

ESSAY

MEDIA-RICH INPUT APPLICATION LIABILITY

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Cite as: David R. Pekarek Krohn, *Media-Rich Input
Application Liability*,
17 MICH. TELECOMM. TECH. L. REV. 201 (2010),
available at <http://www.mttl.org/volseventeen/krohn.pdf>

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INTRODUCTION

Until recently, media-rich online interactions were mostly unidirectional: multimedia content was delivered by the service provider to the user. Input from the user came almost exclusively in the form of text.¹ Even when searching the Internet for images or audio, a user typically entered text into a search engine.² In addition, search engines indexed multimedia content by analyzing not the content itself but the text surrounding it.³ This is rapidly changing. With the rise of multimedia-capable smartphones and wireless broadband, applications that allow users to search using non-textual inputs are quickly becoming popular. These applications go much further than simply allowing content to be uploaded and shared, which is already common to Web 2.0 applications; they actually respond to the user based on the input media. For example, Google Goggles⁴ uses an image taken with the camera built into a user's phone as an input for a search, and Shazam⁵ and Midomi⁶ allow users to search for music by transmitting a short clip recorded with their phone. Some of these applications even engage users in helping index content by having them sing specific songs into their service.⁷ Finally, video games such as *The Beatles: Rock Band*⁸ use actual voices and instrument-like controls as inputs, and match them to the music of popular songs. These applications represent a new and growing category that I term media-rich input applications (MRIAs).

While issues of copyright infringement on the Internet have been addressed previously, MRIAs raise the possibility of a new form of liability

1. See, e.g., FLICKR, <http://www.flickr.com> (last visited Apr. 28, 2010) (text search for photographs); PANDORA, <http://www.pandora.com> (last visited Apr. 28, 2010) (text-based search for certain artist or song plays audio similar to that artist or song); YOUTUBE, <http://www.youtube.com> (last visited Apr. 28, 2010) (text search for videos).

2. See, e.g., WILLIAM F. PATRY, PATRY ON FAIR USE § 3.50 (2009) ("There is no current available method to search by image (or sound for that matter). As a result, a request for an image must be generated and processed as a textual inquiry."); James Grimmelmann, *The Structure of Search Engine Law*, 93 IOWA L. REV. 1, 9 (2007) (noting that most search queries are textual).

3. See PATRY, *supra* note 2, § 3.50 ("In order to return a relevant image search query, image search algorithms analyze text that accompanies the Web pages that link to the URL on which the image file actually resides."). Web pages are text documents that include special tags that refer to non-textual objects, such as images. Web crawlers analyze the text around the image tag, as opposed to the image itself. See *Text vs Images*, FEEDTHEBOT.COM, <http://www.feedthebot.com/textversusimages.html> (last visited Sept. 14, 2010).

4. *Google Goggles for Android*, GOOGLE, <http://www.google.com/mobile/goggles/> (last visited Apr. 28, 2010).

5. SHAZAM, <http://www.shazam.com> (last visited Apr. 28, 2010).

6. MIDOMI, <http://www.midomi.com> (last visited Apr. 28, 2010).

7. *Search for Music*, MIDOMI, <http://www.midomi.com/index.php?action=main.sing&from=topnav> (last visited Apr. 28, 2010).

8. *THE BEATLES™: ROCK BAND™*, <http://www.thebeatlesrockband.com> (last visited Apr. 28, 2010).

that has not yet been addressed. Professor James Grimmelmann attempted to analyze questions of copyright liability in the context of Internet search engines by mapping out the different information flows involved with searching the Internet and examining how the law balances the interests of different players against each other.⁹ He categorized the different players in search engine applications as users, search engine providers, and content owners.¹⁰ The growth of MRIs leads to the potential rise of a new liability not addressed by Professor Grimmelmann—liability for copyright infringement by users of search engines and related technologies.¹¹

At first glance much of the behavior associated with MRIs would appear to be lawful, especially that which has a close analog to legacy¹² search engine behavior.¹³ Just as running a textual search for “The Heebie-Jeebies at CBGB’s: A Secret History of Jewish Punk” in an attempt to locate information about the book would be completely lawful, we might expect that taking a picture of the book’s cover to accomplish the same thing with Google Goggles would also be lawful. However, book titles are not protected by copyright,¹⁴ while book covers are.¹⁵ The cover of the

9. Grimmelmann, *supra* note 2, at 9.

10. *Id.*

11. The fact that Professor Grimmelmann did not address this liability is not surprising. At the time of his analysis, using non-textual input was not mainstream but “exotic.” *Id.* at 8. MRIs have now clearly broken into the mainstream. As of February 2009, Shazam had thirty-five million users. *Shazam Celebrates 15 Million New Users in Just Six Months*, SHAZAM (Feb. 13, 2009), <http://www.shazam.com/music/web/newsdetail.html?nid=NEWS20090213095546>.

12. In this Essay, I use the term “legacy” in the sense of “something coming from the past,” WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY UNABRIDGED 1290 (Philip Babcock Gove ed., 1986) (1961), and more specifically “relating to, or being a previous or outdated computer system,” *Legacy*, MERRIAM-WEBSTER.COM, <http://www.merriam-webster.com/dictionary/legacy?show=1&t=1289177695> (last visited Nov. 7, 2010).

13. See *Field v. Google, Inc.*, 412 F. Supp. 2d 1106 (D. Nev. 2006) (finding no liability for Google’s indexing and caching of copyrighted content). However, as Professor Jessica Litman has pointed out, there is a lot of personal use, both on and off the Internet, that occupies a “murky middle ground” between clearly lawful and clearly infringing. Jessica Litman, *Lawful Personal Use*, 85 TEX. L. REV. 1871, 1901 (2007). Professor Litman defines “personal use” as an individual making a copy “for herself, her family, or her close friends.” *Id.* at 1893–94. Professor Litman’s purpose in investigating this murky middle ground is to examine how users of content contribute to the purpose of copyright and to highlight how some copying that the public considers “lawful” is not exempted by statute or judicial decision. *Id.* at 1878–79; see also John Tehranian, *Infringement Nation: Copyright Reform and the Law/Norm Gap*, 2007 UTAH L. REV. 537, 543–48 (2007) (tallying \$12.45 million in statutory damages for copyright infringement for a typical day in the life of a law professor).

14. Book titles, like titles of other works, are not protected by copyright. See 1 MELVILLE B. NIMMER & DAVID NIMMER, *NIMMER ON COPYRIGHT* § 2.16 (Matthew Bender rev. ed. 2010) (“It is . . . clear, as a matter of statutory construction by the courts (as well as Copyright Office Regulations), that titles may not claim statutory copyright.”).

15. See *Conde Nast Publ’ns, Inc. v. Vogue Sch. of Fashion Modelling, Inc.*, 105 F. Supp. 325, 332 (S.D.N.Y. 1952) (holding that magazine covers are entitled to copyright protection).

book used in this example has, in fact, two protected elements: one for the cover design and the other for the photograph of the Ramones included in the design. Therefore, a search using Google Goggles, which digitizes the image on the book cover and transmits it across the Internet, may violate a copyright owner's exclusive rights in a way that the textual search does not. While service providers are protected from liability for copyright infringement by a variety of affirmative defenses and statutory safe harbors, these defenses are largely inapplicable to user interaction with MRIsAs.

There are three unique attributes of MRIsAs that differentiate them from legacy web behavior and therefore require new analysis.¹⁶ First, unlike legacy search applications in which the service provider makes a copy and presents it to the user, MRIA behavior requires the user to make a copy and present it to the service provider. Thus, the image of the book cover in the previous example is digitized by the user and sent to Google; it is not copied by Google and sent to the user in response to a search.¹⁷ Second, the copied content is not necessarily from the Internet; in our example it is from a physical book. Third, some of these technologies create derivative works in a way that simple web searching and indexing does not. This Essay examines how these unique features of MRIsAs interact with current copyright doctrine and how the lack of protection for users may discourage innovation by developers of this new and exciting technology.¹⁸ This Essay also proposes a new user safe harbor that balances the interests of users in using MRIsAs with the interests of copyright owners in protecting their exclusive rights.

This Essay proceeds in the following manner. Part I provides a taxonomy of MRIsAs and provides examples of each type. In addition, this part discusses in more detail the ways in which MRIsAs are distinct from legacy web activity. Part II describes current copyright doctrine, especially as applied to situations most similar to MRIA behavior. It discusses how copyright doctrine might be over-inclusive when applied to MRIA behavior, while the defenses against infringement are under-inclusive. Part III discusses the ways in which users' potential liability

16. This differentiates this Essay from previous scholarship regarding application of copyright law to computer technology. *See, e.g.,* Grimmelmann, *supra* note 2; Mark A. Lemley, *Dealing with Overlapping Copyrights on the Internet*, 22 U. DAYTON L. REV. 547 (1997); Miquel Peguera, *When the Cached Link Is the Weakest Link: Search Engine Caches Under the Digital Millennium Copyright Act*, 56 J. COPYRIGHT SOC'Y U.S.A. 589 (2009).

17. There are legacy applications that allow user-supplied content. Such content is, in fact, a hallmark of what has been termed Web 2.0. For a discussion of how such applications differ from MRIsAs, see *infra* notes 34–36 and accompanying text.

18. See Litman, *supra* note 13, at 1882 (arguing that the purpose of copyright law is as much for benefit of people who read, listen, and view content as it is for authors who create it).

can harm innovation and copyright law generally. This part also proposes a user safe harbor that balances the need to protect users with the interests of copyright owners. A short conclusion follows.

I. MEDIA-RICH INPUT APPLICATIONS

MRIAs vary widely in what they do and how users interact with them. In order to address the legal issues, it is helpful to try to divide these behaviors into categories. I term these categories searching, stocking, and matching. This Part discusses these categories in detail, with examples of each. It then explains which unique features of MRIAs differentiate them from legacy applications in ways that have important implications for how copyright doctrine treats them.

A. Searching

Media-rich input searching is analogous to textual searching on the Web, which causes the search engine to output results. Results of textual searches may be textual (for example, links to websites) or non-textual (such as audio or video clips). Media-rich input searching works in a very similar fashion, except that the input is non-textual. Like a textual search, the results of a media-rich input search may be textual or non-textual.

Google Goggles and Retrievr are two media-rich input search applications that use images as inputs for searches. Google Goggles is available for Android-based smartphones, through which it takes a captured image as input for a search.¹⁹ For example, a user can take a picture of a book cover and retrieve search results such as links to reviews of the book and online stores that sell the book.²⁰ Other uses promoted by Google include taking pictures of artwork, wine labels, and architectural landmarks.²¹ Retrievr, a web-based service, allows users to search by sketching a picture using their mouse.²² Retrievr uses that sketch as an input to search for images stored on Flickr.com.²³ These two services demonstrate two approaches to MRIAs. While Google Goggles takes as input a captured image, Retrievr takes as input an approximate image, created by the user.²⁴

19. *Google Goggles*, *supra* note 4.

20. *Id.*

21. *Id.*

22. *Retrievr - Search by Sketch / Search by Image*, RETRIEVR, <http://labs.systemone.at/retrievr/> (last visited Apr. 28, 2010).

23. *About Retrievr*, RETRIEVR, <http://labs.systemone.at/retrievr/about> (last visited Apr. 28, 2010).

24. *Retrievr - Search by Sketch*, *supra* note 22.

Shazam and Midomi are both smartphone-enabled applications that allow users to search for information about music by capturing a clip of the music as input.²⁵ For example, if a user wants information about a song playing in a club, they hold their phone up and transmit a clip of the song to Shazam; Shazam then retrieves the name of the song, the name of the artist, and links to videos of the song or online stores offering digital copies of the song.²⁶ Midomi goes a step further, allowing a user to search by humming or singing the song into their phone or computer.²⁷ Again, this illustrates two approaches to input. The first, like Google Goggles, takes as input a captured version of the item to be searched for—in this case a digitized recording of the original sound recording. The second, like Retrievr, takes as input a user approximation of the item—here the user’s own performance of the song—to be searched for.

The development of these new services has been driven by the creation of new algorithms for creating “fingerprints” or “signatures” of non-textual media. To work, these fingerprints need to accomplish three things.²⁸ First, they have to contain features that are unique to the media object. This helps ensure the results returned are responsive to the user’s search. A fingerprint is only useful if it can return a limited number of “suspects” and can attempt to rank them in order of most likely match to least likely. Second, they need to be able to filter out noise in the input. This allows them to function even if audio input was recorded in an area with background noise or if a picture was taken in different lighting than the original. This aspect is also important for searches that involve input based on the user’s approximation. The more robust these algorithms are to differences between the source and the target, the better they will be able to properly respond to not just input with background music, but also out-of-tune singing or simple line sketches as input. Third, the fin-

25. *The Ultimate Music Search*, MIDOMI, <http://www.midomi.com/> (last visited Apr. 28, 2010); *Welcome to Shazam*, SHAZAM, <http://www.shazam.com/> (last visited Nov. 18, 2010).

26. *Welcome to Shazam*, *supra* note 25 (“Shazam lets you discover, buy and share the song that is playing.”).

27. *The Ultimate Music Search*, *supra* note 25.

28. Avery Li-Chun Wang, *An Industrial-Strength Audio Search Algorithm*, 1, <http://www.ee.columbia.edu/~dpwe/papers/Wang03-shazam.pdf> (last visited Nov. 3, 2010) (“The [Shazam] algorithm had to be able to recognize a short audio sample of music that had been broadcast, mixed with heavy ambient noise, subject to reverb and other processing, captured by a little cellphone microphone, subjected to voice codec compression, and network drop-outs, all before arriving at our servers. The algorithm also had to perform the recognition quickly over a large database of music with nearly 2M tracks, and furthermore have a low number of false positives while having a high recognition rate.”).

gerprints must contain the information in as compact a manner as possible to allow for efficient searching.²⁹

Media-rich input searching services have great potential for innovation. Just as textual input applications include not just simple web searches but also access to driving directions, price comparisons, and translation services, media-rich input search services are similarly capable of a wide variety of functions. In fact, any legacy application that takes text as input can be turned into a media-rich application by taking an image of the text as input. For instance, Google has demonstrated a new version of Google Goggles that not only searches based on the digitized image, but also translates the text of the digitized image.³⁰

B. Stocking

Stocking is, in essence, the opposite of searching. Stocking is necessary in situations where the service needs information about what input should match a known result. To this end, the service engages the user in its indexing process. For example, to enable Midomi to search by humming or singing, it needs fingerprints of the results in its database that can be properly compared to these inputs.³¹ The fingerprints collected from the original digital recordings do not serve this purpose, because the current algorithms cannot properly compare the fingerprint of a heavily-produced, studio-quality music track to that of a user singing or humming. To facilitate Midomi's search by humming or singing, it encourages users to upload audio of themselves singing or humming the songs. Users then place that audio in the proper place in the search index, telling the service what song they are singing or humming.³² The fingerprint of this audio can then be compared to later users' input humming or singing. The more users stock the index, the more likely the service will return the proper result when a user searches by humming or

29. As an example of how this can be accomplished, the Shazam service creates fingerprints of music by identifying "constellations" of "high energy" moments within the music. *Id.* at 1–2. When a user inputs a music clip to the service, the service takes its fingerprint and compares it to all of the fingerprints it has in its database. *Id.* Because background noise should not register as "high energy," it drops out of the fingerprint. Once the clip has been reduced to these constellations, comparing them to the database is much more efficient than if the fingerprint contained much more data. *Id.*

30. Hartmut Neven, *Integrating Translation into Google Goggles*, GOOGLE MOBILE BLOG (Feb. 17, 2010, 11:59 AM), <http://googlemobile.blogspot.com/2010/02/integrating-translation-into-google.html>.

31. *Search for Music*, *supra* note 7 (click "Read why > >") ("When someone does a sing search, Midomi uses Sound2Sound search science to match the voice to recordings on midomi.com. So when people search for a top song you've recorded, they might find your recording! Sound2Sound works best when your rendition includes only solo singing with no background music.").

32. *Id.*

singing. Midomi even lists “top songs” that they are looking for people to sing.³³

In the context of textual searches, there is no need for user stocking. HTML allows for easy separation of content from presentation, so an automated web crawler can easily ignore stylistic information, such as font and positioning when indexing a web page, remove punctuation and make ordering of words irrelevant. For MRIA search services that aim to respond to the widest variety of inputs, however, it is impossible to create indexes in an automated fashion. Stocking is, therefore, user-driven indexing.

Reliance on user-generated indexing predates MRIs.³⁴ For example, Amazon.com allows users to upload their own images of products they own to the product’s page on Amazon.com’s site.³⁵ Google’s Panoramio allows users to upload images of geographical locations, which are then viewable through Google Maps.³⁶ In both cases, users searching for that product or location have access to content previously uploaded by other users. In fact, any site that features user content, such as YouTube, Wikipedia, or the Internet Movie Database, features this type of activity.

Stocking is distinct from these legacy behaviors because the user-supplied content of MRIs does not modify or enlarge the set of content to be searched but instead enhances the ability of users to find content that already exists in the services’ repositories. This distinction may be especially helpful in distinguishing stocking MRIs from legacy Peer-to-Peer (P2P) applications. Uploading media to a P2P application such as Grokster allowed other users to download that content.³⁷ If no user had uploaded the media, it would not have been available for other users, no matter how hard they searched for it.³⁸ When a user uploads a clip of their own version of a popular song to Midomi, it does not add a copy of

33. *Id.*

34. In this way stocking is really a specific instance of “crowdsourcing,” which is “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call.” Jeff Howe, CROWDSOURCING, <http://crowdsourcing.typepad.com/> (see “Crowdsourcing: A Definition” to the left of the postings) (last visited Sept. 14, 2010).

35. See, e.g., *Customer Images for Kindle: Amazon’s Original Wireless Reading Device (1st Generation)*, AMAZON.COM, <http://www.amazon.com/gp/customer-media/product-gallery/B000FI73MA> (last visited Apr. 28, 2010).

36. PANORAMIO, <http://www.panoramio.com/> (last visited Apr. 28, 2010).

37. See *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 920–21 (2005).

38. See *id.*

the popular song—only a new recording of that song—to Midomi’s repository, making it easier for other users to find that song.³⁹

C. *Matching*

The last category of MRIA behavior, matching, is quite different from the first two, because it does not involve a search application at all. In addition, it occurs primarily as a video game rather than a smartphone or web application. Matching behavior takes a user’s input and compares it to a known result to determine how closely they “match.” The Beatles: Rock Band is one of the most well-known examples of a matching MRIA. In *The Beatles: Rock Band* and games such as the *Guitar Hero* series, input comes in two different forms, often combined in a single game. First, a user may match a pattern of “notes” on a game controller, which resembles a musical instrument, to those presented by the game.⁴⁰ If the user matches the pattern, the music continues to play; if the input does not match, the music for that instrument drops out. This creates the illusion that the user is playing the music, even if they are not. While the controls are more limited than actual instruments, the different instruments and settings provide approximations of actually playing. For example, using the drum controller on the “expert” level provides an experience that is almost a beat-for-beat recreation of the original song.⁴¹ In the second form of matching, the game compares the a player’s vocal pitch to the pitch of the original vocal part. The closer the user is to the notes of the original song, the higher the score.

D. *What’s Unique About Media-Rich Input?*

Courts and scholars have addressed some of the issues regarding the application of copyright law to the Internet. At one end of the liability spectrum, much search engine behavior appears to be free of liability for service providers.⁴² This includes freedom from liability for both the process of indexing Internet content from third-party websites for later searching and allowing users to view cached versions of that content,

39. Uploading to Midomi does make available the new performance of the song, but when a user searches by singing into Midomi, they are likely searching for the canonical version of the song.

40. *Sound Opinions: Rock Video Games, Reviews of the Flaming Lips & the Gossip*, CHI. PUB. RADIO, (Oct. 2, 2009), <http://www.soundopinions.org/shownotes/2009/100209/shownotes.html> (describing *The Beatles: Rock Band* gameplay).

41. ShadoeSH, *The Beatles: Rock Band—Helter Skelter—Expert Drums 5**, YOUTUBE (Sept. 6, 2009), <http://www.youtube.com/watch?v=9xzCpdiFE74> (showing the beat pattern for the song “Helter Skelter” and accompanying audio when played on “expert” mode in *The Beatles: Rock Band*).

42. See, e.g., *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701 (9th Cir. 2007); *Field v. Google, Inc.*, 412 F. Supp. 2d 1106 (D. Nev. 2006).

including thumbnail images.⁴³ While the numerous and interrelated reasons for this are discussed below, most derive from the voluntary and mostly open nature of the Internet. That is, people who publish content to publicly-available areas of the Internet do so because they want users to consume that content. By indexing and caching, search engines help enable this.⁴⁴ At the opposite end of the liability spectrum, users may be found liable for wholesale, non-transformative copying of media to the Internet, even if their use is non-commercial.⁴⁵ Further, service providers who induce users to make such copies may be held liable for indirect infringement, even if the service has substantial legitimate uses.⁴⁶ The use of MRIs does not fit either end of the liability spectrum: the copying is not of content that was previously published on the Internet, and the copying is not generally wholesale copying.⁴⁷ Therefore, the liability created from use of MRIs needs a more nuanced analysis that places MRIs on the spectrum of liability in light of their unique attributes.

First, unlike legacy applications that return multimedia results to the user, MRIs require the user to do the copying. This differentiates use of MRIs from the standard liability-free behavior of legacy search engines. Legacy indexing, caching, and searching behavior require the service provider to make the copy.⁴⁸ A service provider reaches out via a web crawler to retrieve, index, and cache content. When the user con-

43. See *Perfect 10*, 487 F.3d at 725 (remanding where the fair use defense was likely to prevail against infringement claim for search engine image indexing); *Field*, 412 F. Supp. 2d at 1123–24 (holding that caching files on a search engine constitutes fair use).

44. See discussion *infra* Part II.C.

45. See, e.g., *Religious Tech. Cent. v. Lerma*, No. 95-1107-A, 1996 WL 633131 (E.D. Va. Oct. 4, 1996) (holding an individual liable for copyright infringement for posting Church of Scientology documents to a newsgroup).

46. See *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (holding that an Internet service that promotes its use to infringe copyright is liable for the resulting acts of infringement by third parties using the service even though lawful uses of the service exist).

47. MRIA behaviors, especially stocking, are different from P2P behaviors, because they facilitate searching for content that already exists in a repository rather than simply adding content to that repository. See *supra* notes 37–39 and accompanying text. P2P applications are condemned not because they create a new form of infringement, but because they make mass infringement almost effortless using the Internet. See *Tehrani*, *supra* note 13, at 549 (viewing P2P networks as vastly expanding the scope of piracy that previously existed with copying albums to cassettes). Companies that facilitated mass copying of cassette tapes have been held liable for indirect infringement. See *A & M Records, Inc. v. Napster, Inc.*, 114 F. Supp. 2d 896, 916–17 (N.D. Cal. 2000) (citing *A & M Records, Inc. v. Gen. Audio Video Cassettes, Inc.*, 948 F. Supp. 1449 (C.D. Cal. 1996); *RCA Records v. All-Fast Sys., Inc.*, 594 F. Supp. 335 (S.D.N.Y. 1984)). Under a similar theory, P2P services such as Napster have been found liable for facilitating user infringement. See, e.g., *Napster*, 114 F. Supp. 2d at 916–17. Because MRIs do not allow sharing of content between users, they do not have a legacy analog.

48. Copyright owners have argued unsuccessfully that browser—as opposed to system provider—caching constituted infringement. *Perfect 10*, 487 F.3d at 726.

ducts a search, the service provider makes another copy and returns it to the user. Because the copying is done by the service provider and not the user, any service provider liability for legacy indexing and caching would be for direct infringement.⁴⁹ With an MRIA, it is the user that copies and transmits the content. This user-copying has two consequences for copyright liability: (1) it has the potential of shifting liability for direct infringement from the service provider to the user and (2) there is less control over the actions of users than over automated systems. Both of these may mean that standard defenses against liability for legacy search engine behavior do not apply to liability from use of MRIsAs.⁵⁰

Second, MRIsAs are more likely to get user-supplied content from the physical world. This is one of the great innovations of MRIsAs and distinguishes them from legacy search engines that rely on web crawlers, which only traverse the Internet. While there are other services that index from physical sources, notably the Google Books project, these are still systematic efforts not reliant upon user input. Again, this distinction is important in evaluating how the standard defenses to liability for search engine behavior apply to MRIsAs.

Finally, as is detailed below, some MRIsA behaviors have the potential to create derivative works.⁵¹ This is especially true for searching and stocking applications that take user approximations—rather than digitally captured content—as input. To the extent that these approximations could be considered adaptations of the original work, they implicate the derivative works right.⁵²

II. CURRENT DOCTRINE

United States copyright law defines a set of rights that the copyright owner has the exclusive right to exercise themselves or to authorize other to exercise.⁵³ As Professor Mark Lemley pointed out at a time when the Internet was less mature, copyright doctrine might apply “too well” to digital transmissions over the Internet, in that literal application could expand the scope of copyright.⁵⁴ This is because one transmission has the

49. See *Field v. Google, Inc.*, 412 F. Supp. 2d 1106, 1114 (D. Nev. 2006) (stating that the suit against Google was for direct infringement). This is different than in the P2P context, where service provider liability is dependent on a finding that the user directly infringed. See *Grokster*, 545 U.S. 913.

50. See *infra* Part II.C.

51. See *infra* Part II.A.3.

52. See 17 U.S.C. § 106(2) (2006).

53. 17 U.S.C. § 106.

54. Mark A. Lemley, *Dealing with Overlapping Copyrights on the Internet*, 22 U. DAYTON L. REV. 547, 549 (1997).

potential to infringe more than one of the exclusive rights covered by copyright.⁵⁵ Copyright doctrine has evolved to better address digital transmissions in general, and some of Professor Lemley's concerns may have been addressed by the Digital Millennium Copyright Act (DMCA).⁵⁶ Even with this evolution, however, the ways in which MRIsAs' unique characteristics may violate exclusive rights illustrate a new and potentially important strain on copyright law: a gap between what the public believes the copyright law says and what it actually says.⁵⁷ While the well-publicized lawsuits brought by the Recording Industry Association of America may have educated consumers about how copyright laws can apply to them, the enthusiastic adoption of MRIsAs illustrates that users may not believe that use of these applications is infringing.⁵⁸

This Part examines the various rights protected by current copyright doctrine and how they apply to MRIsAs.⁵⁹ It also describes the various forms of indirect liability and how user actions may or may not create liability for service providers. This Part concludes with a discussion of the affirmative defenses to copyright infringement, focusing on those used most often to protect legacy web activity, such as indexing and caching. This discussion also notes that these defenses are inapplicable to MRIsAs because of MRIsAs' unique characteristics.

A. Rights

1. Reproduction

The reproduction right covers the most rudimentary copyright: making copies of a work.⁶⁰ Copies are defined as works "fixed by any method now known or later developed, and from which the work can be

55. *Id.*

56. See 17 U.S.C. § 512 (2006) (creating a safe harbor for simple transmission of a document). Professor Lemley acknowledged that this might be the result of a literal application of copyright law. Lemley, *supra* note 54, at 578.

57. Jessica Litman, *Copyright Noncompliance (or Why We Can't "Just Say Yes" to Licensing)*, 29 N.Y.U. J. INT'L L. & POL. 237, 238 (1997) ("[P]eople don't believe that the copyright law says what it does say.").

58. See Brian X. Chen, *10 Most Awesome iPhone Apps of 2008*, WIRED.COM (Jan. 2, 2009), http://www.wired.com/software/coolapps/news/2009/01/YE8_iphoneapps (ranking Shazam the sixth "most awesome" iPhone app).

59. While I use specific MRIsAs as examples, the liabilities discussed should not be considered definitive for two reasons. First, as will be discussed below, some of the affirmative defenses are quite amorphous and difficult to evaluate *ex ante*. Second, I am not privy to any internal documentation of these companies that might, for example, involve explicit licenses for some of the activity that I discuss. I have, however, examined the user-facing materials of these applications, and have not found any explicit licenses for the user behavior that I discuss.

60. 17 U.S.C. § 106(1) (2006).

perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”⁶¹ This fixation requirement was construed expansively by the courts to include copies stored in a computer’s temporary memory.⁶² Concerned that this expansive view might create liability for service providers, Congress responded by removing the liability for service providers if those copies are made automatically as content makes its way through a network.⁶³

Every browsing or indexing of a web page implicates the duplication right because it fixes a copy of the content on the computer belonging to the browsing user or indexing service provider.⁶⁴ In order for a web browser or web crawler to read a web page, a copy of that web page needs to be stored on the requesting machine. The Internet, therefore, could not exist legally under a broad interpretation of the reproduction right. Courts have sometimes addressed this issue under the doctrine of fair use.⁶⁵ In addition, scholars have addressed this issue through the implied license doctrine.⁶⁶ This doctrine assumes that the only purpose of putting content on the Internet in an unsecured location is to facilitate viewing by others. Because viewing requires copying, the copyright owner is thought to have granted an implied license to make a copy of the web page in order to view it.

61. 17 U.S.C. § 101 (2006).

62. See MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 211, 518 (9th Cir. 1993); see also U.S. COPYRIGHT OFFICE, A REPORT OF THE REGISTER OF COPYRIGHTS PURSUANT TO SECTION 104 OF THE DIGITAL MILLENNIUM COPYRIGHT ACT, at xxii (2001), available at www.copyright.gov/reports/studies/dmca/sec-104-report-vol-1.pdf (“[T]he making of temporary copies of a work in RAM implicates the reproduction right so long as the reproduction persists long enough to be perceived, copied, or communicated.”).

63. 17 U.S.C. § 512(a)(2) (2006).

64. Other safe harbor exemptions of § 512 may cover the search engine’s indexing and caching behavior. See *Field v. Google, Inc.*, 412 F. Supp. 2d 1106, 1123–24 (D. Nev. 2006) (discussing DMCA caching safe harbor). *But see* Peguera, *supra* note 16, at 620–23 (arguing that *Field* misinterpreted caching safe harbor).

65. See *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701, 726 (9th Cir. 2007) (holding that browser caching by user is fair use). *Field* does address a similar situation of the caching of the material once retrieved; it does not address the original indexing, because *Field* had not alleged that such indexing violated his copyright. *Field*, 412 F. Supp. 2d at 1115 (“*Field* does *not* allege that Google committed infringement when its ‘Googlebot,’ like an ordinary Internet user, made the initial copies of the Web pages containing his copyrighted works and stores those copies in the Google cache.”).

66. See Erik Ketzan, *Rebuilding Babel: Copyright and the Future of Online Machine Translation*, 9 TUL. J. TECH. & INTELL. PROP. 205, 229 (2007) (citing Peter B. Hirtle, *Digital Preservation and Copyright*, STANFORD COPYRIGHT & FAIR USE CENTER, http://fairuse.stanford.edu/commentary_and_analysis/2003_11_hirtle.html (last visited May 5, 2006)); John S. Sieman, *Using the Implied License to Inject Common Sense into Digital Copyright*, 85 N.C. L. REV. 885, 891 (2007). *But see* Lemley, *supra* note 54, at 567 (arguing that implied license is a “weak reed”). The fair use doctrine has also, to a lesser extent, been seen as protecting the standard use of the Internet. See *id.* at 567 (criticizing fair use as a defense to ordinary net activity).

A copy, as defined by the duplication right, is made whenever a user digitizes and transmits a picture or audio recording of a copyrighted work using an MRIA. This includes every time a user uses Google Goggles to capture and transmit a book cover or copyrighted piece of art, or uses Shazam to copy a few seconds of a sound recording. Unlike other Internet activity, however, the implied license doctrine cannot protect this conduct. Because viewing physical media does not require a copy to be made, allowing someone to view a work in the real world does not imply a license to copy it.⁶⁷ In other words, while a web page cannot be viewed without a copy of its contents being made, a book cover can be.⁶⁸

2. Performance

The owner of a copyright in “literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works” has the exclusive right to perform these works in public.⁶⁹ Like the fixation requirement of the duplication right, what constitutes a performance has been construed very broadly. It includes both the playing of a pre-recorded copyrighted work—for example, a D.J. playing a CD in a club or at a wedding⁷⁰—as well as the performance of a “cover” version of a song by a live band.⁷¹ What constitutes a public rather than private performance is defined by statute to include a performance for a substantial number of persons outside of a normal circle

67. See *infra* Part II.C.1 for further discussion regarding the implied license doctrine and its inapplicability to MRIAs.

68. See *Teter v. Glass Onion, Inc.*, No. 08-6097-CV-SJ-FJG, 2010 WL 2772198, at *4-*6 (W.D. Mo. July 12, 2010) (requiring affirmative conduct on the part of the copyright owner to find that an implied license was created to allow digitization and web publication of protected works). In addition, a user stocking Midomi’s index by singing a song also implicates the right of the song’s composer. While owners of musical compositions are required to allow cover versions of their works under a compulsory mechanical license, it is possible that a recording made for stocking purposes would not qualify. 17 U.S.C. § 115 (2006). Of course, even if the recordings did fall under the compulsory license, it is unlikely that either users or Midomi are obtaining the license from the Harry Fox Agency or otherwise. See *Mechanical Licenses*, HARRY FOX AGENCY, <http://www.harryfox.com/public/MechanicalLicenseslic.jsp> (last visited Apr. 28, 2010).

69. 17 U.S.C. § 106(4) (2006).

70. See *Lodge Hall Music, Inc. v. Waco Wrangler Club, Inc.*, 831 F.2d 77 (5th Cir. 1987).

71. See *EMI April Music, Inc. v. White*, 618 F. Supp. 2d 497 (E.D. Va. 2009). While the “first sale” doctrine protects a user from liability for some activity, such as reselling or renting out a legally purchased DVD, it does not apply to the performance right. See 2 NIMMER & NIMMER, *supra* note 14, § 8.14 (discussing how motion picture companies have attempted to get around the first sale doctrine by arguing that the rental leads to an infringing public performance). The legal ownership of a copy of a copyrighted work does not grant someone the authority to play the copyrighted work publicly; for example, playing a legally purchased DVD in a public theatre is still an infringement of the owner’s performance right.

of family and friends.⁷² A public performance also includes transmitting a performance, including a private performance, “by means of any device or process” to a substantial number of people.⁷³

After a user stocks Midomi by singing or humming a requested song, Midomi provides the ability for the public to stream that performance at a later time. This likely would be considered a transmission to the public and thus a public performance.⁷⁴ It is important, however, to consider each step in getting that performance to the public in order to determine who is liable for any infringement of the performance right. The first step, in which the user records himself, is a performance of the musical work; it is not, however, a *public* performance, because it is probably conducted privately. The second step, in which the user uploads the recording to Midomi, also does not constitute a public performance. The ASCAP rate court has made clear that there is a distinction between transferring a file and performing the work.⁷⁵ However, the third step, in which Midomi streams the performance to the public upon request, does constitute a public performance. Therefore, while there might be direct liability for infringing the performance right for stocking applications such as Midomi, it would rest with the service provider and not the user.

Some uses of matching applications present a larger concern over liability for infringement of the performance right. The performance right in musical compositions is broad enough that playing The Beatles: Rock Band in a public tournament would likely be a public performance of the underlying musical composition.⁷⁶ If such a tournament were not a performance of the musical composition, there would likely be nothing to stop a bar from allowing patrons to play Rock Band—or even hiring “Rock Band Experts”—instead of playing CDs or the radio, thereby avoiding the standard ASCAP license.

72. 17 U.S.C. § 101 (2006) (Performing publicly means “to perform or display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered . . .”).

73. *Id.*

74. *See* United States v. ASCAP, 485 F. Supp. 2d 438, 442 (S.D.N.Y. 2007) (streaming of a musical work constitutes a public performance), *aff’d in relevant part*, 96 U.S.P.Q.2d 1360 (2d Cir. 2010).

75. *Id.* (holding that although “streaming of a musical work does constitute a public performance . . . the downloading of a digital music file, in and of itself, does not”). Merely transferring the file does not implicate the performance right because it could not be considered a performance, as it was not “transmitted in a manner designed for contemporaneous perception.” *Id.* at 442–43.

76. *See* 17 U.S.C. § 101 (“To ‘perform’ a work means to recite, render, play, dance, or act it, either directly or by means of any device or process . . .”); 2 NIMMER & NIMMER, *supra* note 14, § 8.14 n.21 (“[A] musical work contained on the sound track, or otherwise in a motion picture or other audiovisual work, is performed by the exhibition of such audiovisual work.”). The performance would be public because it would likely be in front of a substantial number of people who are not family or friends. *See* 17 U.S.C. § 101.

In addition to the performance right in the musical composition, there may also be a performance right in the underlying video game.⁷⁷ The performance right of the owner of the sound recording is limited to digital audio transmissions, and so owners of sound recordings are not entitled to a royalty for playing the radio or CD in a bar.⁷⁸ The performance right for audiovisual works—including video games—is not similarly limited.⁷⁹ Like the soundtrack of a motion picture, the sound recordings of the original songs are an integral part of matching video games.⁸⁰ Thus, while the owner of the sound recording would not have an infringement claim based on a public performance of a matching video game, the video game publisher—whose rights are contingent on a master use license from the owner of the sound recordings—might.⁸¹

3. Derivative Works

In addition to making copies of copyrighted works, the copyright owner also has the exclusive right to make derivatives, or “adaptations,” of the original work. A derivative work is a work that is substantially similar to the work upon which it is based and includes some amount of originality.⁸² There is some obvious overlap between the derivative works right and the performance right. For example, the actions of a D.J. recording remixes she makes live in a club could be considered both a

77. *Red Baron-Franklin Park, Inc. v. Taito Corp.*, 883 F.2d 275, 278–79 (4th Cir. 1989) (holding that video games are audiovisual works and that playing these games constitutes performances of the works). *But cf.* *Allen v. Academic Games League of Am.*, 89 F.3d 614 (9th Cir. 1996) (holding playing of board games—copyrighted as literary works—in a tournament did not constitute a performance of those works). Matching behavior is more akin to the video games addressed in *Red Baron* because it involves repetitive sequences of images and audio, a feature of the game at issue in *Red Baron* that was relied upon by the court. *Red Baron*, 883 F.2d at 279 (citing *Williams Elecs., Inc. v. Artic Int’l, Inc.*, 685 F.2d 870, 874 (3d Cir. 1982)).

78. See 17 U.S.C. § 106(6) (2006).

79. See, e.g., 17 U.S.C. § 106(4); *Red Baron*, 883 F.2d at 278 (“[V]ideo games are copyrightable as audiovisual works . . .”).

80. See 17 U.S.C. § 101 (stating that audiovisual works include “accompanying sounds,” and that sound recordings do not include “the sounds accompanying a motion picture or other audiovisual work . . .”); see also 1 NIMMER & NIMMER, *supra* note 14, § 2.09 (stating that a soundtrack constitutes integral part of a motion picture).

81. Some matching applications use “sound-alike” versions of the songs. These do not require a license from the owner of the sound recording, but they do require a synchronization license from the owner of the musical composition. See *The Romantics v. Activision Publ’g, Inc.*, 532 F. Supp. 2d 884, 887 (E.D. Mich. 2008) (discussing a situation in which the maker of *Guitar Hero* acquired a synchronization license from the owners of the musical composition “What I Like About You,” but re-recorded the song instead of using the version originally recorded by the Romantics).

82. E.g., 2 NIMMER & NIMMER, *supra* note 14, § 8.09.

public performance of the original songs and the creation of a derivative work from those works.⁸³

Because of this requirement of original creativity, compression of copyrighted audio or visual works to facilitate replaying the original work is not considered to be a creation of a derivative work but rather of a copy, thereby implicating only the reproduction right.⁸⁴ However, when someone creatively alters a copyrighted work, a derivative work is created.

Concerns over infringement of the derivative works right are especially relevant for searching and stocking applications that take user approximations as input, such as by humming or singing with Midomi or sketching with Retrievr. Whether MRIA behaviors implicate the derivative works right may be a very fact-specific determination. Sketching a rough approximation of the Guggenheim Museum Bilbao into Retrievr could be considered making a derivative work of Frank Gehry's architectural work.⁸⁵ The more specific the directions from MRIs to users regarding the best ways to provide input, the more likely users may be to create derivative works. For example, Midomi asks that users upload songs sung without background music to better enable the sound matching technologies.⁸⁶ As another example, imagine an MRIA that stocked an image search index by having users trace over images, instructing them on how to mark common elements like people's faces. The user would have created an adaptation of the original image for use in the service's index.

Going a step further, a derivative work may be created even when an automated algorithm compresses digital content for a purpose other than playing it back later, such as the fingerprinting done by Shazam and Midomi. While there is no human author of each compression, there is

83. It is unclear whether the recording is necessary for the implication of the derivative works right. The Ninth Circuit requires fixation for protection of the derivative work but not for finding that it infringed the original rights holder's rights. *Micro Star v. Formgen, Inc.*, 154 F.3d 1107, 1111 (9th Cir. 1998) (citing *Lewis Galoob Toys, Inc. v. Nintendo of Am., Inc.* 964 F.2d 965, 967-68 (9th Cir. 1992)). *But see* 2 NIMMER & NIMMER, *supra* note 14, § 8.09 (noting that the language in *Galoob* was dicta and arguing that fixation should be required to infringe the derivative works right). In fact, according to *Nimmer on Copyright*, there can be no infringement of the derivative works right without infringement of either the performance right or the duplication right. *Id.*

84. KENT D. STUCKEY, *INTERNET AND ONLINE LAW*, § 6.08 (2009). *But see* Michael J. Madison, *What's My Copy Right?*, 48 J. COPYRIGHT SOC'Y U.S.A. 787, 791 (2001) (suggesting that making MP3s from a CD may be the creation of derivative works).

85. *See* Tehranian, *supra* note 13, at 545 (stating that such a sketch could be considered an infringement).

86. *Search for Music*, *supra* note 7.

creativity that goes into the algorithm itself.⁸⁷ This is similar to the argument that ad-blocking software creates a derivative work of the website, as both involve an automated modification of a copyrighted work.⁸⁸ As another example, in the early days of the Web, there was a “Zippy Filter” that would automatically populate web pages specified by the user with randomly inserted catch phrases from the Zippy the Pinhead comic strip.⁸⁹ The resulting web pages would be considered infringing under some interpretations of the derivative works right.⁹⁰ Finally, others have argued that automated translations should be found to infringe the derivative works right, just as human translations do.⁹¹

Likewise, Shazam relies upon what may be considered derivative works. Shazam uses an algorithm for “fingerprinting” audio that is robust to external sounds and needs only a short bit of a recording.⁹² This is not a duplication, because Shazam’s fingerprint cannot be used to play the original clip. Instead, the result is a creative transformation of the original work that serves the purpose of comparing against a catalog of sound clips. Therefore, unlike an audio file compressed as an MP3, it may be a derivative work.⁹³

87. A derivative work, like all works to which copyright protection extends, must be an “original work of authorship.” 17 U.S.C. §§ 101–102 (2006). “The ownership of that copyright vests initially in the author . . . of the work.” 17 U.S.C. § 201(a) (2006). The author must contribute a “modicum of creativity” to the work for copyright protection. *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (1991). If the originality comes from an automated process and not a human, there is an argument that the resulting work has no copyright protection, because it has no author. Some courts have found, however, that a work does not need to qualify as a derivative work to infringe the derivative works right, and therefore these courts have not required originality or authorship to find infringement. *See Galoob*, 964 F.2d at 967–68.

88. *See* Anne Broache & Declan McCullagh, *Web Ad Blocking May Not Be (Entirely) Legal*, CNET NEWS (Sept. 14, 2007), http://news.cnet.com/Web-ad-blocking-may-not-be-entirely-legal---page-2/2100-1030_3-6207936-2.html?tag=mncol (citing *In re Aimster Copyright Litig.*, 334 F.3d 643, 647–48 (7th Cir. 2003) (holding that commercial-free copies of television shows are derivative works)).

89. *See* *Zippy Meets Meta-HTML*, META-HTML, <http://web.archive.org/web/19981205194228/www.metahtml.com/apps/zippy/welcome.mhtml> (last visited Apr. 28, 2010).

90. *See* *Micro Star v. Formgen Inc.*, 154 F.3d 1107, 1111 n.4 (9th Cir. 1998) (recording an automatically pink-tinged television program would create an infringing derivative work).

91. *See* *Ketzan*, *supra* note 66, at 226–27 (arguing that using an online translation service would open up the user to copyright infringement for creation of a derivative work).

92. *See* *Wang*, *supra* note 28, at 1–2.

93. Service providers would argue that this analysis weighs in favor of fair use, because it is a “transformative use.” *See infra* Part II.C.3. This argument might carry weight if it is difficult to show that the original work is “incorporated” into the fingerprint. *See* *Lewis Galoob Toys, Inc. v. Nintendo of Am., Inc.* 964 F.2d 965, 967 (9th Cir. 1992) (“A derivative work must incorporate a protected work in some concrete or permanent ‘form.’”). While courts more often tangle with the issue of permanence, the argument here would be that there is nothing left of the original work in the fingerprint after the algorithm has been run on the music clip. *Compare id.* at 967–68 (enhancing audiovisual display is not permanent or concrete),

4. Distribution

A copyright owner also has the exclusive right to distribute his works to the public.⁹⁴ Some MRIs, such as Midomi, allow content uploaded during stocking to be downloaded by other users. It is possible that this would infringe the distribution right.⁹⁵ Users would not face potential for liability for violation of the distribution right for their interaction with the MRI, because the service provider rather than the users makes the copies available. Any liability would, therefore, be identical to that which currently exists for sites that host user-generated content, such as YouTube.com.⁹⁶ Therefore, there is no need to address any unique aspects of the distribution right in relation to MRIs.

B. Indirect Liability

In addition to direct infringement liability for the party actually making the copy, third parties face potential liability for copyright infringement. Indirect infringement comes in three court-created forms: contributory infringement, inducement, and vicarious liability. For each of these, direct infringement is a prerequisite for indirect liability. In other words, where each individual behavior does not infringe, there is no liability for aggregate behavior. Therefore, there is no indirect liability where the individuals' behaviors are exempted from liability solely because of an affirmative defense, such as fair use.

1. Contributory Infringement

Contributory infringement requires a finding that the third party had knowledge of the infringing activity and took action contributing to that infringement.⁹⁷ The Supreme Court limited the scope of contributory

with *Micro Star*, 154 F.3d at 1111–12 (detailed description of an audiovisual display “counts as a permanent or concrete form”). In other words, it would not be considered an “abridgment, condensation, . . . recast[ing], transform[ation], or [adaptation].” 17 U.S.C. § 101 (2006). This highlights the tension that has been discussed by others between derivative works and transformative use. See Rebecca Tushnet, *Copy This Essay: How Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 YALE L.J. 535, 551 (2004).

94. 17 U.S.C. § 106(3) (2006).

95. See *Hotaling v. Church of Jesus Christ of Latter-Day Saints*, 118 F.3d 199, 203 (4th Cir. 1997) (“[A] library may lend an authorized copy of a book that it lawfully owns without violating the copyright laws. However, distributing unlawful copies of a copyrighted work does violate the copyright owner’s distribution right and, as a result, constitutes copyright infringement.” (citations omitted)).

96. Jacqueline C. Charlesworth, *Myspace, Youtube and User-Supplied Content: Key Copyright Issues*, in UNDERSTANDING COPYRIGHT LAW 2007, at 253 (Practising Law Institute, 2007).

97. See *Gershwin Publ’g Corp. v. Columbia Artists Mgmt., Inc.*, 443 F.2d 1159, 1162 (2d Cir. 1971) (“[O]ne who, with knowledge of the infringing activity, induces, causes or

infringement in *Sony Corp. of America v. Universal City Studios*, where it held that if a product is widely used for legitimate, non-infringing purposes, the makers of that product are not liable for contributory infringement.⁹⁸ Because an MRIA service provider is supplying the application, they would likely be found to have contributed to any user infringement. Therefore, whether the service provider would be liable for contributory infringement would depend on whether they had knowledge of the infringement and whether the service had significant non-infringing uses. For most MRIsAs, it would seem that the service provider would have knowledge of the infringement: Midomi requests users to record specific copyrighted songs; Google promotes the use of Google Goggles with books, which involves transmitting images of copyrighted images on book covers; and the makers of The Beatles: Rock Band supply an application that they know allows public performance of the copyrighted music it contains.

The more difficult question is whether the application has significant non-infringing uses. Matching video games would seem to fall into this category, where use in the home with friends and family is likely the most common use.⁹⁹ Because substantial use does not mean a majority of use,¹⁰⁰ the providers of other MRIsAs would also seem to be free from liability for contributory infringement. For example, an image search service, such as Google Goggles, can work with non-copyrighted artwork and audio search services with public domain songs. As will be seen next, however, this may not protect them from liability for inducing infringement.

2. Inducement

While *Sony* limited the scope of contributory infringement, *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.* created a new form of indi-

materially contributes to the infringing conduct of another, may be held liable as a ‘contributory’ infringer.” (footnote omitted).

98. *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 442 (1984) (applying patent law’s “staple article of commerce” doctrine to copyright law).

99. Finding that this was not significant would seem to render makers of CD players liable, since they have the potential of turning every music CD into a commercial public performance.

100. See *Sony*, 464 U.S. at 444 (finding that “the evidence concerning sports, religious, educational, and other programming was sufficient to establish a significant quantity of broadcasting whose copying is now authorized” even though it did not necessarily represent a majority of the use (internal quotation marks omitted)). The case law has not helped to define what amount of non-infringing use is necessary for it to be considered “significant.” See Assaf Jacob & Zoe Argento, *To Cache or Not to Cache—That is the Question; P2P “System Caching”—The Copyright Dilemma*, 31 WHITTIER L. REV. 421, 477–80 (2010).

rect liability known as inducement.¹⁰¹ In *Grokster*, the defendant P2P application providers were held liable for copyright infringement because they had “induced” copyright infringement by taking affirmative steps to foster infringement,¹⁰² including a concerted effort through advertisements and the general business plan to recruit former Napster users after that P2P service was shut down.¹⁰³ Unlike contributory infringement, the fact that the challenged services had non-infringing uses did not protect them from inducement liability.¹⁰⁴ The makers of stocking applications could fall into the category of inducing infringement if they encourage users to stock the index with versions of copyrighted material. For example, Midomi advertises on their site the specific copyrighted songs with which they are hoping to stock their index.¹⁰⁵ Even though these stocking applications have non-infringing uses as well—i.e., stocking the index with non-copyrighted material—targeted marketing might weigh in favor of a finding of inducement.

3. Vicarious Liability

Vicarious liability requires a finding that the third party had the right and ability to supervise the infringing behavior and received a direct financial incentive to allow the infringement to continue. The prototypical case for vicarious liability is the organizer of a flea market, who knows that infringing products are sold by flea market vendors and who receives money from those vendors.¹⁰⁶ While the financial benefit directly linked to infringing activities does not need to be a substantial portion of the defendant’s income for a finding of vicarious liability, it does need to be a “draw” for consumers such that if the infringement were curtailed a significant number of consumers might not buy the product or service.¹⁰⁷ This is a fact-specific inquiry. Because the business plans involved with

101. Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 545 U.S. 913, 936–37 (2005).

102. *Id.*

103. *Id.* at 937–38.

104. *See id.* at 952 (Breyer, J., concurring) (noting that services in *Grokster* had a similar amount of non-infringing use as the VCR had in *Sony*). The *Grokster* opinion has been criticized because it could be interpreted more expansively than the Court may have intended. *See* Rebecca Tushnet, Discussion of Legality of Apple’s “Rip. Mix. Burn.” Ad Campaign, REBECCA TUSHNET’S 43(B)LOG (June 30, 2005, 12:48 AM), <http://tushnet.blogspot.com/2005/06/ive-been-trying-to-follow-grokster.html> (arguing that Apple might be liable for infringement under the inducement doctrine for its ad campaign encouraging users to “Rip. Mix. Burn.”).

105. *Search for Music*, *supra* note 7 (listing “top songs needed”). As another example, the Google Goggles website uses a copyrighted book cover as an example of the type of use envisioned by the developers. *Google Goggles for Android*, *supra* note 4.

106. *See* Fonovisa, Inc. v. Cherry Auction, Inc., 76 F.3d 259 (9th Cir. 1996).

107. *Ellison v. Robertson*, 357 F.3d 1072, 1078 (9th Cir. 2004); *see also* 3 NIMMER & NIMMER, *supra* note 14, § 12.04.

various MRIs are sometimes difficult to discern, it is hard to know the degree to which MRIs receive a financial benefit for allowing the infringement. It does seem that a significant number of users might not use an audio searching application, such as Shazam, if it did not allow searching for copyrighted material. On the other hand, image searching applications, such as Google Goggles, might not lose a significant number of users if it only identified art works in the public domain. Further, because Google does not charge separately for Google Goggles, the copyright owner might need to show that a significant number of consumers might not buy an Android-equipped phone because it lacked the ability to run Google Goggles.

C. Affirmative Defenses

Even if a party has engaged in one of the behaviors discussed above, they may still not be liable for copyright infringement based on a variety of affirmative defenses. This section discusses those defenses, how they have applied to prior Internet activity, and how the unique behavior involved with MRIs may make them less applicable for users of these new applications.

1. Implied License

As discussed above,¹⁰⁸ the implied license doctrine is often cited as showing that standard web behavior, such as browsing, does not infringe owners' copyrights. *Field v. Google, Inc.* put this theory, among other defense theories, to the test in the context of caching.¹⁰⁹ The plaintiff in *Field* was a lawyer who wrote short stories and published them on a personal website for the specific purpose of suing Google after it indexed and cached them. Field argued that Google infringed his copyright by providing cached copies of his protected content.¹¹⁰ The court granted summary judgment for Google, holding that Field granted Google an implied license by posting content to the Internet and choosing not to use well-known industry standards to prevent a web crawler from indexing (or caching) that content.¹¹¹

There are, however, significant problems with the application of the implied license theory to search engine activity. First, the finding of an implied license has been criticized because it presumes a contract be-

108. See *supra* Part II.A.1.

109. *Field v. Google, Inc.*, 412 F. Supp. 2d 1106 (D. Nev. 2006).

110. *Id.* at 1114.

111. *Id.* at 1116.

tween Field and Google, which clearly did not exist.¹¹² The implied license doctrine was originally developed to fill contractual gaps to ensure that parties got what they bargained for. Therefore, implied licenses traditionally apply to existing contracts. Simply placing material on the Internet does not create any such contract between the poster and potential readers.¹¹³ Even if it was appropriate to find an implied license in *Field*, where the author had published the material on the Internet without any restrictions on access, this may be of limited use in other cases. As Professor Lemley has pointed out, because owners can condition a license through terms on a website, implied licenses work well when they are least needed: “those cases in which the copyright owner really does not object to the copying, and so has no inclination to sue.”¹¹⁴

To the extent that the implied license doctrine applies to legacy web activity, it fails completely when applied to MRIA behavior. First, existing copyright doctrine is very clear that while the published nature of a work can be considered as part of a fair use analysis, mere publication does not imply a license to copy.¹¹⁵ Often, the specific purpose of publication is to benefit financially from the creative work. A book publisher does not place a book in a bookstore to allow people to copy it, but rather to allow people to purchase it. Even content made available at no cost to the consumer does not carry with it a license to copy the work. Music over the radio can be listened to by the public for free, but that does not imply a license to play that music in a public location. Therefore, an implied license defense would not protect the person who uses an image search application in a bookstore to find out more information about a book on sale. Even if there is a contractual nexus between the consumer and the bookstore that allows the user to browse the books in the store, there is none between the consumer and the publisher as would be required for the consumer to copy the book covers. Likewise, a person who uses an audio search application in her car to purchase the song she hears on the radio from iTunes has no contract with—and receives no license from—the song’s composer.

Matching applications, like *The Beatles: Rock Band*, do have a contractual nexus in the purchase of the game and so may have a stronger implied license argument. As with anything that is implied, defining the boundaries of the license is very difficult. If, for example, the purchase

112. See, e.g., Orit Fischman Afori, *Implied License: An Emerging New Standard in Copyright Law*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 275, 314 (2008).

113. See, e.g., *id.*

114. Lemley, *supra* note 54, at 567.

115. 1 NIMMER & NIMMER, *supra* note 14, § 4.02 (explaining that common law copyright historically extended only to the right of first publication, but not under modern copyright statutes).

of The Beatles: Rock Band implies a license to some sort of public performance of the game, it is difficult to determine the extent of such a license. Would the determination depend on the number of people playing in or watching the tournament? Or whether the tournament was a profit-making venture, or perhaps as part of a charity event? Without knowing, *ex ante*, the extent of the license, the license is of little help to consumers. A second problem with implying a license for matching applications is that the game publisher can only grant a license to material for which it controls the rights. The game publisher does not own the rights to the music contained within the game, and therefore can only grant a license to the extent permitted by the license between the publisher and the owner. The license that allows the game publisher to use the musical composition in the video game is a synchronization license, the same license issued by the owner of a musical composition to a film producer who wants to include that music in a film. In the film context, synchronization licenses typically do not allow the song to be played as part of the film on television absent a blanket license that would cover the playing of the song independently.¹¹⁶ Therefore, it is likely that the synchronization license between the game publisher and the owner of the musical composition only goes as far as necessary to enable the playing of the video game in a private setting. Thus, the game publisher would be unable to grant a license, implied or otherwise, to the purchaser of the video game to conduct any tournament that might be considered a public performance.

2. Estoppel

The reasoning for the defense of estoppel in the Internet context closely tracks that of implied license. As with implied license, *Field* provides a good case study in how the defense works.¹¹⁷ In *Field*, the court determined that Field was estopped from asserting a copyright claim because (1) Field knew that Google would create cached copies of his content; (2) Field chose not to use standard industry protocols to prevent Google from caching his content; (3) Google was ignorant of Field's desire not to have his content cached; and (4) Google detrimentally relied on Field's silence regarding his desire not to have his content

116. See 6 NIMMER & NIMMER, *supra* note 14, § 30.04, form 30.04C1(1)(11)(a) (explaining that a form synchronization license does not allow a film producer to authorize "television exhibitors" to perform a song, even as part of showing the film). It is possible, if not for the consent decrees between ASCAP, BMI and the U.S. government, that a separate license might even be required of movie theaters to publicly perform the song as part of exhibiting the film. See *id.* at n.91.

117. *Field v. Google, Inc.*, 412 F. Supp. 2d 1106, 1116 (D. Nev. 2006).

cached.¹¹⁸ Rather than focusing on Google's actions, the court focused on Field's failure to use standard industry protocols to prevent the caching. This reasoning shows that the outcome in the case was driven by the fact that Field posted his works for public consumption on the Internet and, in doing so, relinquished a substantial amount of control over further copying.

The defense of estoppel becomes more problematic in the MRIA context. As discussed above, publishing books, music, and art does not have the same implications as posting content on the Web. While there are specific protocols that instruct web crawlers on what they can and cannot do, there is no similar way of notifying users that they are not to use MRIsAs to capture and transmit certain audio or images from the physical world. In addition, even if such protocols were available, it would be difficult or impossible to ensure the services' many users followed them. In the context of a web crawler, a court can be fairly confident that Google's code obeys the industry protocols in determining whether to cache content, and if not, the code can be examined and tested. Users, on the other hand, are much more difficult to control. For example, it is unlikely that Midomi's terms of use, which require the user to have appropriate licenses before uploading performed songs, prevent any improper copying.¹¹⁹

3. Fair Use

Fair use is an affirmative defense that recognizes condemning certain behaviors as copyright infringement can stifle the purpose of copyright to promote progress of the arts and sciences.¹²⁰ Applying copyright law too rigidly—for instance, by forbidding part of a work to be reproduced for uses such as criticism or teaching—would diminish the value of the created works to the public. The doctrine requires courts to take account of at least four factors in determining whether a use was non-infringing:

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used in relation to the

118. *Id.* at 1116–17.

119. *Terms of Use*, MIDOMI, http://www.midomi.com/index.php?action=main.terms_of_use (last visited Nov. 12, 2010) (“You shall be solely responsible for your own User Submissions and the consequences of posting or publishing them. In connection with User Submissions, you affirm, represent, and/or warrant that: (i) you own, or have the necessary licenses, rights, consents, and permissions to use . . .”).

120. See PATRY, *supra* note 2, § 1:2 (“Fair use is an important safety valve that acts as a bulwark against the monopoly power that inheres in an exclusive right and which leads owners of such rights to act in ways contrary to the public interest.”).

copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.¹²¹

The fair use doctrine has been attacked from all directions. While there is a popular notion of what constitutes fair use, the actual doctrine likely under-serves that notion. For example, Professor Jessica Litman has pointed out that while fair use may cover some of what she calls “personal use,” it leaves uncovered a large amount of common activity that most would agree should be legal.¹²² Others have attacked fair use as having grown far beyond the original intentions of the doctrine.¹²³ Professor William Henslee has argued that several decisions of the Supreme Court, including *Sony*, have improperly expanded the fair use defense, and he has suggested that Congress enact a statute that severely limits the scope of fair use as it relates to musical compositions and sound recordings.¹²⁴ Whatever the proper scope of the doctrine, the ambiguity of fair use provides little protection for consumers, who are unable to know, *ex ante*, whether they are infringing a copyright.¹²⁵

Along with the other defenses previously discussed, Google’s behavior in *Field* was also found to be fair use.¹²⁶ Reviewing the fair use factors, the court found that the first fair use factor, the purpose and character of the use, weighed in Google’s favor, because caching served a different purpose than the original works.¹²⁷ Specifically, caching allowed access to information that might be unavailable because either the original site was down or the content had been changed.¹²⁸ In addition, because Google had more control over the cached pages, it could highlight the terms for which the user had searched.¹²⁹ It is fair to criticize each of these “transformative” purposes. First, allowing a user to access

121. 17 U.S.C. § 107 (2006).

122. Litman, *supra* note 13, at 1898 (examples include drawing pictures to resemble images in comic books, forwarding email messages, and playing music in one’s house loud enough that passers-by can hear it if the windows are open).

123. William Henslee, *You Can’t Always Get What You Want, But If You Try Sometimes You Can Steal It and Call It Fair Use: A Proposal to Abolish the Fair Use Defense for Music*, 58 CATH. U. L. REV. 663, 665 (2009).

124. *Id.* at 700.

125. See Litman, *supra* note 13, at 1902–03 (“Fair use in its current form is notoriously fact specific, requiring a hideously expensive trial on the merits to determine. If a person seeking to determine whether a given personal use is lawful needs to go to court, each time, to find out, then the tool is of almost no practical assistance.”); Tehranian, *supra* note 13, at 543 (“Fair use is, after all, notoriously fickle and the defense offers little *ex ante* refuge to users of copyrighted works.”). Some scholars have, however, argued that fair use is a flexible doctrine that balances the interests of creators and consumers. *E.g.*, Pamela Samuelson, *Unbundling Fair Uses*, 77 FORDHAM L. REV. 2537, 2540 (2009).

126. *Field v. Google, Inc.*, 412 F. Supp. 2d 1106, 1118 (D. Nev. 2006).

127. *Id.*

128. *Id.*

129. *Id.* at 1119.

content that has been changed or taken down completely seems to limit the author's ability to control the distribution of her own work. Just because an author gives away her work for free today does not mean that she desires to give it away for free tomorrow. The highlighting of search terms is transformative but could also be seen as the creation of a derivative work, making the behavior less protected—i.e., more likely to be infringement. Further, this feature could be accomplished without caching the original content.¹³⁰

Regarding the second factor, the nature of the copyrighted works, the court found that because Field had placed the works on the Web and therefore made them available for the world to see, the fact that they were creative weighed less in Field's favor that it would have otherwise.¹³¹ While the entire works were cached, their free availability on the Web also meant that the amount of substantiality of the use did not weigh heavily against a finding of fair use.¹³² Finally, because there was no evidence of a market for Field's stories, especially since they were freely available, the court found that regarding the fourth factor, the effect of the use upon potential market, there was no market to be harmed.¹³³ The court then went beyond the four statutory factors and found that Google's good faith in operating its cache—i.e., obeying the industry standard protocols for a website owners requests not to cache their content—was an additional factor that weighed in favor of fair use.¹³⁴

While *Field* shows how fair use can be applied to protect much Internet activity, *Religious Technology Center v. Lerma* provides a good example of what type of activity will not be considered fair use.¹³⁵ Lerma, a critic of the Church of Scientology, posted to the Internet materials in which Religious Technology Center (RTC) owned the copyright.¹³⁶ These works had not been published by RTC but had been widely disseminated as part of a public court file relating to a different case.¹³⁷ RTC sued Lerma for copyright infringement.¹³⁸ Evaluating the fair use factors,

130. *Google Toolbar—Features*, GOOGLE, <http://www.google.com/toolbar/ie/features.html#highlight> (last visited Apr. 29, 2010).

131. *Field*, 412 F. Supp. 2d at 1120.

132. *Id.* at 1120–21.

133. *Id.* at 1121.

134. *Id.* at 1122. To some degree, *Field's* application of fair use might be viewed as taking the standard “first sale” doctrine and transforming it into an extremely broad “first view” doctrine applicable to the Internet. Because the original copy was legally obtained by Google during the indexing process, it has the ability to distribute that work, the author's desire notwithstanding. See 2 NIMMER & NIMMER, *supra* note 14, § 8.12(E).

135. *Religious Tech. Ctr. v. Lerma*, CIV.A. No. 95-1107-A, 1996 WL 633131 (E.D. Va. Oct. 4, 1996).

136. *Id.* at *2.

137. *Id.* at *7.

138. *Id.* at *4.

the court found that the arguments that the purpose of *Lerma*'s copying was for criticism and research were not especially persuasive, particularly considering the substantial amount of the work that was copied.¹³⁹ In other words, even though the use was non-commercial, the substantiality of the copying argued against the use being transformative. This indicates that courts may be less willing to consider fair use arguments, even for non-commercial uses, when there has been substantial copying.

The *Lerma* court also found that the unpublished nature of the works required a narrower scope of fair use.¹⁴⁰ The court noted a somewhat author-subjective view of publication in finding the works had not been published.¹⁴¹ The court also noted that even widely disseminated works cannot be considered published for fair use purposes unless "the author has given 'implied consent' through such action as performance or dissemination."¹⁴² This view of publication may have consequences for evaluating fair use of MRAs. While *Field*'s posting on the Internet weighed against him in his case against Google, the *Lerma* court was much more willing to investigate the copyright owner's intentions when the content came from the physical world. Like the previous defenses, copying content from the physical world seems to reduce the effectiveness of the fair use defense in the MRA context.

Regarding the "amount and substantiality" of the copying, the court attempted but failed to determine whether the amount of the work copied was qualitatively substantial ("essentially the heart of") the work.¹⁴³ The court, therefore, relied on the quantitative analysis: *Lerma* had copied so much that it did not matter whether it was the "heart" or not.¹⁴⁴

Field and *Lerma* illustrate that, whatever the proper scope of fair use, the current doctrine turns on extremely fact-specific determinations. Professor Litman has noted that the current, multifactor fair use test is unwieldy and of little use to consumers for whom the defense is most important.¹⁴⁵ In addition, the approaches taken in the two cases show that the source of the copy may affect the determination of fair use. In *Field*, the author had made the content available for free on the Internet. The source of the copy made using an MRA—the physical world—may make it more analogous to the content in *Lerma*, where the copyright

139. *Id.* at *5.

140. *Id.* at *7.

141. *Id.*

142. *Id.* (quoting *Harper & Row, Inc. v. Nation Enters.*, 471 U.S. 539, 551 (1985)).

143. *Id.* at *9.

144. *Id.*

145. Litman, *supra* note 13, at 1902–03; *see also* Tehranian, *supra* note 13, at 543 ("Fair use is, after all, notoriously fickle and the defense offers little ex ante refuge to users of copyrighted works.").

owner had not made an effort to widely disseminate the content by placing it on the Internet.

Applying the fair use factors to our MRIA examples, simple searching would likely qualify as fair use. Using a search service serves a different purpose than that served by the original work. The purpose of an original musical work is to listen to the song, while, for example, the purpose of Shazam is to learn more about the song. Shazam requires only a short snippet of a song to identify it, and that snippet can be any portion of the song, not necessarily the “heart” of the work. But the fact-specific nature of the fair use analysis means that the determination could turn on small details. For example, it would weigh more against a finding of fair use if a user transmitted the “heart” of a song, since it might be considered more substantive than some less recognizable segment. Similarly, under the quantitative analysis employed in *Lerma*, use of a music search application that required transmission of a whole song rather than a snippet would also weigh against a finding of fair use. While the “nature” of a popular song as an item of commerce may weigh against fair use, this would likely be countered by the fact that there would be no harm to the market for the song. The use of Shazam may, in fact, help the market as a new channel of commerce to purchase the song.

Stocking applications may be more likely to fall outside of fair use. For example, Midomi requests that users transmit full versions of copyrighted songs to the service. This highlights two different purposes a user may have in stocking applications such as Midomi. First, a user may stock Midomi in order to help build Midomi’s index. This would seem to be a transformative use: it allows people to find the original song more easily. Second, a user may stock Midomi in an effort to secure fame and glory as a “Midomi Star.”¹⁴⁶ This does not seem to be a transformative use as it serves the same purpose as the original song: it allows people to listen to the song, albeit an unlicensed performance of it. Therefore, the dual purposes of stocking point in opposite directions regarding fair use. Of course, it is extremely difficult to determine which purpose the user had when he originally recorded the song. While it may be possible to stock an audio service with a hummed or sung snippet, many users may perform the entire song, and therefore the amount of copying also weighs against fair use. Lastly, the market may be affected if this behavior proliferates and consumers begin listening to these unlicensed, uncompensated performances of the musical compositions.

146. *Midomi Stars*, MIDOMI, <http://www.midomi.com/index.php?action=main.charts&from=topnav> (last visited Nov. 18, 2010).

While audio search services seem to benefit the market for a work, some MRIsAs could harm the market by offering substitutes. For example, when a user searches for a song in Midomi, he finds not only the recording by the original artist but also all of the versions that have been recorded by Midomi users. As these can be played for free, some users may choose to forgo purchasing the original track. A mash-up of an audio search service with a music suggestion service, such as Pandora or iTunes Genius, could have a similarly negative effect on the market for the searched-for song, since they suggest to users other, possibly less expensive, songs in which users might be interested. An error-prone algorithm might even harm the market for a work if it directed users to purchase a song other than the one sought.

The treatment of the market harm factor also has the effect of working against users interacting with MRIsAs. The market harm factor is analyzed based not on the individual use but on a consideration of whether the market would be harmed if the use proliferated.¹⁴⁷ While aggregate behavior would seem to be an appropriate analysis of the service provider's liability, that indirect liability can only exist if there was direct infringement. Where aggregate behavior appears to harm copyright owners but individual behavior appears lawful, copyright owners might argue against the users' behavior being fair use; otherwise, the application of fair use to individual behavior would defeat any claim against the service provider for the aggregate behavior. Such situations might arise in the context of MRIsAs. Consider, for instance, my hypothetical search-suggestion mash-up application that directs users to substitutes for the transmitted clip. Each transmission of a short snippet of a song would seem to fall into the realm of conduct that should be protected. Evaluated on its own, such behavior by the user would appear to be something that should be protected by fair use, and it would seem improper to hold the user liable for using the application. Looking at the aggregate of the behavior might tell a different story. The service provider profits from selling the substitute songs and harms the market for the original song in the process.

4. DMCA Safe Harbor

The Digital Millennium Copyright Act (DMCA) of 1998 was Congress's attempt to build a legislative foundation for the growth of the

147. See, e.g., PATRY, *supra* note 2, § 6:10 ("Although insubstantial uses by themselves are insufficient to tip the fourth factor in the copyright owner's favor, if the use is of a type which, if widespread, would result in substantial harm, this fact should be taken into account.").

Internet.¹⁴⁸ Congress recognized that it had to balance the concerns of copyright owners about online infringement with the concerns of service providers about incurring liability.¹⁴⁹ The compromise Congress struck created exemptions from liability for copyright infringement for common activities carried out by service providers.¹⁵⁰ Section 512 of the DMCA enumerates these “safe harbors.”¹⁵¹ These include protection for “[t]ransitory [d]igital [n]etwork [c]ommunications” where the copying is passive and done to facilitate the transportation of the information across the Internet.¹⁵² Another safe harbor, successfully raised as a defense in *Field*, is for “[s]ystem [c]aching.”¹⁵³ A third important safe harbor is that for storing “[i]nformation . . . [a]t [the] [d]irection of [u]sers.”¹⁵⁴ This safe harbor exempts service providers from liability for user-posted content as long as they properly police the site by taking down infringing material, including upon the request of the copyright owner.¹⁵⁵ It is important to note that this safe harbor protects the service providers from direct liability but does not protect them from liability for vicarious infringement.¹⁵⁶

Unlike the other affirmative defenses, the safe harbors are not meant to nullify infringement but only to take service providers off the list of defendants. Before a defendant can invoke any of the DMCA’s safe harbors, it must first show that it is a service provider. Accordingly, the DMCA’s safe harbors provide no protection for users of MRIsAs. Even if the user is acting in ways analogous to those protected for service providers, the user receives no protection—compare a user transmitting a requested song by singing into Midomi to that of YouTube transmitting a

148. See, e.g., Mike Scott, *Safe Harbors Under the Digital Millennium Copyright Act*, 9 N.Y.U. J. LEGIS. & PUB. POL’Y 99, 99–100 (2006).

149. E.g., *id.*

150. E.g., *id.*

151. 17 U.S.C. § 512 (2006).

152. 17 U.S.C. § 512(a).

153. 17 U.S.C. § 512(b). A recent article, however, challenges this view of the “system caching” safe harbor, arguing that the caching envisioned by the DMCA is of a more technical nature, and does not cover the type of caching in which Google engages. Peguera, *supra* note 16, at 620–23 (arguing that the “system cache” safe harbor is meant to protect “proxy caching” and not the type of caching in which Google was engaged).

154. 17 U.S.C. § 512(c).

155. 17 U.S.C. § 512(c)(1)(C).

156. 17 U.S.C. § 512(c)(1)(B) (stating there is no safe harbor if a service provider receives a financial benefit directly attributable to the infringing activity, if “the service provider has the right and ability to control such activity”); see also Mark A. Lemley, *Rationalizing Internet Safe Harbors*, 6 J. TELECOMM. & HIGH TECH L. 101, 104 n.23, 114 n.53 (2007) (noting that the language of § 512 suggests that it does not provide a safe harbor from vicarious liability but that the legislative history suggests the opposite). *But see* Edward Lee, *Decoding the DMCA Safe Harbors*, 32 COLUM. J.L. & ARTS 233, 240–454 (2009) (arguing that the DMCA provides for immunity from claims of vicarious and contributory infringement).

requested video to a user. While there are obvious differences—the servers at YouTube are not the humans singing to Midomi—this does not necessarily justify the policy decision to protect service providers, but not users. While computers are in a sense “dumber” than humans, the service providers running them may be more sophisticated actors than the users of MRIsAs. Although the user watching a YouTube clip may have a better sense of whether the content is copyrighted than the server transmitting it, the company running Midomi may have a better understanding of whether it is asking a user to engage in copyright infringement when it asks the user to sing a song it knows is copyrighted.¹⁵⁷

III. PROMOTING INNOVATION REQUIRES CONSIDERING USERS

This Essay has shown that even seemingly innocuous user interactions with MRIsAs can constitute copyright infringement and that the defenses that are used to justify the legality of legacy web behavior are unsuited to protecting users making copies of real world content. This Part discusses the status quo’s potential harm to innovation. It then proposes a solution to address this harm that also preserves copyright owners’ ability to protect themselves from harmful uses of their works.

A. *The Potential Harm*

An obvious response to the possible infringement through use of MRIsAs is that these are technical infringements with which the content owners do not appear to be concerned, and so neither should we. These behaviors would likely fall into the high-volume, low-value infringement that Professor Tim Wu identifies as “tolerated use.”¹⁵⁸ Professor Wu argues that such use is not of concern because copyright owners will distinguish between beneficial and detrimental uses and only bring infringement suits against the detrimental uses.¹⁵⁹ Searching MRIA behavior, which provides users with the ability to purchase content, may even benefit copyright owners.

157. Even if the user is aware that the song being sung is copyrighted, she may not be aware that her transfer of a copy of her rendition of the song over the Internet would constitute infringement.

158. Tim Wu, *Tolerated Use*, 31 COLUM. J.L. & ARTS 617, 628, 630–34 (2008) (arguing that there is a category of high-volume, low-value infringement that is tolerated by the copyright owners and that needed reform may be in those owners making clear what they will tolerate and what they will not tolerate).

159. *Id.* at 628 (stating that copyright owners “tolerat[e] most infringement, and enforc[e] only as against the costly varieties”).

Even absent actual enforcement, the threat of enforcement along with the uncertainty in the law chills innovation. Professor Lawrence Lessig has noted this effect with regard to service providers.¹⁶⁰ The uncertainty related to user liability for using MRIsAs can also chill innovation. As Professor Litman has noted, the progress of arts and sciences requires not just that works are created but that they are consumed.¹⁶¹ Personal use is important because it actually promotes the consumption of copyrighted works.¹⁶² Similarly, without users to take advantage of them, service providers would not invest in development of innovative new applications. Service providers may also shy away from development of innovative MRIsAs if they are concerned that such applications might expose them to indirect liability. While some developers are sophisticated parties who will seek out legal advice about what does and does not constitute infringement, many developers of smartphone applications are individuals who cannot or do not make such significant investment.¹⁶³ In this way, the division between service provider and user is becoming smaller, and the odds that a service provider lacks legal advice are increasing.

In response to the concern that the threat of enforcement may deter beneficial use, Professor Wu makes two suggestions. First, he suggests a shift in the law that would give better treatment to beneficial or complementary uses.¹⁶⁴ Second, he suggests that copyright owners provide a “no action policy” indicating which uses will be tolerated and which will not.¹⁶⁵ While both are valuable suggestions, neither is especially useful in the MRIA context. He bases his suggestion on shifting the law both on fair use grounds and on the idea that complementary uses—such as fan sites that provide beneficial marketing for the original works—should

160. LAWRENCE LESSIG, *FREE CULTURE: THE NATURE AND FUTURE OF CREATIVITY* 193–94 (2005).

161. Litman, *supra* note 13, at 1882 (“[C]opyright law encourages authorship at least as much for the benefit of the people who will read, view, listen to, and experience the works that authors create, as for the advantage of those authors and their distributors.”).

162. *Id.* at 1908 (“Personal uses, though, occupy the heart of copyright’s historic liberties to enjoy copyrighted works.”).

163. See Ben Loricca, *The Most Efficient iPhone Developers*, O’REILLY RADAR (Feb. 11, 2010), <http://radar.oreilly.com/2010/02/efficient-iphone-developers.html> (noting there are almost 31,000 different developers who have developed apps for the iTunes store and that “[t]here are quite a few individual developers who’ve produced top-grossing apps”); *iOS Developer Program*, APPLE, <http://developer.apple.com/programs/ios/> (last visited Oct. 27, 2010) (listing the cost of enrolling in Apple’s developer program that includes the needed tools for writing iPhone apps at ninety-nine dollars per year).

164. Wu, *supra* note 158, at 630–33.

165. *Id.* at 633–34 (“In legal terms, the copyright no action policy is a unilateral, non-exclusive, potentially revocable license from the media owner to all members of the general public who meet its terms. The No Action Policy could be specific to a given work, or could be a blanket policy for all works owned by a given media firm.”).

not be considered derivative works. The problems with relying on fair use to protect users of MRIs are discussed above.¹⁶⁶ The idea that complementary uses should not be considered derivative works does not really apply to most MRI behavior. For instance, determining infringement of reproduction and performance rights does not require a consideration of how transformative the use is.¹⁶⁷ Professor Wu's suggestion about providing notice of a "no action policy" also provides little value in the context of MRI behaviors. Such a policy is only valuable if the user knows who owns the content. Even if a user took the time to check a website for such a policy before each use of an audio search application, she would need to know which website to visit. If she knew where to look—and therefore knew who owned the song to which she was listening—there would be less need to search for the audio in the first place.

Even if most MRI behavior fell into the category of tolerated use and the threat of enforcement did not deter users, there are still reasons for being concerned that use of MRIs might violate copyright law. First, as Professor Lessig has pointed out, allowing copyright law to officially condemn behavior in which many people are engaged "corrupts citizens and weakens the rule of law."¹⁶⁸ Professor Lemley has also noted that the "cognitive dissonance between copyright law and the real world is troubling," not only because it may affect the respect for the rule of law in general but also because "it may lead those who violate the unenforced parts of the copyright laws with impunity to assume that they can violate the copyright law in other ways as well."¹⁶⁹ To the extent that users violate copyright law by using MRIs, this represents a new wedge separating copyright law from copyright norms.

Second, the fact that at least some MRI behaviors would not seem to harm—and may even benefit—copyright owners, does not mean that there will never be an infringement suit brought against a user. The content industry has historically attempted to exert as much control over works as possible.¹⁷⁰ For example, Universal Music Group (UMG) sued MP3.com for copyright infringement,¹⁷¹ forcing MP3.com to shut

166. See discussion *supra* Part II.C.3.

167. See discussion *supra* Part II.A.1–2.

168. LESSIG, *supra* note 160, at 199.

169. Lemley, *supra* note 54, at 578.

170. See, e.g., Pamela Samuelson & Jason Schultz, *Should Copyright Owners Have to Give Notice of Their Use of Technical Protection Measures?*, 6 J. ON TELECOMM. & HIGH TECH. L. 41, 42 (2007) (discussing how the content industry has employed technical protection measures that obstruct both legitimate and illegitimate access and uses of content).

171. UMG Recordings, Inc. v. MP3.Com, Inc., 92 F. Supp. 2d 349 (S.D.N.Y. 2000).

down.¹⁷² The infringing service allowed users to listen to music from legally owned CDs without the need to have the actual CD on hand.¹⁷³ UMG's parent company, Vivendi,¹⁷⁴ eventually purchased and incorporated the service of MP3.com into Vivendi's subscription service, possibly a suggestion that the concern was not necessarily with the service itself but with who controlled the service.¹⁷⁵

Similarly, to the extent that there is revenue to be generated when search applications lead consumers to content, the content industry might feel that such revenue should go to them and not a third party. Professor Sonia Katyal has described a shift in the strategy of the music industry's copyright enforcement from litigation against consumers to more passive forms of surveillance and monitoring.¹⁷⁶ By allowing the identification of locations that are playing music without the proper license, an industry-controlled audio search application could be an important monitoring tool in this new approach.¹⁷⁷ At the same time that a bar patron is learning more about a song being played in a bar, the industry can match the location of the sending phone to its licensee database, generating a license agreement or cease-and-desist letter to the bar if it is not a current licensee.¹⁷⁸

Further, the idiosyncratic interests of individual artists may lead to claims against users for behaviors involving specific works.¹⁷⁹ The statutory damages resulting from copyright infringement provide a strong incentive for copyright owners to bring claims against whomever might be able to pay or is willing to settle.¹⁸⁰

172. E.g., Jessica Litman, *War Stories*, 20 CARDOZO ARTS & ENT. L.J. 337, 346–47 (2002).

173. E.g., *id.*

174. VIVENDI, <http://www.vivendi.com/vivendi/Universal-EN> (last visited Oct. 27, 2010).

175. *Id.*

176. Sonia K. Katyal, *Filtering, Piracy Surveillance and Disobedience*, 32 COLUM. J.L. & ARTS 401, 402–03 (2009).

177. Such a tool would appear to match Professor Katyal's definition of piracy surveillance in that it: "(1) [is] performed by private, non-government entities; (2) encompass[es] extrajudicial determinations of copyright infringement; and (3) [is] extralegal in nature; that is, surveillance that takes place entirely outside of ongoing litigation." Sonia K. Katyal, *Privacy vs. Piracy*, 7 YALE J.L. & TECH. 222, 292 (2004–05).

178. See Tehrani, *supra* note 13, at 550 (discussing how the advance in surveillance technology increases the "detection and enforcement power of copyright holders").

179. See *Lenz v. Universal Music Corp.*, 572 F. Supp. 2d 1150, 1152 (N.D. Cal. 2008) (noting that a takedown notice sent to YouTube might have been driven by Prince's mission of "reclaim[ing] his art on the internet").

180. See, e.g., *Field v. Google, Inc.*, 412 F. Supp. 2d 1106, 1118 (D. Nev. 2006); see also Tehrani, *supra* note 13, at 548 (discussing how the "long tail" has made copyright enforcement "increasingly worthwhile for a growing number of copyright holders"). This use of the term "long tail" refers to the fact that new technology has made it easier to connect people with very specific interests and has therefore made it economically viable to create content for

The need to consider users is illustrated by *Lenz v. Universal Music Corp.*¹⁸¹ The plaintiff in *Lenz* posted a YouTube video of a toddler dancing with twenty seconds of Prince's "Let's Go Crazy" audible in the background.¹⁸² Universal Music, the owner of the copyright, issued a takedown notice under § 512 to YouTube, notifying it that Universal had a good faith belief that the clip violated their copyright. YouTube complied with the notice and removed the clip from its site, which is a necessary step to stay within the safe harbor for user-posted content. Although the court ultimately held that the good faith standard of issuing a takedown notice required Universal to consider whether the posting was fair use,¹⁸³ the background of this case shows that striking a balance between service providers and copyright owners can ignore important interests of users. In this case, Prince desired total control over the use of his work, a goal Universal was willing to help him pursue in order to maintain a good relationship with him.¹⁸⁴ As a service provider, YouTube had no choice but to strictly follow the takedown requirements if it wanted to stay within the safe harbor. This meant that the interest of Lenz in posting a video that contained a fair use copy of Prince's material was lost in the shuffle. While Lenz did win this case, showing that some courts may be willing to consider the interests of users, the result does not provide much comfort for users in the future. The hurdle of "good faith" is easily overcome by a copyright owner in issuing a takedown notice, especially given the ambiguity of the fair use doctrine. Furthermore, if Lenz had known ahead of time what she would go through to vindicate her rights, she may not have posted the clip in the first place.

Thus, while the DMCA has put in place a regime that allows service providers to protect themselves from public liability, it has not provided a way for users to similarly shield themselves from liability. Section 512 provides a notice-and-takedown procedure that allows copyright owners to notify service providers of infringing content and request that such content be removed.¹⁸⁵ Service providers must follow the notice-and-

such niche interests. See CHRIS ANDERSON, *THE LONG TAIL: WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE* 15–26 (2006).

181. *Lenz*, 572 F. Supp. 2d 1150.

182. *Id.* at 1151.

183. *Id.* at 1155.

184. The takedown notice seems to leverage the rights provided by the DMCA in an attempt to gain control over what are known as "moral rights" that have only limited protection for visual works in the United States. It is also somewhat analogous to "dilution" in the trademark context. While no one would consider the video a Prince-authorized work, Prince likely had a desire not to have the song associated with dancing toddlers, as opposed to his rock-and-roll persona.

185. 17 U.S.C. § 512(c)(1)(C) (2006) (stating that the exception to liability for monetary relief for a service provider requires the service provider to "upon notification of claimed

takedown procedure to stay within the DMCA's safe harbor for hosting user-uploaded content.¹⁸⁶ As a result, innovation is protected in two ways. Most obviously, it allows service providers to create services that host user-uploaded content without fear of liability. Additionally, because a takedown notice sent by a copyright owner is the primary way a service provider discovers infringement, a copyright owner who tolerates an infringing use because it is beneficial to him can choose to refrain from sending a notice, thereby allowing innovative services to thrive.¹⁸⁷ On the other hand, users remain threatened with liability for copyright infringement for engaging in the same acts for which the service provider is protected. This uncertainty threatens innovation, because the viability of MRIs relies heavily on users' willingness to copy and transmit copyrighted material.

B. A Potential Solution

The DMCA represented Congress's attempt to protect innovation on the Internet by creating safe harbors for service providers engaged in routine activities. By not taking into consideration the role of users, the DMCA may not protect innovation as fully as intended. While fair use would be the most likely candidate for protecting users, it does little more than help clarify the extremes. Therefore, continued innovation on the Internet requires not just safe harbors for service providers but also safe harbors for users.

To allow MRIs and other innovative applications to flourish, users must be given the same respect and protection given to service providers. Like the safe harbors of § 512, this does not require full immunity for all user actions. Instead, it requires protection from liability for routine behavior essential to continued innovation. In other words, it needs to filter out innocent acts from acts where liability is appropriate. Because the safe harbor is meant to protect users from routine behavior, it should be both simple and accord with the public's current beliefs about copyright law.¹⁸⁸ In the context of MRIs, an appropriate threshold for separating out innocent uses is the finding of harm. This is similar to making a

infringement . . . respond[] expeditiously to remove, or disable access to, the material that is claimed to be infringing or to be the subject of infringing activity").

186. *Id.*

187. *See* Wu, *supra* note 158, at 619 (positing that one reason a copyright owner might tolerate use is "a calculation that the infringement creates an economic complement to the copyrighted work—it actually benefits the owner").

188. *See generally* Litman, *supra* note 57.

determination, *ex ante*, of what a copyright owner would likely consider a tolerated use.¹⁸⁹

Further, a valid solution should protect users but not necessarily nullify possible infringement. In other words, a user safe harbor should appropriately shift the liability to the MRIA service provider when there has been injury to copyright owners, even if the user should not be liable for the injury. This recognizes that while each user transmission to an MRIA might do little harm to the copyright owner, there may be situations where there is still aggregate harm for which the copyright owner should be able to recover.¹⁹⁰

Another concern is that it may be difficult to find the dividing line between MRIA and legacy applications that have already been condemned as infringing. The purpose of this safe harbor is to protect innovation, not to reignite battles over the legality of uploading to P2P programs such as Grokster. One way to help distinguish these two types of applications is to focus on what Professor Matthew Sag terms “non-expressive use.”¹⁹¹ Nonexpressive use is use that does not communicate the author’s original expression to the public.¹⁹² Establishing a safe harbor based on nonexpressive use could help protect MRIA behavior, while not protecting infringement by uploading protected works to P2P applications.

A focus on nonexpressive use would also distinguish between web-based searching and stocking applications, on the one hand, and matching technologies, on the other. The user safe harbor is, perhaps, less appropriate for use of matching applications. Expressing Lennon and McCartney’s original work through a public performance of The Beatles: Rock Band would seem to create a loophole in the established law regarding public performances.¹⁹³ The user safe harbor is also less important for matching video games because the purchase of the video game creates a contractual nexus. This allows both a defense of implied license and, perhaps more usefully, the ability for a video game publisher to create an explicit license clarifying the extent of lawful uses of the game.

To balance the protection of users with the legitimate interests of copyright owners, I propose the following safe harbor:

189. See Wu, *supra* note 158, at 617 (stating that “casual and often harmless uses of works comprise the category of tolerated use”).

190. Professor Wu details two examples of such high-volume, low-value situations. *Id.* at 627–28.

191. Matthew Sag, *Copyright and Copy-Reliant Technology*, 103 Nw. U. L. REV. 1607, 1624 (2009).

192. *Id.* at 1624 (“Copyright protects only works that contain original creative expression.”).

193. See *supra* Part II.A.2.

A user of a service provider's service shall not be liable for statutory damages under 17 U.S.C. § 504(c) for transmitting material, including performances of that material, to that service provider where the purpose in transmitting is not to communicate the author's original expression to the public. Nothing in this section shall be construed to limit a copyright owner's ability to recover damages, statutory or otherwise, from a service provider.

This user safe harbor statute addresses the considerations above. First, by eliminating statutory damages, it places the burden on the copyright owner to show: (1) actual damages or (2) profits by the user.¹⁹⁴ Users are therefore liable for behavior that inflicts harm on the copyright owner or generates profit for themselves, but not for behavior that does neither. Second, by requiring that the transmission be for a purpose other than communicating the author's original expression to the public, the statute would not expand protection to other, previously condemned acts, such as P2P file sharing. Together, these aspects would allow courts to separate users who engage in similar activities with different purposes or different results. In other words, users who stock a service with popular cover versions of copyrighted songs, become famous, and begin competing with the artists they are covering might have to pay damages.¹⁹⁵ Users whose contributions to the service simply increase the effectiveness of the sound matching, with no intention of financial gain, would not be required to pay any damages.

The statute would also allow copyright owners to continue to bring claims against service providers for indirect liability for aggregate behaviors. This recognizes that the actions of a service provider can sometimes go beyond inducement to a form of entrapment in which an individual uses an MRIA in good faith, trusting that the service provider would not distribute an application whose standard use constitutes copyright infringement. This approach matches the approach taken by the DMCA safe harbor in protecting service providers: it punishes the party at fault while protecting innocent parties.

In addition, placing the liability for aggregate action on the service provider shifts the burden of preventing infringement to the service provider, who is the lowest-cost avoider.¹⁹⁶ The user of an audio search

194. 17 U.S.C. § 504(b) (2006) ("The copyright owner is entitled to recover the actual damages suffered by him or her as a result of the infringement, and any profits of the infringer that are attributable to the infringement and are not taken into account in computing the actual damages.").

195. This would also apply to services that pay users to stock their indexes.

196. See Ronald J. Mann & Seth R. Belzley, *The Promise of Internet Intermediary Liability*, 47 WM. & MARY L. REV. 239, 265-75 (2005) (proposing a framework for

application has little, if any, knowledge about the transmitted clip. The service provider, on the other hand, has the ability to tailor the service by excluding results related to works for which the copyright owner has requested such exclusion.

One potential criticism of this approach is that, unlike the DMCA's safe harbor, it does not provide for a private enforcement mechanism.¹⁹⁷ In the context of a user safe harbor, however, such a private enforcement mechanism is not necessary for two reasons. First, the proposed statute does not remove all liability for monetary damages from the user. The user is only protected from liability for statutory damages. The public enforcement option remains open to copyright owners who find they have suffered actual harm from the user's actions. Just as the notice-and-takedown mechanism of § 512 helps to separate incidental infringing acts of service providers from willful ones, the requirement of actual harm to receive monetary damages helps separate incidental infringing acts of users from those acts based on malice or financial gain. Second, by not foreclosing claims against service providers for indirect liability, the burden is placed on the service provider to avoid infringement by users and to do any necessary monitoring.

CONCLUSION

Like the evolution of Web 2.0 over the past decade,¹⁹⁸ smartphone applications represent the current area of extreme innovation, and MRIs are some of the most innovative of these new applications.¹⁹⁹ However, like many innovative uses of communication technology, there

policymakers to use to determine who is the least-cost avoider in the context of Internet-related misconduct).

197. See 17 U.S.C. § 512 (c)(1)(C); *supra* notes 185–186 and accompanying text; see also Rebecca Tushnet, *Power Without Responsibility: Intermediaries and the First Amendment*, 76 GEO. WASH. L. REV. 986, 1003 (2008).

198. Tim O'Reilly & John Battelle, *Web Squared: Web 2.0 Five Years On*, WEB 2.0 SUMMIT, <http://www.web2summit.com/web2009/public/schedule/detail/10194> (last visited Apr. 28, 2010).

199. According to Apple, its AppStore has over 225,000 applications available for the iPhone, iPod Touch, and iPad. AppleInsider Staff, *Apple Says App Store Has Made Developers Over \$1 Billion*, APPLEINSIDER (June 7, 2010, 1:10 PM), http://www.appleinsider.com/articles/10/06/07/apple_says_app_store_has_made_developers_over_1_billion.html. According to Google, its Android Market has over 80,000 applications available. *Introducing the T-Mobile G2 with Google*, T-MOBILE (Sept. 9, 2010), <http://press.t-mobile.com/articles/t-mobile-g-with-google>. In addition to users, copyright owners have started to take an interest in these technologies. See, e.g., *Soundcheck: Sing a Song with Me*, WNYC (Mar. 15, 2007), <http://www.wnyc.org/shows/soundcheck/2007/mar/15/sing-a-song-with-me/> at 4:03 (“Record labels are contacting [Midomi] to try to get in touch with some of [Midomi’s] performers because these performers are getting thousands and thousands of impressions . . .”).

is a question as to what degree the use of these applications conflicts with copyright law.²⁰⁰ If there is a conflict, what potential harm is created by the conflict? Finally, to the extent there is harm, does it need to be alleviated by either the use or the law giving way?²⁰¹ As shown in this Essay, MRIAs have the potential to open users to liability for copyright infringement. While copyright law has evolved to protect service providers in the interest of developing the Internet, it has left users behind.

Even though much MRIA use may be tolerated by copyright owners, the uncertainty of potential liability can still lead to harms, especially to innovation.²⁰² This is especially true for the most innovative applications, over which there may be legitimate business reasons to maintain control.²⁰³ The threat of liability is compounded with the introduction of artists whose idiosyncratic interests may control.²⁰⁴

If users are uncomfortable with using new services, service providers have no incentive to innovate. Therefore, providing protection to service providers, without similar protection to users, will cause innovation to suffer. To support continued development of innovative technologies, Congress should give users a safe harbor.

200. See Tehranian, *supra* note 13, at 537 (noting the temptation to cite the Internet as “disrupting . . . the delicate balance struck by pre-digital copyright laws between the rights of owners and users of creative works”).

201. See *id.* at 548 (noting that new technology is forcing the recognition of the “vast disparity between what activities the Copyright Act proscribes and what the average American might consider fair or just . . .”); see also Wu, *supra* note 158.

202. See Wu, *supra* note 158, at 628 (acknowledging that even if use is tolerated, “the trick is to enforce [not tolerated uses] without deterring complementary user of the underlying work . . .”). Professor Wu’s view of tolerated use, including the difficulty in applying his proposals to MRIAs, is discussed above. See *supra* Part III.1.

203. See Grimmelmann, *supra* note 2, at 17 tbl.1 (stating that content providers have an interest in indexing that might be protected by the legal theories of trespass and contract); see also *Perfect 10, Inc. v. Amazon.com, Inc.*, 487 F.3d 701, 731 (9th Cir. 2007) (referring to copyright owner’s suggestion that Google should “prevent its web crawler from indexing infringing websites and [should] block access to infringing images . . .”).

204. See, e.g., Mike Collett-White, *Prince to Sue YouTube, eBay over Music Use*, REUTERS, Sept. 13, 2007, <http://www.reuters.com/article/idUSL1364328420070914>; D.T. Max, *The Injustice Collector*, THE NEW YORKER, June 19, 2006, at 35 (describing how James Joyce’s grandson felt that memorization of a portion of *Finnegan’s Wake* infringed the estate’s copyright).