of the sites provide high-paying contributors or active fans with a clear platform for developing a reputation or identity on the site. In this regard, the sites do not seek to harness social signaling, “Big Man” giving dynamics, or the generation of a reputation for generosity. All three sites do make a point of communicating trust in their respective fan bases and therefore invite trust in themselves and their sites.

At a macro level, by making all of her music available for free, Siberry makes herself vulnerable and expresses a tacit trust in the good will of consumers. The site’s basic approach signals to consumers that the artist carries a certain level of confidence in their willingness to contribute to her well-being.

224. See *Give 3 Free Copies*, *supra* note 102.

225. Email from John Buckman, *supra* note 112.

Magnatune's framing of its "give three copies" policy also seeks to foster trust. In detailing the reasoning behind the policy, Buckman explains that he created the policy in part to reciprocate and reward customers who emailed to ask about making copies.²²⁶ Responding to "[a]ren't you worried I'll abuse this," Buckman writes:

No, because you've always had the capability to copy anything you bought from Magnatune: we don't believe in copy protection and we think you're honest, otherwise you wouldn't be bothering to read this!

Dishonest people can always abuse the system. Rather, we want to reward all the honest people who truly want to do the right thing.

If you abuse our generosity, we're not going to break down your door and throw you in jail. We just want you to feel a little guilty about it <grin>.

We're trusting you to do the right thing, and introduce new people to the music you love. You'll feel good about it, your friends will thank you, and you'll help Magnatune prosper.²²⁷

It is within this exchange between Buckman and his customers that the use of trust as a design tool is clearly exemplified. What is no less important is the attention to the interplay between norms and humanization. The addition of "<grin>" in this paragraph acts to moderate the moral claim made on the other, to humanize it, and to make it a low-threat demand. The site invokes "guilt" and internalized norms, but diffuses the potential crowding out or negative effect of feeling forced with a "<grin>."

Autonomy/Efficacy

Coulton's delegation of duties such as arranging his performances, and his responsiveness to successful organizational efforts,²²⁸ enable his fans to feel that their relationship has an effect on Coulton. However, the other sites do not appear to utilize the autonomy or efficacy levers. Magnatune and Siberry could communicate the impact of voluntary contributions more clearly to induce deeper cooperation. Matching-type gifts (for example, "if \$X would be raised in Y time, I will donate \$Z") are one example of an efficacy-enhancing design intervention. As it

226. See *Give 3 Free Copies*, *supra* note 102.

227. *Id.*

228. See *JoCo UltraStar Karaoke*, *supra* note 131; *The JoCo Primer—More Awesomeness*, *supra* note 131.

stands, the average fan has no way of assessing whether the community contributions as a whole are sufficient to support Siberry or the Magnatune artists.

Calculation: Punishment/Reward, Crowding out, and Cost

None of the sites under study use punishment or reward systems to influence behavior. The cost of participation and potential for crowding out, however, differs from site to site.

Siberry and Coulton may be triggering some level of motivational “crowding out” through their pricing schemes. The \$0.99 price data point (labeled on Siberry’s site as the “market price”)²²⁹ and the \$1.00 price point²³⁰ frame the artist-customer relationship as an arms length market exchange, reminiscent of iTunes and other fixed-price online music stores. The \$0.99 and \$1.00 frames thus orient the customer to a standard recording industry convention, and could deter some customers from considering more substantial contributions. Coulton and Siberry would potentially drive higher contributions and avoid presenting their music as part of a broader commoditized industry if they eliminated prices that trigger clear market associations for music consumers.

The marginal transaction cost of contribution relative to downloading may also limit Coulton and Siberry’s revenues. At Magnatune, consumers must pay something in order to download high-quality album files. Thus, if they want music at all, they must already take out a credit card or log into PayPal, and are within the payment context when deciding whether to contribute more than the minimum. The incremental transaction costs associated with adding a couple dollars to the purchase price are negligible. Radiohead employed a similar approach, requiring purchasers to pay the minimal transaction cost of the download to obtain a “free” copy, making the marginal cost of contributing negligible.²³¹ On Coulton’s site, some songs require payment but provide no flexibility to pay more than the fixed price, whereas those songs that require no payment and give room for voluntary donation see the full cost of transacting borne by generous giving.²³² In Siberry’s case, any payment entails its full transactions cost, because all songs are also available at much lower transaction cost through the “gift from the artist” or “pay later” options.²³³

229. See *supra* note 81.

230. See *The MP3 Store*, *supra* note 126.

231. Flick, *Radiohead: In Rainbows to Be Given Away on October 10*, PUDDLEGUM (Oct. 1, 2007), <http://www.puddlegum.net/radiohead-in-rainbows-to-be-given-away-on-october-10/>.

232. See *The MP3 Store*, *supra* note 126.

233. *Jane Siberry Opens a Window*, *supra* note 71.

Social Dynamics

Finally, two of the study sites are not designed in a way that enables social dynamics among contributors to evolve in any significant way. Coulton's forums and media contribution tools do allow "leading" fans to emerge and interact with the community, as demonstrated in the thread about online payment. However, Magnatune and Sheeba's site lack the basic profile and communication tools that would allow fans to have an online presence. In this sense, communication tools and other design features (like profiles, images, etc.) can be understood as a precursor for the emergence of leadership or social dynamics on a site. It is therefore worth noting that the cooperation sustained on Siberry and Magnatune is primarily sustained due not to inter-fan social influence, but to the influence and leadership of the site founders, and the use of the other design levers discussed.

CONCLUSION

Paying for music production and distribution, like paying for the production of other information goods, is a classic public goods problem. Copyright law, and the industrial model of the recording industry of the twentieth century, provides one solution to the problem.

However imperfect a property-like right in a market in information goods may be (it was Kenneth Arrow who first identified systematic imperfections),²³⁴ copyright accepts the tradeoff in order to induce the creation of culture because, in theory, the benefits outweigh the costs. As digital music distribution destabilized the recording model's core entity—the disc, be it phonograph or CD—it created new opportunities for appropriation and threats of misappropriation, all of which have led to the copyright wars and the diverse legislative and judicial efforts to preserve the twentieth century model of paying for music.²³⁵ Because music files were small and easily transmissible over the Internet at acceptable fidelity, by comparison to video files, and because the industry had so narrowly focused its revenue streams around selling units, rather than public performances and multiple channel appropriation, like video production and film, the music industry experienced the threat earlier than

234. See Kenneth Arrow, *Economic Welfare and the Allocation of Resources for Innovation*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609 (Richard Nelson ed., 1962).

235. See, e.g., JESSICA LITMAN, *DIGITAL COPYRIGHT* (paperback ed. 2006); SIVA VAIDHYANATHAN, *COPYRIGHTS AND COPYWRONGS: THE RISE OF INTELLECTUAL PROPERTY AND HOW IT THREATENS CREATIVITY* (2003); FISHER, *supra* note 47; JAMES BOYLE, *THE PUBLIC DOMAIN: ENCLOSING THE COMMONS OF THE MIND* (2010).

other copyright industries, and the threat was more credibly claimed to be terminal.

It is not, therefore, too fanciful to say that the threats to, and needs of, the music industry were the primary driving force in the rapid expansion of digital copyright law: from legislation like the Digital Millennium Copyright Act and the No Electronic Theft Act in 1998, to the *Napster* and *Grokster* cases of the current decade. More creative thinkers have come up with novel methods for delivering money to artists, including strong pre-commitment mechanisms to assure sufficient donations like the street performer protocol²³⁶ and forcing mechanisms like a tax on Internet-related objects and services (whose proceeds would go to copyright holders from a central clearinghouse, based on measurements of the social value of the artist's work through market-like consumption measures).²³⁷ But throughout this period, artists, cryptographers, and others were devising ways to enable artists to make a living, rather than permitting industry to retain its business models.

Our study suggests that voluntary donation systems are, in fact, a potentially stable alternative for providing artists with an anchor of support, though in most cases likely not a complete solution to the problem of artist compensation. However, royalties from recorded music were never the primary means for most musicians to make a living before the digital revolution. Live performances and, to a lesser extent and for fewer artists, merchandising, played that role in popular music, while public funding and philanthropy filled some of the shortfall for classical music and jazz. The question from the artists' perspective, then, is not whether voluntary payment systems can become a sole source of revenue, but whether they are a plausibly stable element in a range of strategies for supporting the production and distribution of music, while making an acceptable living. Our answer, both theoretically and practically based on the results of this study, is yes.

Theoretically, copyright in particular, and property-based solutions to public good provisioning problems more generally, are built on an assumption of universal self-interest. Here, we provided a brief survey and synthesis of an expansive literature, theoretical, experimental, and observational, that challenges the realism of that assumption. Scholarly work across many disciplines suggests that human beings are diversely

236. See John Kelsey & Bruce Schneier, *Electronic Commerce and the Street Performer Protocol* (1998), available at <http://www.schneier.com/paper-street-performer.pdf>.

237. See FISHER, *supra* note 235, at 8–9; Neil Weinstock Netanel, *Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing*, 17 HARV. J.L. & TECH. 1 (2003); see also James Love & Tim Hubbard, *Paying for Public Goods*, in CODE: COLLABORATIVE OWNERSHIP AND THE DIGITAL ECONOMY 207 (Rishab Aiyer Ghosh ed., 2005) (developing a different version of an alternative compensation scheme).

motivated, and that very large portions of us reliably exhibit behaviors better explained by prosocial motivations than by uniform and universal self-interest. From this work, we have extracted a series of design levers, or design focal points, which seem to be associated with increased levels of prosociality. We have used prosociality to mean contributing to the provisioning of the public good, music, by paying artists, and in Coulton's case, taking on some of the costs of marketing and distribution, as well as performance production.

Empirically, we have presented a unique dataset, spanning between three and five years, across three distinct websites, and analyzing over 150,000 discrete transactions. Our core findings are that:

- (a) prosocial contribution levels are steady and reliable over that period;
- (b) depending on the design of the site, somewhere between 20% and 60% of fans can be relied on to contribute something;
- (c) contributions are driven, it appears, by two distinct groups—norm followers, or normative contributors, who seek to contribute what is widely perceived as the norm, or their fair share, and a much smaller set of hyper-generous altruists, who contribute sufficiently large amounts to account for a significant source of the revenues, though not as large a portion as the normative contributors;
- (d) the revenue flow generated by these contributions, even at the low end of participation rates, as with Siberry, is significant when compared to industry baselines of similarly non-high-profile artists, and anecdotal evidence from Radiohead and NIN suggests that the model may well scale to more popular artists as well;
- (e) the sites we examine in this Article specifically eschew forcing models: they trigger reciprocity by making the music available under a Creative Commons license that unilaterally disarms them from any legally forcing mechanism, and they do not use negative norm enforcement, through shaming or guilt-trip inducements; rather, they rely on explicit expressions of trust, both symbolic and actual, in terms of format and licensing in which the music is made available;
- (f) while the sites we reviewed are successful, there is no exposition on “best practices,” but instead a theoretically-informed effort to explore cooperative design; the voluntary

donation model is at a very early stage of its development, explorations are heuristic and practical, and there is likely substantial room for improvement as we begin to move our design focus from perfecting means of control, monitoring, and forced pricing, to perfecting systems that engage fans with artists and enable prosocial dynamics to form a replacement system to support artists and pay for the public good they produce.

Our study suggests several discrete potential improvements in the site design:

Framing	<p>Take site visitors out of a purely transactional/commercial mindset. Clearly explain that the site and artists therein are supported through voluntary payments.</p> <p>Invite visitors to join the community and appeal to norms of fairness, reciprocity and trust in the site community.</p>
Empathy & Solidarity	<p>Create a way for artists to humanize and introduce themselves through text, images, and video.</p> <p>Enable communities to form within the site—through groups or teams.</p> <p>Allow fans to post media about themselves and create identities.</p>
Normativity	<p>Don't just appeal to general norms—define what is and isn't fair within a particular site. State community rules. Specify what is the "typical," "above average," or "generous" payment point, or expose data so that contributors can evaluate their contributions in comparison to others.</p>
Trust, Authenticity, Transparency, & Reputation	<p>Invoke the concept of trust and enable site visitors to know that both site owners and artists are trusting visitors to consume fairly.</p> <p>Highlight the lack of required payment or other expressions of trust.</p> <p>Reveal data on payments and revenue shares with artists to encourage trust of site owners.</p>
Autonomy / Efficacy	<p>Enable artists to respond to requests and communications from fans.</p> <p>Post the results of voluntary payments and frame the impact they have on artists.</p> <p>Consider matching programs in which fan contributions are matched by other organizations or entities.</p>
Calculation: Punishment & Reward, Crowding Out, & Cost	<p>If pricing is used on the site, keep it unconventional. Don't trigger market behavior by using standard market prices: i.e., \$0.99.</p> <p>Minimize the cost of contributing. Require payment for processing and offer options for additional voluntary payment after visitors are already in the payment context.</p> <p>Allow multiple mechanisms for payment, so visitors can select the least costly option. Minimize time spent and complexity so that regular submission of voluntary payments is not burdensome.</p>

Social Dynamics & Communication	<p>Create a structure for community leaders and representatives to emerge and guide the community.</p> <p>Enable bidirectional communication for all actors on the site. Employ social tools including email, chat, Twitter, and others to enable a fan culture and community to evolve. Allow fans to view and comment on the behavior of others.</p> <p>Enable fans to shape this environment—the visual look and feel of the site, and the communication tools employed.</p>
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Future research should focus on experimenting with these design interventions in controlled conditions and carefully monitoring outcomes. Doing so will produce measurable evidence as to the effect of specific interventions, and more concrete guidance for cooperative-systems builders.

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Copyright policy in the last two decades has been driven by the interests of the copyright industries, and underwritten intellectually by a model that suggests that musicians will not create without being paid, and fans will not pay without being forced to by law and technology. Theoretical and empirical work on prosociality, however, argues that these assumptions are false, or at the very least, substantially incomplete. There is extensive evidence that people do contribute to the public good, and do act generously towards each other, in ways that suggest that musicians will create music beyond its marginal money value, and more importantly for our purposes here, that fans will pay well beyond what they can be forced to pay under present and foreseeable future technological conditions.

Taking these insights seriously requires a retreat from forcing and punishment as the dominant mode of financing creative production. It requires artists to engage their fans, and to understand themselves in a reciprocal relationship, rather than an entitled one. It gives us breathing space to experiment with new models of music production and distribution. But keeping the space for experimentation requires a technological and legal environment that is conducive to sharing music in social exchange networks, rather than in tight technical and transactional networks. Achieving that goal requires lawmakers and judges to resist the claim—typically advanced by panicked music industry lobbyists and lawyers—that the day on which the copyright system is loosened will become the day the music died.