

The Copy Process

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ABSTRACT. There's more than one way to copy. The process of copying can be laborious or easy, expensive or cheap, educative or unenriching. But the two intellectual property regimes that make copying an element of liability, copyright and trade secrecy, approach these distinctions differently. Copyright conflates them. Infringement doctrine considers all copying processes equally suspect, asking only whether the resulting product is substantially similar to the protected work. By contrast, trade secrecy asks not only *whether* but also *how* the defendant copied. It limits liability to those who appropriate information through means that the law deems improper.

This Article argues that copyright doctrine should borrow a page from trade secrecy by factoring the defendant's copying process into the infringement analysis. To a wide range of actors within the copyright ecosystem, differences in process matter. Innovators face less risk from competitors if imitation is costly than if it is cheap. Consumers may value a work remade from scratch more than they do a digital reproduction. Beginners can learn more technical skills from deliberately tracing an expert's creative steps than from simply clicking cut and paste. The consequences of copying, in short, often depend on how the copies are made.

Fortunately, getting courts to consider process in copyright cases may not be as far-fetched as the doctrine suggests. Black-letter law notwithstanding, courts sometimes subtly invoke the defendant's process when ostensibly assessing the propriety of the defendant's product. While these decisions are on the right track, it's time to bring process out into the open. Copyright doctrine could be both more descriptively transparent and more normatively attractive by expressly looking beyond the face of a copy and asking how it got there.

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INTRODUCTION

One of intellectual property (“IP”) law’s core challenges is distinguishing productive acts of copying from counterproductive ones. In both copyright and trade secret law, copying from the owner is necessary for liability but not sufficient.¹ Because not all copying is actionable, these regimes must decide which to penalize and which to permit.² The inquiry largely involves a comparison between products. One can’t assess infringement without holding up a protected good next to an accused copy and asking whether they appear too alike.³

But appearances don’t always tell the whole story. Similar products—

1. Patents, by contrast, are enforceable even against one who independently develops an identical invention. Copying is irrelevant to liability. *See infra* section I.B.
2. *See, e.g.*, *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 361 (1991) (“[N]ot all copying . . . is copyright infringement.”); *Penalty Kick Mgmt. Ltd. v. Coca Cola Co.*, 318 F.3d 1284, 1293 (11th Cir. 2003) (“[I]f the defendant independently created the allegedly misappropriated item with only ‘slight’ contribution from the plaintiff’s trade secret, then the defendant is not liable for misappropriation.”) (quoting RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40 cmt. c (1995)). *Cf. TraffFix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23, 29 (2001) (“[C]opying is not always discouraged or disfavored by the laws which preserve our competitive economy. . . . Allowing competitors to copy will have salutary effects in many instances.”).
3. *See* Jeanne C. Fromer & Mark A. Lemley, *The Audience in Intellectual Property Infringement*, 112 MICH. L. REV. 1251, 1252 (2014) (“A principal question in IP disputes is whether the defendant’s product (or work, or brand, or idea) is too similar in some respect to the plaintiff’s.”)

even ones that are copied from the same original source—can have dissimilar provenances. Some reproductions are made with skill and labor; others are made easily and cheaply. Some reproductions are made in ways that teach their makers new know-how; others are made in ways that yield nothing more than the reproduction itself. Within most areas of human creativity, there's more than one way to copy.

To a wide range of actors within the IP ecosystem, the means of copying matters. Innovators face less risk from competitors if imitation is costly than if it is cheap. Consumers may value a work remade from scratch more than they do an otherwise identical digital reproduction. Beginners can learn more technical skills from deliberately tracing an expert's creative steps (ask anyone who's taken a painting class or built a homemade radio) than from simply clicking cut and paste. The consequences of copying, in short, often depend on how the copies are made.

That's a significant contingency for IP policy, which most commentators in the United States justify in terms of the consequences that it generates.⁴ Copyrights and trade secrets alike are supposed to generate enough social value to outweigh their costs.⁵ If some copy processes are more valuable or less costly than others, one might expect the law to scrutinize not only what

4. There are so many sources on this point that a single footnote can only skim the surface. *See, e.g.*, Brett Frischmann & Mark P. McKenna, *Intergenerational Progress*, 2011 WIS. L. REV. 123, 123 (2011) (“The Intellectual Property Clause of the U.S. Constitution identifies ‘Progress of Science and useful Arts’ as the ends served by exclusive rights to writings and discoveries. Courts and scholars alike overwhelmingly have conceived of these ends in utilitarian terms, seeking more and better inventions and works of authorship.”); Lawrence B. Solum, *Questioning Cultural Commons*, 95 CORNELL L. REV. 817, 834 (2010) (noting that under “the mainstream of American theory . . . [r]egimes for the management of information resources are assessed by reference to the consequences they produce, and the key question is whether a given regime is welfare- or utility-maximizing.”). To be sure, several IP scholars have recently questioned whether consequentialism can perform all the work asked of it, *see, e.g.*, ROBERT P. MERGES, *JUSTIFYING INTELLECTUAL PROPERTY* 3 (2011) (“The sheer practical difficulty of measuring or approximating all the variables involved means that the utilitarian program will always be at best aspirational.”), and argued that deontic theories can perform a greater share of the normative heavy lifting, *see, e.g.*, *id.* (invoking Locke, Rawls, and Kant to justify IP scope); Frischmann & McKenna, *supra*, at 123 (asserting that “the normative basis for IP laws need not be utilitarianism” and that “there is room for a normative commitment to intergenerational justice”). Still, despite this developing pluralism, in the interests of space I limit myself in this Article to the familiar consequentialist lens.
5. *See* Deepa Varadarajan, *Trade Secret Fair Use*, 83 FORDHAM L. REV. 1401, 1408 (2014) (“[Trade secrecy] is increasingly theorized as a subset of intellectual property because it shares the incentive-promoting goals of patent and copyright. Courts and scholars often justify patent, copyright, and trade secret laws as mechanisms to encourage the invention or creation of new technological advances and expressive works.”).

gets copied but also the means through which that copying is done.

Trade secrecy, however, is the only IP regime that explicitly does so. Secret information isn't protected against all methods of copying, just against the ones that the law deems to be "improper."⁶ That element requires courts to assess "whether the means of acquisition are inconsistent with accepted principles of public policy."⁷ Under that test, using reverse engineering to decipher and then exploit the information is fully permissible.⁸ Indeed, courts encourage reverse engineering expressly because of the positive externalities that the process can generate.⁹ Although one may not derive, say, the undisclosed formula for Coca Cola through industrial espionage, deriving it through experimentation in a food lab would be fair game.

By contrast, copyright doctrine treats all copy processes as equally suspect. It doesn't matter how laborious, how skillful, how expensive, or how edifying the defendant's method was. So long as the end product looks substantially similar to the original, the means of copying are irrelevant.¹⁰ Consider, for example, the 200 photographers who descended on Yosemite National Park on September 15, 2005, hoping to recreate Ansel Adams'

- 6. E.I. duPont deNemours & Co. v. Christopher, 431 F.2d 1012, 1016 (5th Cir. 1970); Unif. Trade Secrets Act § 1 (amended 1985), 14 U.L.A. 437 (1990); [hereinafter "UTSA"]; RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40(a) (1995); RESTATEMENT (FIRST) OF TORTS § 759 (1939).
- 7. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 43 cmt c.
- 8. See Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 476 (1974) (observing that trade secret law "does not offer protection against discovery by . . . so called reverse engineering, that is by starting with the known product and working backward to divine the process which aided in its development or manufacture"); Chicago Lock Co. v. Fanberg, 676 F.2d 400 (9th Cir. 1982) (holding that publishing key codes for locks did not constitute trade secret misappropriation because the codes had been acquired through reverse engineering).
- 9. See Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 160 (1989) (praising reverse engineering as "an essential part of innovation" that "often leads to significant advances in technology"); Rockwell Graphic Sys. v. DEV Indus., 925 F.2d 174, 178 (7th Cir. 1991) (noting that reverse engineering is a proper means of deducing another's trade secret because it "involves the use of technical skills that we want to encourage").
- 10. See, e.g., Whelan Assocs. v. Jaslow Dental Laboratory, Inc., 797 F.2d 1222, 1237 (3d Cir. 1986) ("[T]he fact that it will take a great deal of effort to copy a copyrighted work does not mean that the copier is not a copyright infringer. The issue in a copyrighted case is simply whether the copyright holder's expression has been copied, not how difficult it was to do the copying."); Dan. L. Burk, *Method and Madness in Copyright Law*, 2007 UTAH L. REV. 587, 599 (observing that by focusing on products, the Copyright Act may "protect[] a suite of processes, as any process that reproduces that particular painting or soundtrack is precluded by copyright, whether the process is painstakingly reproducing the Picasso image by hand or whether the process is simply scanning and printing the image"). For further discussion, see section I.B *infra*.

iconic photograph, *Autumn Moon*.¹¹ Astronomers had previously determined the exact location, date, and time at which Adams had taken the photograph fifty-seven years earlier.¹² For a four-minute interval that comes around only once every nineteen years, the moon returned to the same sky location in the same phase, enabling skilled photographers to replicate Adams's shot.¹³ Does that backstory distinguish the recreated photographs from a quick digital duplicate? Not according to black-letter copyright doctrine. Any of these new photographs sufficiently similar to Adams's original would be just as problematic. The same goes for repainting a portrait by hand¹⁴ or even refilming an entire feature-length motion picture shot for shot.¹⁵

The divergence between these two branches of law highlights a system design choice that's been hiding in plain sight. Whenever IP policymakers seek to regulate copying, they can either focus only on its ends or also on its means. But there hasn't yet been much deliberation about that choice. IP scholarship tends to emphasize which products are made more than how they are made.¹⁶ To the extent that it has examined the defendant's process,

11. See Roger W. Sinnott, *An Ansel Adams Encore*, SKY & TELESCOPE, Sept. 20, 2005.

12. *Id.*

13. *Id.*

14. See *infra* text accompanying notes 165–167.

15. See *infra* text accompanying notes 160–164. I focus here on graphic and audiovisual works because, as I explain in Part III, they're the most likely to be affected by my proposal. With literary works, no copy process will likely offer significant benefits over any other. With dramatic works, whose marketability depends on live performance, even laborious copy processes will threaten the owner's ability to recoup investments. And with sound recordings, the existing compulsory license under 17 U.S.C. § 115 permits recreations already.

16. Welfarists' emphasis on end products encompasses both sheer quantity of new works, e.g., Jeanne C. Fromer, *An Information Theory of Copyright Law*, 64 EMORY L.J. 71, 75 (2014) ("Most utilitarians understand social welfare to be maximized—in the context of copyright law—by the creation of ever more artistic works."), and works of particular social value, e.g., Michael Abramowicz, *An Industrial Organization Approach to Copyright Law*, 46 WM. & MARY L. REV. 35, 37 (2004) (advancing a product-differentiation theory of copyright scope in which "[t]he importance of incentives to produce new works is less significant when the number of existing works and the chance that a new work will be largely redundant are greater"); Fromer, *supra*, at 84 (using information theory to identify what kinds of works the copyright system should promote); Robert P. Merges, *Essay, The Concept of Property in the Digital Era*, 45 Hous. L. Rev. 1239, 1267 (2009) (defending copyright's tradeoff in which "the cost of premium creative works . . . is a slight reduction in the volume of amateur works"). Cf. Sean M. O'Connor, *The Central Role of Law as a Meta Method in Creativity and Entrepreneurship*, in *CREATIVITY, LAW AND ENTREPRENEURSHIP* 87, 87 (Shubha Gosh & Robin Paul Malloy eds., 2011) (lamenting IP scholarship's "unfortunate fixation on artifacts as the locus of human ingenuity," which overlooks the methods through which those artifacts are produced).

it has concentrated on the question of whether copying should be an element of infringement to begin with. Copyright and trade secret law say yes, patent law says no, and observers debate the difference.¹⁷ I don't intend here to make inroads into that already rich discussion. But there remains a follow-up question left largely understudied.¹⁸ Once one decides that copying does matter, as our copyright and trade secret regimes have, there still remains a policy question as to whether the manner of copying should matter along with it.

In this Article, I argue that it should. Copyright doctrine ought to borrow a page from trade secrecy doctrine by factoring the defendant's copying process into the infringement analysis. The scope of copyright protection has expanded as the cheapest available form of copying has grown ever cheaper. But not every copyist wants the cheapest method—some want to learn how to do it the hard way, others seek to tap a market that prizes labor-intensive recreations, and still others may prefer a difficult process for its expressive value. An infringement doctrine that looks only to the cheapest common denominator will unnecessarily sweep in copying that threatens no market harm to the owner. Moreover, from the consumer's perspective, a second comer's recreation of a familiar work is by definition something that the original creator cannot provide. Audiences celebrate the act of replication from professional appropriation art¹⁹ to amateur videos on YouTube.²⁰ In these contexts, handmade copying can become its own act of

17. See, e.g., Oskar Liivak, *Rethinking the Concept of Exclusion in Patent Law*, 98 GEO. L.J. 1643 (2010); Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 528 (2004); Stephen M. Maurer & Suzanne Scotchmer, *The Independent Invention Defence in Intellectual Property*, 69 ECONOMICA 535 (2002); Robert P. Merges, *A Few Kind Words for Absolute Infringement Liability in Patent Law*, Working Paper, July 16, 2014, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2464756; Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475 (2006).

18. An important exception is Pamela Samuelson and Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575 (2002). Samuelson and Scotchmer focus on reverse engineering in technological fields like software and semiconductors. As I argue here, some expressive fields not only implicate many of Samuelson and Scotchmer's economic insights, but even invite another set of process distinctions above and beyond the ones they identify. See *infra* Part II.

19. See, e.g., Mike Bidlo, in 1 THE GROVE ENCYCLOPEDIA OF AMERICAN ART 266 (Joan Marter ed., 2011); Nadine Rubin Nathan, *Asked and Answered: Mike Bidlo*, T MAG. (July 2, 2010, 12:43 PM), <http://tmagazine.blogs.nytimes.com/2010/07/02/asked-answered-mike-bidlo/> (discussing Bidlo's "dead ringers" for Warhol's famous Brillo boxes and other "exact replicas").

20. See, e.g., Tiffany Lee, *Beyoncé Gives Props To 16-Year-Old's Shot-By-Shot "Countdown" Cover Video Starring—A Snuggie!*, YAHOO! MUSIC, July 23, 2012, <https://www.yahoo.com/music/bp/beyonce-gives-props-flawless-shot-shot-countdown->

performance in a way that quick, digital copying cannot. It's the audience's loss if copyright law inhibits those performances by grouping them together with mechanical duplications. Finally, as a number of commentators have already acknowledged,²¹ learning-by-doing often requires replicating others' successes. Copying today can be great training for creating tomorrow. But this educational spillover is more likely to emerge from hands-on involvement than from an automated process that the user doesn't understand. Discriminating in favor of productive copy processes thus offers a novel way to promote the development of creative skills without significantly undermining the upstream creator's incentives.

Copyright's indifference to the defendant's process likely persists on the strength of the trope that core copyrightable works like art, music, and film reveal their relevant know-how to the world as soon as they're published.²² If disclosure were instantaneous and automatic, then distinctions between copy processes would indeed be trivial.²³ But this account of copyrightable works is incomplete. To be sure, artistic expression readily discloses the information necessary for mechanical *duplication*. Obtaining a new copy of the latest Hollywood blockbuster or top-40 pop song is often just a few clicks away. Nevertheless, that expression often does not so readily disclose all the information necessary for *recreation* from scratch. Recreating a complicated expressive work can be as technically challenging as recreating a

cover-182329262.html (describing a sixteen-year-old boy's "mind-bogglingly accurate remake" of a Beyoncé music video). As of this writing, the remake has attracted over 2.7 million views. KKpalmer1000, *Countdown (Snuggie Version) [Comparison]*, YOUTUBE, July 9, 2012, <https://www.youtube.com/watch?v=w4aiwTkDwCY>.

21. See *infra* section II.C.

22. See, e.g., Dotan Oliar & Christopher Sprigman, *There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy*, 94 VA. L. REV. 1787, 1832 (2008) (commenting that within the copyright paradigm, "the information the work embodies is clear on its face"); J.H. Reichman, *Computer Programs as Applied Scientific Know-How: Implications of Copyright Protection for Commercialized University Research*, 42 VAND. L. REV. 639, 660 (1989) (citing the "artistic work" as the archetype of an informational product that "tends to bear its know-how on its face" and therefore is "exposed to instant predation when successful and is likely to enjoy zero lead time after being launched on the market"); Samuelson & Scotchmer, *supra* note 18, at 1585 ("The artistic and literary works [copyright] law traditionally protected did not need to be reverse-engineered to be understood. Books, paintings, and the like bear the know-how they contain on the face of the commercial product sold in the marketplace. To access this information, one can simply read or analyze the work.").

23. See WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 370 (2003) ("[F]rom an economic standpoint there is little distinction between *really* cheap reverse engineering on the one hand and piracy on the other.").

complicated industrial device. Once duplications and full-fledged recreations are disaggregated, many expressive works start to look more like secrets.

Fortunately, getting courts to consider process in copyright cases may not be as far-fetched as the doctrine suggests. Courts sometimes subtly invoke the defendant's process when ostensibly assessing the propriety of the defendant's product. While these decisions are on the right track, it's time to bring process out into the open. Copyright doctrine could be both more descriptively transparent and more normatively attractive by expressly looking beyond the face of a copy and asking how it got there.

The Article proceeds in three parts. Part I begins by describing the different ways that black-letter copyright and trade secrecy doctrines approach the defendant's copying process. In Part II, I offer a framework for evaluating different processes' welfare implications. I make the case that copyrighted works are subject to many of the same justifications for process sensitivity as trade secrets. In Part III, I argue that courts could work that sensitivity into copyright adjudication through the fair use doctrine without any legislative intervention and likely at a manageable marginal evidentiary cost. I close by offering a few rough recommendations for how courts might apply this factor in fair use cases.

I. COPY PROCESS IN IP DOCTRINE

Should infringement liability focus solely on the defendant's product or also on her process? The question can be broken down into two issues. Policymakers first need to decide whether to distinguish between imitators and independent creators. A regime that focuses on product alone wouldn't care whether the defendant was a slavish copyist or instead an innocent developer haplessly unaware that someone else had already beaten him to the punch. This decision is IP's first question of process sensitivity.

If only the product counts, that's the end of the matter. But if liability requires copying, it invites a second question: whether all copy processes should be weighted equally in the infringement analysis. Does infringement doctrine ask only whether the plaintiff's work was copied, or does it also ask how it was copied?

Each IP regime offers a different model, summarized below in Table 1.²⁴

24. The major IP subfield missing from my scheme is trademark law. I don't focus on trademarks in this Article because, unlike the other regimes that center on promoting innovation and creativity, trademarks' traditional purpose is reducing consumer confusion. Given this aim, though, it should be unsurprising that trademark infringement does not require copying. A confusing mark will remain confusing no matter how it is produced. As the Second Circuit recently noted:

Patent law focuses exclusively on product. Anyone who exploits a patented invention without authorization, even one who's never seen the patented invention before, is an infringer.²⁵ Whether one copied, let alone how one copied, is irrelevant.²⁶ At the other extreme lies trade secrecy. To begin with, only copying counts.²⁷ If I happen to develop the same algorithm that you have taken pains to keep secret, the law will not intervene. On top of that, only certain kinds of copying count. Trade secret law distinguishes between the copyists who use proper means and those who don't. "It is the employment of improper means to procure the trade secret, rather than mere copying or use, which is the basis of liability."²⁸ Copyright doctrine occupies

The trademark system . . . stands in sharp contrast to the copyright system. Copyright, unlike trademark, rewards creativity and originality even if they interfere with the rights of an existing copyright holder. In the copyright system there is a defense to infringement known as "independent creation" The trademark system, unlike the copyright system, aims to prevent consumer confusion even at the expense of a manufacturer's creativity: in trademark, if a branding specialist produces a mark that is identical to one already trademarked by another individual or corporation, he must "go back to the drawing board."

Christian Louboutin S.A. v. Yves Saint Laurent Am. Holdings, Inc., 696 F.3d 206, 224 n.20 (2d Cir. 2012); *see also* William M. Landes & Richard A. Posner, *Trademark Law: An Economic Perspective*, 30 J.L. & ECON. 265, 269–70 (1987). *But see* Mark A. Lemley, *Should Patent Infringement Require Proof of Copying?*, 105 MICH. L. REV. 1525, 1525 n.1 (2007) (noting that, although independent creation is no defense to trademark infringement, many courts still treat the defendant's intent to trade on the goodwill of the protected mark as strong evidence that consumers would likely be confused by the defendant's mark).

25. *See, e.g.*, Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 478 (1974) ("[Patent] protection goes not only to copying the subject matter . . . but also to independent creation."); Allen Eng'g Corp. v. Bartell Indus., 299 F.3d 1336, 1351 (Fed. Cir. 2002) ("[C]opying . . . is of no import on the question of whether the claims of an issued patent are infringed."). For a good example of this strict liability in action, see JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE* 47 (2009) (describing a successful lawsuit against the maker of the BlackBerry mobile device, which had independently invented a wireless e-mail technology that was covered by the plaintiff's existing patents).
26. A caveat here is that copying, though unnecessary for liability, does affect some other doctrines, like willfulness. *See* Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1421, 1428–31 (2009).
27. *Id.* at 1466 ("Trade secret law punishes only misappropriation of one's ideas by another—that is, copying.").
28. Chi. Lock Co. v. Fanberg, 676 F.2d 400, 404 (9th Cir. 1982) (quoting RESTATEMENT (FIRST) OF TORTS, § 757, comment a (1939)); *see also* Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CALIF. L. REV. 241, 250 (1998) ("Trade secret law does not impose liability for mere copying; others are free to inspect a publicly available product or use reverse engineering to glean secret information from it.").

a middle ground. Like a trade secret, a copyright guards only against copying. Independent creation is a complete defense.²⁹ But unlike a trade secret, a copyright is not circumscribed by an “improper means” element. Hornbook law dictates that one means of copying is as good (or bad) as any other.³⁰

	Whether Copied	How Copied
<i>Patents</i>	No	N/A
<i>Copyrights</i>	Yes	No
<i>Trade Secrets</i>	Yes	Yes

TABLE I. RELEVANCE OF DEFENDANT’S PROCESS

This Part surveys the role of process within the two copying regimes, trade secrecy and copyright. Section I.A outlines the longstanding “improper means” limitation on the tort of trade secret misappropriation. Section I.B turns to the copyright system. It first discusses copyright’s doctrinal indifference to the defendant’s appropriation method. It then turns to some inconsistent judicial rhetoric suggesting that at least some courts are influenced by process considerations, whether they explicitly acknowledge it or not.

A. *Trade Secret Law*

Consider this epicurean example. In 2007, a finance manager and cooking enthusiast named Ron Douglas decided to leave Wall Street in order to spend his time deciphering how to recreate famous restaurant dishes.³¹ One of his top goals was cracking the code to KFC’s “Original Recipe” fried chicken, based on an undisclosed blend of herbs and spices that the company had long guarded as a trade secret.³² At one point, he even tried to bribe

29. *E.g.*, *Ty, Inc. v. GMA Accessories, Inc.*, 132 F.3d 1167, 1169 (7th Cir. 1997) (“The Copyright Act forbids only copying; if independent creation results in an identical work, the creator of that work is free to sell it.”); *Alfred Bell & Co. v. Catalda Fine Arts, Inc.*, 191 F.2d 99, 103 (2d Cir. 1951) (noting that a copyright owner “has no right to prevent another from publishing a work identical with his, if not copied from his”).

30. See *supra* note 10.

31. See Jennifer Fermino, *Fryin’ on a Wing and a Prayer*, N.Y. POST, July 20, 2009, <http://nypost.com/2009/07/20/fryin-on-a-wing-a-prayer>; Vidya Rao, *Don’t Tell the Colonel! KFC Recipe May Be Out*, TODAY.COM, July 21, 2009, <http://www.today.com/food/dont-tell-colonel-kfc-recipe-may-be-out-2D80556209>.

32. On the recipe’s status as a trade secret, see *KFC Corp. v. Marion-Kay Co.*, 620 F. Supp. 1160, 1172 (S.D. Ind. 1985); Bruce Schreiner, *KFC Closely Guards Colonel’s Secret Chicken Recipe*, ASSOC. PRESS NEWSWIRES, Jul. 23, 2005.

KFC cooks, but to no avail—the seasoning always arrived prepackaged.³³ Unable to buy the answer, he eventually began tapping into a growing online community of culinary reverse engineers and hired part-time chefs to help him experiment at home. Over a year and several failed attempts later,³⁴ Douglas finally produced a dish that one reporter described as “the best KFC I ever had” and “an exact match with the fast food joint.”³⁵ During interviews, Douglas would recount the “pleasure of knowing that you’ve . . . conquered that recipe and you could make it yourself . . .”³⁶ His replica recipe can now be yours (no conquering required) as part of his New York Times bestselling cookbook.³⁷ Assuming that the reporter’s taste test was accurate and that KFC’s secret is now exposed,³⁸ does KFC have a claim against Douglas for trade secret misappropriation?

Because of Douglas’s copy process, the answer is no. Under the Uniform Trade Secrets Act, some version of which has been enacted in almost every state,³⁹ only those who acquire protected information through “improper means” may be liable.⁴⁰ Similar limitations appear in the Restatement (First) of Tort’s early codification of trade secrecy doctrine⁴¹ as well as in the more recent Restatement (Third) of Unfair Competition.⁴² That rule makes the propriety of the defendant’s process a critical issue in trade secret cases.⁴³ Douglas’s conduct was a form of reverse engineering, which the Supreme Court has called a “fair and honest means . . . [of] starting with the known product and working backward to divine the

33. See Fermino, *supra* note 31; Rao, *supra* note 31.

34. See *Ron Douglas Masters the Secret Recipe for KFC*, SECRET RECIPES FROM RON, May 15, 2011, <http://secretrecipesfromron.blogspot.com/>.

35. Fermino, *supra* note 31.

36. Ron Douglas, *Ron Douglas on Fox and Friends*, YOUTUBE (Aug. 2, 2009), <https://www.youtube.com/watch?v=DCDTq6OOetw> (statement beginning at 3:13).

37. See Ron Douglas, *America’s Most Wanted Recipes* (2009).

38. According to KFC, which has no interest in conceding that the secret’s out, the reporter was mistaken. See Rao, *supra* note 31 (quoting KFC spokesman’s statement, “Plenty of people have tried to duplicate the recipe over the years, but there is still only one place to get authentic Original Recipe Chicken — at a KFC restaurant.”)

39. See *Trade Secrets Act*, UNIF. L. COMM’N, <http://www.uniformlaws.org/Act.aspx?title=Trade+Secrets+Act> (showing the UTSA’s adoption in forty-seven states and the District of Columbia).

40. UTSA § 1.

41. RESTATEMENT (FIRST) OF TORTS § 759 (1939).

42. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40(a) (1995).

43. See, e.g., *Trandes Corp. v. Guy F. Atkinson Co.*, 996 F.2d 655, 660 (4th Cir. 1993) (“Apart from breach of contract, abuse of confidence or impropriety in the means of procurement, trade secrets may be copied as freely as devices or processes which are not secret.”).

process which aided in its development or manufacture.”⁴⁴ Trade secret law considers it perfectly legitimate.⁴⁵ Had Douglas instead learned the secret recipe directly from the employee whom he had tried to bribe—a textbook form of improper means—the result would have been flipped.⁴⁶

Trade secrecy’s discrimination between proper and improper copying methods has a long pedigree. In the 1889 case *Tabor v. Hoffman*,⁴⁷ the New York Court of Appeals remarked that once a medicine is sold to the public, anyone is permitted to use “chemical analysis and a series of experiments, or . . . any other use of the medicine itself aided by his own resources only” in order to “discover the ingredients and their proportions.”⁴⁸ And, the court continued, if through that process the experimenter discovers “the secret of the proprietor, he may use it to any extent that he desires without danger of interference by the courts.”⁴⁹ Since then, courts in trade secret cases have frequently dwelled on the defendant’s process just as much as the defendant’s product.⁵⁰

It might be tempting to label this rule a simple protection against predatory freeriding. Generating valuable information in the first instance can be expensive, while appropriating it can be cheap, so perhaps trade secrecy is simply channeling second comers into shouldering enough cost to preserve the original innovator’s ability to recoup his investment.⁵¹ Sure

44. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974).

45. UTSA § 1 comment (including reverse engineering within a catalog of proper means).

46. See *RESTATEMENT (FIRST) OF TORTS* § 759 cmt. c (1939) (including “bribing or otherwise inducing employees or others to reveal the information in breach of duty” in a catalog of improper means); *see also Liberty Power Corp. v. Katz*, No. 10-CV-1938, 2011 WL 256216, at *5 (E.D.N.Y. Jan. 26, 2011) (finding improper means where the defendants would not have gained access to the trade secret but for a bribe to the plaintiff’s employee).

47. 23 N.E. 12 (N.Y. 1889).

48. *Id.* at 13.

49. *Id.*

50. See, e.g., *Pioneer Hi-Bred Int’l v. Holden Found. Seeds, Inc.*, 35 F.3d 1226, 1238 (8th Cir. 1994) (“[T]he critical inquiry is whether the defendant obtained the secret by ‘improper means.’”) (quoting *RESTATEMENT (FIRST) OF TORTS* § 757(a)); *B.C. Ziegler & Co. v. Ehren*, 414 N.W.2d 48, 53 (Wis. 1987) (holding that obtaining discarded customer lists from a scrap paper dealer was improper means); *Drill Parts & Serv. Co., Inc. v. Joy Mfg. Co.*, 439 So.2d 43 (Ala. 1983) (holding that acquisition of secret engineering diagrams by searching through scrap metal and trash was improper means); *Hurst v. Hughes Tool Co.*, 634 F.2d 895, 897 (5th Cir. 1981) (finding no improper means where the defendant acquired information by asking an inventor questions); *E.I. Du Pont de Nemours & Co. v. United States*, 288 F.2d 904, 911 (Ct. Cl. 1961) (“Anyone is at liberty to discover a particular trade secret by any fair means, as by experimentation or by examination and analysis of a particular product. Moreover, upon discovery the idea may be used with impunity.”)

51. On the importance of first-mover advantage, see *Samuelson & Scotchmer*, *supra* note

enough, some judicial opinions frame the improper means inquiry as a test of the defendant's expenditures.⁵² As one early case put it, the law should not "advantage the competitor who by unfair means . . . obtains the desired knowledge without himself paying the price in labor, money, or machines expended by the discoverer."⁵³ The problem with this account, though, is that trade secret doctrine penalizes even costly and otherwise legal methods of appropriation.⁵⁴ Thus, for example, the Fifth Circuit imposed liability on a competitor that flew a plane over DuPont's still-under-construction methanol plant and photographed its layout—acts that would have been perfectly lawful but for trade secret protection.⁵⁵ Industrial espionage like that can get expensive, particularly where a surveillance arms race ensues between competitors.⁵⁶ Of course, it's not as expensive as conducting the R&D in the first instance (if it were, competitors would have no particular incentive to copy), but the same can be said of legal means like reverse engineering.⁵⁷

Trade secrecy's improper means regime is thus hard to justify on imitation-cost grounds alone. If the innovator's ability to recoup R&D investment is the only thing at stake, it's not obvious why the law would differentiate between costly reverse engineering and equally costly snooping.⁵⁸ Misappropriation doctrine would need only to balance the

18, at 1586.

52. See, e.g., *Lamont v. Vaquillas Energy Lopeno Ltd.*, 421 S.W.3d 198, 215 (Tex. App. 2013) ("Obtaining knowledge of a trade secret without spending time and resources to discover it independently is improper . . .").
53. *A.O. Smith Corp. v. Petroleum Iron Works, Co.*, 73 F.2d 531, 538–39 (6th Cir. 1934).
54. See *RESTATEMENT (THIRD) OF UNFAIR COMPETITION* § 43 comment c (1995). ("The acquisition of a trade secret can be improper even if the means of acquisition are not independently wrongful.").
55. *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012 (5th Cir. 1970).
56. See Douglas Lichtman, *How the Law Responds to Self-Help*, 1 J.L. ECON. & POL'Y 215, 235 (2005) ("[D]o we really believe that DuPont's rival acquiesced, rather than instead looking to rent a faster airplane or an airplane that flies at higher altitudes, two among dozens of adjustments that would have made it more difficult for DuPont to detect the espionage in the first place?"); Bone, *supra* note 28, at 298 ("After *Christopher*, future trade secret owners will expect competitors to fly over their property at higher altitudes and use more sophisticated cameras to reduce the likelihood of detection.").
57. See Benjamin N. Roin, *The Case for Tailoring Patent Awards Based on Time-to-Market*, 61 UCLA L. REV. 672, 731–34 (2014) (describing various costs borne by innovators that reverse engineers may avoid); Samuelson & Scotchmer, *supra* note 18, at 1587 ("[A] reverse engineer will generally spend less time and money to discern . . . know-how than the initial innovator spent in developing it, in part because the reverse engineer is able to avoid wasteful expenditures investigating approaches that do not work, and in part because advances in technology typically reduce the costs of rediscovery over time.").
58. See Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61

defendant's imitation costs against the plaintiff's innovation costs, regardless of the form that the imitation takes.

A more complete explanation looks at the competitor's copy process not just in terms of its private cost but also in terms of its social value. Industrial espionage is wasteful. Sifting through trash and reconstructing shredded documents might give a competitor a hot tip, but eventually the resources devoted to the activity will outweigh the value of the secret information itself. There's little public payoff from cultivating a brigade of expert dumpster divers.⁵⁹ Reverse engineering, by contrast, has an immense teaching function. It incubates useful know-how and reveals opportunities for incremental improvements, benefits that the rest of society reaps. The Supreme Court has called reverse engineering "an essential part of innovation" that often results in new products that "may lead to significant advances in the field."⁶⁰ Similarly, the Seventh Circuit has noted that the improper means doctrine "emphasizes the desirability of encouraging inventive activity by protecting its fruits from efforts at appropriation that are, indeed, sterile wealth-redistributive—not productive—activities."⁶¹ The doctrine privileges reverse engineering because it "involves the use of technical skills that we want to encourage."⁶² Picking up on this theme, a number of scholars have emphasized the positive externalities of steering competitors toward reverse engineering in place of espionage.⁶³ The public

STAN. L. REV. 311, 322 (2008) ("One reading *Christopher's* standard might reasonably wonder, for example, why reverse engineering a chemical, or learning a competitor's prices by walking through their store during business hours, or attempting to predict a competitor's business strategy based on their market behavior, aren't similarly cheap efforts to acquire knowledge that would be expensive to protect. And yet those activities are clearly legal.").

59. Little, but not zero. Government intelligence agencies can always learn from the private sector. Cf. Jacob Aron, *DARPA's Shredder Challenge Solved Two Days Early*, NEW SCIENTIST, Dec. 5, 2011, <http://www.newscientist.com/blogs/onepercent/2011/12/darpas-shredder-challenge-has.html> (describing a Department of Defense challenge in which "9000 teams compet[ed] to reconstruct five shredded documents using a combination of computer science and jigsaw-solving skills").
60. *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141, 160 (1989).
61. *Rockwell Graphic Sys. v. DEV Indus.*, 925 F.2d 174, 178 (7th Cir. 1991).
62. *Id.*
63. See, e.g., Dan Burk, *Muddy Rules for Cyberspace*, 21 CARDOZO L. REV. 121, 174 (1999) ("[W]hen competitors do opt for independent development or reverse engineering, these alternatives channel their investment into socially useful activity—either option develops productive technological or business expertise within the firm, rather than wasteful expertise in industrial espionage."); Jeanne C. Fromer, *A Legal Tangle of Secrets and Disclosures in Trade: Tabor v. Hoffman and Beyond*, in *INTELLECTUAL PROPERTY AT THE EDGE: THE CONTESTED CONTOURS OF IP* (Rochelle C. Dreyfuss & Jane C. Ginsburg eds., 2013) ("[R]equiring third parties to reverse engineer—rather than use the secret directly—might also be helpful to the third parties (and society at large) by teaching

gains more from reverse engineering not just because of the particular products it yields in the short term, but also because of the valuable skills it breeds in the long term.

The law of trade secrets thus reflects the different welfare effects of different copy processes. The improper means doctrine sorts roughly between those appropriation methods that offer enough benefits to pay for themselves and those that don't. It's not enough, trade secret doctrine says, to decide cases looking only at a final product, even when that final product was unabashedly copied from the owner's original work. To understand a copy's value to society, one also needs to look at the history of its creation.

B. Copyright Law

Copyright's treatment of the copy process starts out like trade secrecy's but quickly diverges. Every copyright case, like every trade secret case, commences with the question of whether copying has occurred.⁶⁴ "Two works may be identical in every detail, but, if the alleged infringer created the accused work independently . . . then there is no infringement."⁶⁵ This doctrine allows the Bee Gees to pen *How Deep Is Your Love* despite the song's substantial similarity to a protected work that the band had never before heard.⁶⁶ It allows fashion designer Albert Nipon to create a dress featuring a pattern substantially similar to a protected work that Nipon had never before seen.⁶⁷ And it allows Carnival Cruise Lines to produce a Super Bowl commercial featuring "lingering shots of the sea, characters gazing at the water and . . . a 1962 narration by President John F. Kennedy about humanity's connection to and love for the sea" strongly resembling a freelance film bearing all of those same traits that Carnival had never before viewed (at least so far as anyone can tell).⁶⁸ The moral of each of these

them more about the information, its uses, and further refinements."); LANDES & POSNER, *supra* note 23, at 370 ("[R]everse engineering will often generate knowledge about the product being reverse engineered that will make it possible to improve it or develop or improve other products."); Jerome H. Reichman, *How Trade Secrecy Law Generates a Natural Semicommons of Innovative Know-How*, in THE LAW AND THEORY OF TRADE SECRECY 185 (Rochelle C. Dreyfuss et al. eds., 2011) ("[T]he process of reverse engineering itself, by methodically extracting the innovator's know-how from a given application, tends to generate technical improvements over time, including cost-saving modes of manufacture that reduce prices to consumers.").

64. See *supra* note 29.

65. *Selle v. Gibb*, 741 F.2d 896, 901 (7th Cir. 1984).

66. *Id.* at 901–05.

67. *Cameron Indus. v. Albert Nipon Co.*, 630 F. Supp. 1293 (S.D.N.Y. 1986).

68. Allan Brettman, *Coincidences in Carnival Cruise Line's Super Bowl Ad Catches Attention of Portland Filmmaker*, THE OREGONIAN, Feb. 3, 2015,

examples should already be familiar from trade secrecy: if there is no copying, there is no claim.

Once independent creation can be ruled out, however, copy process seems to disappear from the picture. Infringement liability doesn't hinge on the ease of copying.⁶⁹ As one court tidily put it, "[t]he issue in a copyright[] case is simply whether the copyright holder's expression has been copied, not how difficult it was to do the copying."⁷⁰ An unauthorized copy is supposed to be equally infringing whether it was spat out by a machine or painstakingly produced by hand.⁷¹ According to the leading copyright treatise, it is "fundamental" that "copyright in a work protects against unauthorized copying not only in the original medium in which the work was produced, but also in any other medium as well. Thus copyright in a photograph will preclude unauthorized copying by drawing or in any other form, as well as by photographic reproduction."⁷² Copyright doctrine cares about these processes' observable artifacts rather than about the processes themselves.

A good example of copy process's black-letter irrelevance is *Time, Inc. v. Bernard Geis Associates*.⁷³ In that case, an author writing a book on President Kennedy's assassination sought a license to include a series of reproduced frames from the famous Zapruder film. The copyright owner refused. "Doubtless having in mind the probability of infringement," the court surmised, the author and his publisher hired a graphic artist to make charcoal drawings of the individual frames rather than reproducing them photographically.⁷⁴ Although the court ultimately held that reproducing these shots for the purpose of historical commentary was a fair use, it went out of its way to brush aside the act of manual recreation. The artist's "so-called 'sketches,'" according to the court, "[we]re in fact copies of the

http://www.oregonlive.com/playbooksprofits/index.ssf/2015/02/coincidences_in_carnival_cruis.html.

69. See *supra* note 10; cf. LANDES & POSNER, *supra* note 23, at 370 ("A law that forbade deliberately appropriating trade secrets by either theft or reverse engineering would be closely analogous to copyright law, which penalizes copying.").
70. *Whelan Assocs. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1237 (3d Cir. 1986); see also *Sturdza v. United Arab Emirates*, 281 F.3d 1287, 1300 (D.C. Cir. 2002) (observing that copyright's inquiry into unlawful copying turns on "whether [the defendant's] end product . . . is substantially similar to [the plaintiff's], not how it got that way"); *Lasercomb Am., Inc. v. Holiday Steele Rule Die Corp.*, 656 F. Supp. 612, 616 (M.D.N.C. 1987) (rejecting defendant's argument that its "very laborious and expensive process" should weigh against infringement liability).
71. See *Burk, supra* note 10, at 599.
72. 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT 2.08[E] (2014).
73. 293 F. Supp. 130 (S.D.N.Y. 1968).
74. *Id.* at 138.

copyrighted film. That they were done in charcoal by an ‘artist’ is of no moment.”⁷⁵

But for the backstop of fair use—which had everything to do with authorial purpose and nothing to do with authorial process—the defendants would have been liable for infringement. Indeed, that precise outcome occurred in a later case that involved similar manual reproduction without the commentary on historical events. In *Pekers v. Masters Collection*,⁷⁶ the defendant was a retail company in the business of producing replicas of famous oil paintings, at least some of which remained under copyright. The company would first apply acrylic paint to poster-sized prints and then, once the acrylic had absorbed the image from the poster ink, mount it on a canvas.⁷⁷ Next, “specially trained artists” would apply oil paint to the canvas to match the brush strokes of the original as closely as possible.⁷⁸ Finally, the company would apply a thin veneer of protective varnish and frame the piece, leaving a final product that looked and felt, in the defendant’s own words, “virtually indistinguishable from the original oil painting masterpiece.”⁷⁹ The court held that these reproductions infringed the owner’s copyright, notwithstanding the considerable labor that the defendant had to invest in order to make a convincing replica.⁸⁰

The *Time* and *Pekers* decisions seem to stand for the proposition that a copyist’s process does not affect the infringement inquiry. To determine liability, copyright primarily asks “what” questions—in large part, what elements of the copyrighted work the defendant copied. The fair use doctrine tacks on a “why” question, inquiring into the defendant’s reason for making the copy.⁸¹ These two sets of questions, what and why, cover the entire landscape of the infringement inquiry. Copyright doctrine appears uninterested in asking “how.”⁸²

75. *Id.* at 144.

76. 96 F. Supp. 2d 216 (E.D.N.Y. 2000).

77. *Id.* at 217.

78. *Id.* at 218.

79. *Id.* at 219.

80. *Id.* at 220.

81. See 17 U.S.C. § 107(1); *Blanch v. Koons*, 467 F.3d 244, 252 (2d Cir. 2006) (finding fair use because the defendant’s “purposes in using [the copyright owner’s] image are sharply different from [the owner’s] goals in creating it”); R. Anthony Reese, *Essay, Transformativeness and the Derivative Work Right*, 31 COLUM. J.L. & ARTS 467, 467 (2008) (concluding based on review of appellate decisions that “in evaluating transformativeness the courts focus more on the purpose of a defendant’s use than on any alteration the defendant has made to the content of the plaintiff’s work”).

82. To be sure, fair use does immunize some copying in the course of reverse engineering software, but only where it is an intermediate step toward developing an end product that isn’t substantially similar to the original. The focus, in other words, remains on

Nevertheless, the doctrine doesn't fully capture the reality of all copyright litigation. One of the most prominent copyright cases of the last decade, *Fairey v. Associated Press*,⁸³ featured an extensive dispute over copy process. Graphic artist Shepard Fairey used an unlicensed AP photograph of Barack Obama in creating the ubiquitous image from the 2008 presidential campaign popularly known as the "Hope Poster."⁸⁴ Fairey filed a lawsuit seeking a declaratory judgment of non-infringement. Although the case ultimately settled before the court issued a definitive ruling, Fairey argued throughout the litigation that the elements he copied from the photograph weren't copyrightable expression and that, even if they were, the copying would still be permitted as fair use.⁸⁵ Neither argument ought to implicate copy process. Even so, Fairey fought to prove that his method of converting the photograph into his poster image required great expertise and many hours of labor hand-cutting rubylith films, rather than a simple Photoshop job that the AP alleged to be "a form of computerized 'paint by numbers.'"⁸⁶ Consistent with conventional doctrine, the AP argued that the entire factual dispute was immaterial.⁸⁷ At the same time, it continued to stress its version

what the final output looks like, regardless of the process through which it's produced. See *Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1528 (9th Cir. 1992) (permitting a reverse engineer to copy software elements while in the process of developing interoperable programs but noting that "[o]ur conclusion does not, of course, insulate [the reverse engineer] from a claim of copyright infringement with respect to its finished products"); Andrew Johnson-Laird, *Software Reverse Engineering in the Real World*, 19 U. DAYTON L. REV. 843, 845 n.8 (1994) (observing that *Sega* doesn't allow "using software reverse engineering to produce infringing copies of the original software. Surely an infringing computer program would be viewed as infringing by a court without regard to the process by which it was produced.").

83. No. 09 Civ. 1123 (S.D.N.Y.). On the case's notoriety, see Eva E. Subotnik, *Originality Proxies: Toward a Theory of Copyright and Creativity*, 76 BROOK. L. REV. 1487, 1487 (2011) (introducing the *Fairey* litigation as "[t]he recent copyright 'case' célèbre").
84. For background on the case, see generally William W. Fisher III et al., *Reflections on the Hope Poster Case*, 25 HARV. J.L. & TECH. 243 (2012).
85. *Id.* at 257.
86. The Associated Press's First Amended Answer, Affirmative Defenses and Counterclaims ¶ 134, *Fairey v. Assoc. Press*, No. 09 Civ. 1123 (S.D.N.Y. Nov. 12, 2009); *see also* Fisher et al., *supra* note 84, at 252 n.39.
87. *See, e.g.*, AP's Motion in Limine No. 3 to Exclude Evidence of Fairey's Use of Rubylith, *Fairey v. Assoc. Press*, No. 09 Civ. 1123 (S.D.N.Y. Mar. 10, 2011) ("The particular process whereby Mr. Fairey copied the Obama Photo—completely digitally or partially digitally and partially using Rubylith—is totally irrelevant because copyright law simply does not take into account 'sweat of the brow.'"); Memorandum of Law in Support of AP's Motion in Limine to Preclude Fairey's Expert Witnesses, *Fairey v. Assoc. Press*, No. 09 Civ. 1123 (S.D.N.Y. Feb. 25, 2011) ("[O]pinions about how Shepard Fairey may have made the Obama Image are not relevant to the issue of whether the Obama Image is substantially similar to the Obama Photograph. Under the Second Circuit's standard, the impression that a copy leaves with the ordinary lay observer—not the process that

of the facts: Fairey's copying was trivially easy to do.⁸⁸

If copyright doctrine says the copy process doesn't matter, why litigate the issue? Perhaps because the labor involved in an act of copying can sway jurors' minds. To begin with, hardworking copyists might seem more sympathetic than do their stereotypically freeriding counterparts. Moreover, those labor-intensive copies might strike viewers as more expressively compelling than cut-and-paste digital reproductions (more on this below).⁸⁹ Either effect would seem to place a thumb on the defendant's side of the scale.⁹⁰

In fact, juries may not be the only decision-makers receptive to such arguments. Judges, too, sometimes subtly invoke the defendant's process when ostensibly assessing the propriety of the defendant's product—despite process's black-letter irrelevance. In *Campbell v. Acuff-Rose Music, Inc.*, the Supreme Court's most recent foray into the fair use doctrine, the Court separated between fair users and the paradigmatically wrongful copyists who copy in order to "avoid the drudgery in working up something fresh."⁹¹ The dichotomy between the freeriding copyist and the hardworking original creator has a long and familiar history in copyright jurisprudence,⁹² but *Campbell*'s rhetoric suggests the dichotomy runs even deeper. Drudgery doesn't just distinguish creators from copyists; it also separates *among* copyists. The fair use analysis involves, as the Second Circuit put it in

resulted in the creation of the work—is the touchstone for determining infringement.”).

88. Fisher, *supra* note 84, at 252–53 n.39 (summarizing deposition testimony in which AP's expert witness "contended that he himself was able to create an approximation of the Hope Poster using an 'all-digital process' that mimicked the traditional rubylith-based technique but performed all of the steps on the computer—and that, moreover, [he] was able to do so in only ninety minutes").
89. See *infra* section II.B.
90. At least one commentator has made a similar argument. See Bruce Boyden, *The Obama "Hope" Poster Case—How Was the Poster Created?*, MARQUETTE UNIV. L. SCH. FACULTY BLOG, Feb. 27, 2009, <http://law.marquette.edu/facultyblog/2009/02/27/the-obama-%E2%80%9Chope%E2%80%9D-poster-case-%E2%80%94-how-was-the-poster-created/> ("[A]tmospherically . . . it just seems easier to credit a claim of substantial similarity, or conversely harder to credit a claim of fair use, if Fairey copied the original and altered it down, rather than creating a similar-looking version from the bottom up. . . . When it comes to making a fair use argument, there is less intuition pull in favor of a 'mere copyist' who makes allegedly trivial alterations to a work of art using a computer program.").
91. 510 U.S. 569, 580 (1994).
92. See, e.g., Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1033 (2005) (describing courts' and commentators' "almost obsessive preoccupation with identifying and rooting out that great evil of the modern economic world—free riding").

another case, “an inquiry into the infringer’s creative effort.”⁹³

One can find similar narratives across a number of judicial opinions. Take, for example, *Leibovitz v. Paramount Pictures Corp.*,⁹⁴ in which the Second Circuit found fair use where an advertisement for the film *Naked Gun 33 1/3* mimicked Annie Leibovitz’s famous photograph of an unclothed and seven-months-pregnant Demi Moore. The court permitted the advertisement, which featured male comedian Leslie Nielsen’s head superimposed onto a female body, as a parody of Leibovitz’s work.⁹⁵ That’s a product rationale, not a process one, and it’s the rationale for which the case is always cited. But seldom noticed is the court’s discussion of the creative labors that the defendant took to evoke the original: “[R]ather than mechanically copying the portion of the original Leibovitz photograph depicting Moore’s body, Paramount commissioned another photograph to be taken of a nude, pregnant woman, similarly posed. Great effort was made to ensure that the photograph resembled in meticulous detail the one taken by Leibovitz.”⁹⁶ If process doesn’t figure into the analysis of this “meticulous[ly] detail[ed]” resemblance, there should be no difference between the defendant’s from-scratch recreation and the sort of “mechanical copying” from which the court took pains to distance it. The court’s framing of the defendant’s process as the opposite of mechanical copying suggests that the process was significant for (even if not decisive of) its case.

Likewise, in *Fuentes v. Mega Media Holdings, Inc.*,⁹⁷ the court held that fair use protected a video journalist who used copyrighted footage as part of commentary that, the court stressed, “was no mere cut-and-paste job.”⁹⁸ The defendant “did much more than merely re-run the videos in a different context,” going so far as to “select[] which scenes out of the hours of video they would broadcast during the show on each particular night and invite[] guests onto the show that could (and did) provide insight into and commentary on those scenes.”⁹⁹ As in *Leibovitz*, it’s not clear why any of these facts would matter in a product-centered copyright regime. And yet *Fuentes* tellingly falls back on how much the defendant did, not just what he produced. Other cases dealing with research and journalism take a similar

93. *Maxtone-Graham v. Burtchaell*, 803 F.2d 1253, 1259–60 (2d Cir. 1986).

94. 137 F.3d 109 (2d Cir. 1998).

95. *Id.* at 114–15.

96. *Id.* at 111.

97. No. 09 Civ. 22979, 2011 WL 2601356 (S.D. Fla. June 9, 2011), *report and recommendation adopted by* 2011 WL 2609550 (S.D. Fla. June 30, 2011).

98. *Id.* at *9.

99. *Id.* at *10.

approach.¹⁰⁰

Contrast the *Fuentes* and *Leibovitz* defendants with the defendant in *Dr. Seuss Enterprises, L.P. v. Penguin Books USA, Inc.*¹⁰¹ There, the defendants wrote a send-up of the O.J. Simpson murder trial in the style of Dr. Seuss's *The Cat in the Hat*.¹⁰² Rejecting their fair use defense, the Ninth Circuit invoked the Supreme Court's "drudgery" language.¹⁰³ The satire, according to the court, evinced "no effort to create a transformative work."¹⁰⁴ Here again, the court is speaking in terms of what the producer did rather than what the product is.

Even beyond fair use, the copy process might be playing an unacknowledged role. In *Bridgeport Music, Inc. v. Dimension Films*,¹⁰⁵ the Sixth Circuit rejected a *de minimis* defense for music sampling on the rationale that "if an artist wants to incorporate a 'riff' from another work in his or her recording, he is free to duplicate the sound of that 'riff' in the studio."¹⁰⁶ Like the fair use cases, *Bridgeport* emphasizes an implicit narrative that handmade recreations are privileged while mechanical reproductions are not. Better to work for your copies.

In these cases, copy process may be lurking beneath copyright's doctrinal surface after all. If the judicial rhetoric finds no foothold in contemporary doctrine, it can at least claim some fidelity to copyright's early history. Students in every IP course learn that an author's sheer investment and effort, or "sweat of the brow" in copyright parlance, are insufficient for earning copyright protection.¹⁰⁷ But although sweat of the brow is today a

100. See *New Era Publ'ns Int'l, ApS v. Henry Holt & Co., Inc.*, 695 F. Supp. 1493, 1525 (S.D.N.Y. 1988), *aff'd*, 873 F.2d 576 (2d Cir. 1989) (finding fair use where an author quoted copyrighted material not to engage in "opportunistic free riding" but rather to produce a "laboriously researched" biography); *Harper & Row Publ'ns, Inc. v. Nation Enters.*, 723 F.2d 195, 214 (2d Cir. 1983) (Meskill, J., dissenting), *rev'd*, 471 U.S. 539 (1985) (taking the position, ultimately vindicated by the Supreme Court's reversal of the majority's decision, that the copying at issue should be distinguished from prior fair use findings because the defendant had not done "a substantial amount of original research").

101. 109 F.3d 1394 (9th Cir. 1997).

102. *Id.* at 1396.

103. *Id.* at 1401 (quoting *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 580 (1994)).

104. *Id.* (emphasis added).

105. 410 F.3d 792 (6th Cir. 2005).

106. *Id.* at 801.

107. *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991); *Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc.*, 528 F.3d 1258, 1268 (10th Cir. 2008) ("[I]n assessing the originality of a work for which copyright protection is sought, we look only at the final product, not the process, and the fact that intensive, skillful, and even creative labor is invested in the process of creating a product does not guarantee its copyrightability."); *Mannion v. Coors Brewing Co.*, 377 F. Supp. 2d 444, 451

discredited copyrightability issue focused on the plaintiff, it actually began as a legitimate infringement issue focused on the defendant.¹⁰⁸ Prior to the twentieth century, courts asked whether a second comer bestowed enough “new toil and talent”¹⁰⁹ or “care and pains”¹¹⁰ to avoid infringement. The currency of the realm was the defendant’s “exercise of skill, or labor, or expense.”¹¹¹ Indeed, the case that originated the fair use doctrine in U.S. law, *Folsom v. Marsh*,¹¹² contrasted the fair user’s “intellectual labor and judgment” with the infringer’s “facile use of scissors.”¹¹³

More recently, the same judicial impulse can be found in cases addressing the compulsory license for musical compositions under the now-superseded 1909 Copyright Act. That statute provided that once a composer had licensed the recording of a musical work, anyone else could make a “similar use” of that work by paying the statutorily-determined royalty.¹¹⁴ Then, as today, the compulsory license permitted cover songs—that is, songs re-recorded by second comers. But in the 1970s, defendants in several cases tried to invoke the compulsory license to allow even the unauthorized duplication of existing sound recordings themselves. Just as in *Bridgeport* thirty years later, courts rejected the argument out of hand. The Seventh Circuit, for example, determined that “duplicating a recording is not similar to making a recording of the composition. The duplicator does not take the composition as ‘raw material’ and go through the creative and financial steps of producing a recording.”¹¹⁵ Similarly, the Third Circuit offered this

(S.D.N.Y. 2005) (“Protection derives from the features of the work itself, not the effort that goes into it.”).

108. See Robert A. Gorman, *Copyright Protection for the Collection and Representation of Facts*, 76 HARV. L. REV. 1569, 1573 (1963) (“[C]ourts [applying the sweat-of-the-brow doctrine] were not speaking of requisites to procuring copyright; their language was not meant to be descriptive of the sort of efforts that would achieve the minimum ‘originality’ to be protected by law. The courts were merely stating that the defendant in the cases before them had not engaged in enough original work to prevent a finding of infringement.”); see also Jane C. Ginsburg, *Creation and Commercial Value: Copyright Protection of Works of Information*, 90 COLUM. L. REV. 1865, 1880 (1990) (discussing early courts’ “longstanding practice of protecting information, qua information, when a rival engaged in what the courts perceived to be inadequate effort of his own”); Matthew Sag, *The Prehistory of Fair Use*, 76 BROOK. L. REV. 1371, 1402–03 (2011) (noting nineteenth-century cases’ emphasis on the defendant’s intellectual labor).
109. *Webb v. Powers*, 29 F. Cas. 511, 517 (C.C.D. Mass. 1847).
110. *Burnett v. Chetwood*, (1721) 35 Eng. Rep. 1008 (Ch.) 1009; 2 Mer. 441, 442.
111. *Emerson v. Davies*, 8 Fed. Cas. 615, 619 (C.C.D. Mass. 1845).
112. 9 F. Cas. 342 (C.C.D. Mass. 1841).
113. *Id.* at 345.
114. 17 U.S.C. § 1(e) (1970).
115. *Heilman v. Bell*, 583 F.2d 373, 376 (7th Cir. 1978).

process-focused explanation:

The use to which the original licensee put the composer's work, i.e., the musical score, was much more elaborate, involving as it did the preparation of an arrangement from the written composition and its performance by musicians and vocalists. The mere duplication of a recording by the pirate is not the same as, or 'similar' to, the efforts made by the original licensee in utilizing the characters on a piece of paper as the basic plan for producing harmonious sounds.¹¹⁶

Highlighting the process/product distinction even more starkly, the Fifth Circuit concluded that mechanical duplication was beyond the compulsory license's scope because "[t]he end product, of course, is not only 'similar' but virtually indistinguishable; the process, however, is completely dissimilar."¹¹⁷ Similar decisions from that era abound.¹¹⁸ Modern practitioners may be familiar with the version of this rule that is now codified in the current Copyright Act.¹¹⁹ It was the courts, though, that first articulated the principle that the process of recreating sound recordings in the studio should

116. *Jondora Music Publ'g Co. v. Melody Recordings, Inc.*, 506 F.2d 392, 395 (3d Cir. 1974).

117. *Fame Publ'g Co. v. Ala. Custom Tape, Inc.*, 507 F.2d 667, 669-70 (5th Cir. 1975).

118. *See, e.g.*, *Edwards B. Marks Music Corp. v. Colo. Magnetics, Inc.*, 497 F.2d 285, 288 (10th Cir. 1974) ("Magnetics may make its own arrangement, hire its own musicians and artists, and then record. It does not mean that Magnetics may use the composer's copyrighted work by duplicating and copying the record of a licensed recording company. Such, in our view, is not a similar use."); *United States v. Bodin*, 375 F. Supp. 1265, 1267 (W.D. Okl. 1974) ("The statute, as amended, places no impediment to the defendants collecting their own talent and technicians to imitate on a new tape or record a performance embodied on the protected sound recording."); *Fame Publ'g Co. v. S & S Distrib., Inc.*, 363 F. Supp. 984, 988 (N.D. Ala. 1973) (holding that duplicating sound recordings was an "identical use," rather than the statutorily required "similar use," and that consequently "[a]nyone who seeks to rely on the compulsory license premium must hire some musicians, take them into a studio and make his own recording"); *see also Aeolian Co. v. Royal Music Roll Co.*, 196 F. 926, 927 (W.D.N.Y. 1912) (holding that the statutory license did not permit a player piano-roll manufacturer to "avail himself of the skill and labor of the original manufacturer of the perforated roll or record by copying or duplicating the same," and that statutory licensees must instead "resort to the copyrighted composition or sheet music, and not pirate the work of a competitor who has made an original perforated roll").

119. *See* 17 U.S.C. § 115(a)(1) (conditioning the statutory license in cases of mechanical duplication, but not in cases of recreation from scratch, on receiving permission from the owner of the separate copyright in the duplicated sound recording); H.R. Rep. No. 94-1476, 94th Cong., 2d Sess. 108 (1976) (noting that under § 115, "[a] person is not entitled to a compulsory license of copyrighted musical works for the purpose of making an unauthorized duplication of a musical sound recording originally developed and produced by another").

be legally favored over the process of mechanically duplicating them.

Thus, the notion that copyright doctrine would assess the defendant's labor is hardly unprecedented. Despite this historical lineage, however, the present-day role of copy process remains frustratingly subterranean. Whatever influence the defendant's appropriation methods might have behind the scenes, the black-letter infringement rule continues to insist that process is beside the point.

If the doctrine and the rhetoric can't both be right, there are two possible ways to proceed. Courts could cut back on the process talk, confirming that copyright cases are decided based on end products just as the doctrine intends. Or they could embrace that same talk by moving closer to trade secrecy and expressly incorporating the copy process into the infringement analysis.¹²⁰ How to make that decision is the subject of the next Part.

II. HOW TO EVALUATE COPY PROCESS

Employing a particular copy process affects multiple constituencies, from creators to copiers to consumers. Some of those effects might be more

120. One could imagine a third possibility: that the status quo actually enhances welfare through a form of acoustic separation between on-the-books doctrine and frequent judicial practice. *See generally* Meir Dan-Cohen, *Decision Rules and Conduct Rules: On Acoustic Separation in Criminal Law*, 97 HARV. L. REV. 625 (1984) (advancing a theory of acoustic separation through which the criminal law may project a stringent set of rules to shape public perception of permissible conduct and a more lenient set of rules to govern how officials should treat that conduct). But whatever value acoustic separation might have in other contexts, I'm skeptical that it has much here. Acoustic separation is justified, the argument goes, where the perceived strictness of a rule elicits desirable behavior from the relevant public. *Id.* at 645. The goal is to deter more conduct than a simple decision rule could alone. *Id.* at 665; *id.* at 670 (offering example of the duress defense, where widespread knowledge "might move people to succumb to threats under circumstances in which such a decision, though personally rational, would be socially undesirable"). Broadcasting the irrelevance of copy process doesn't fit that mold. Costly overdeterrence is a greater risk in copyright cases than in the criminal cases around which the acoustic separation theory began. *See id.* at 638 n.29 (warning of the welfare losses from overdeterrence). Society likely benefits from a wider range of behavior at the margins of fair use doctrine than at the margins of murder, burglary, and other core offenses. *See* Gideon Parchomovsky & Kevin A. Goldman, *Essay, Fair Use Harbors*, 93 VA. L. REV. 1483, 1497–98 (2007) (outlining the foregone social value of fair uses that the copyright system unnecessarily deters); Christopher Buccafusco & Jonathan S. Masur, *Innovation and Incarceration: An Economic Analysis of Criminal Intellectual Property Law*, 87 S. CAL. L. REV. 275, 288–89 (2014) (noting that in intentional murder cases, unlike negligence torts, "the magnitude of the harm will always exceed the costs of avoiding it"). As a result, even borderline fair use cases don't merit the extra dollop of deterrence that acoustic separation provides.

acute when the copied products are technological, others when the copied products are cultural. It's thus not self-evident that trade secrecy and copyright should treat the copy process similarly. Perhaps, it might be argued, the usual justifications for trade secrecy's improper means doctrine—the market-insulating effect of high imitation costs and the educational benefits of reverse engineering—don't apply to copyrightable works, except possibly in the case of functional expression like software.¹²¹ Or, even if those justifications apply, perhaps they're outweighed by costs that are especially severe within the context of the copyright system.

In this Part, I contend that these views would be mistaken. Cultural works like fine art and film are in fact subject to similar justifications as the industrial knowledge of the trade secret regime. Indeed, the case may be even stronger for such works because audiences value expressive replicas in a way that consumers of technology and business know-how do not. The key is to recognize the difference between acts of mechanical *duplication* and acts of hands-on *recreation* that trace the original author's creative steps. Those two activities are unfortunately lumped together whenever copyright doctrine speaks of "copying" as a single, uniform process—which is, essentially, whenever copyright doctrine speaks of copying at all. Once recreations are properly unbundled from copyright's sprawling notion of the copy, it becomes easier to see their benefits for both copier and consumer, as well as their comparatively weak threat to the original creator. As the sections below discuss, the copy process belongs in the welfare calculus for technological and cultural appropriation alike.

A. *Incentives and Imitation Costs*

According to the standard economic-incentives account, the case for IP protection becomes stronger, all else being equal, as copying becomes easier. IP rights target a particular public goods problem: when it's costly to innovate but cheap to imitate, an innovator may be unable to recoup fixed costs and so decide to forego the enterprise altogether. In order to make innovation a more palatable investment, IP law artificially raises the cost of others' imitation. But if imitation is naturally costly to begin with, the need for legal intervention is weak.¹²²

121. Cf. Samuelson & Scotchmer, *supra* note 18, at 1650 (observing that until copyright subject matter expanded to include software, reverse engineering wasn't a significant policy lever for copyright law).

122. See, e.g., Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1585 (2003) ("If imitation is impossible even in the absence of patent protection, there is little need for the incentives patents provide. Even assuming imitation is

Optimal IP strength thus depends on the process through which creation and copying occur. Technological advances often make copying cheaper over time. If imitation costs fall more quickly than do innovation costs, IP may need to shoulder a greater burden tomorrow than it does today.¹²³ Copyright incentives, for example, become more important as copyists move from rewriting manuscripts by hand to operating a printing press to hitting a few keystrokes on a computer.¹²⁴ The Internet has become, in Cory Doctorow's words, "the world's most efficient copying machine."¹²⁵ Patent rights similarly take on heightened significance as advances in design and prototyping tools facilitate quicker reverse engineering and reduce first-mover advantages.¹²⁶

This increasing ease of copying has more than once induced Congress to extend IP exclusivity to media not previously protected. Sound recordings, for example, weren't made copyrightable until 1972, by which point the technological hurdles facing so-called record pirates had dwindled sufficiently.¹²⁷ Boat hull designs earned their own federal exclusivity regime

possible, if it is sufficiently expensive or time consuming the inventor may be able to make enough money to justify the cost of R&D."); LANDES & POSNER, *supra* note 23, at 42 ("[M]odern technology has reduced the time it takes to make copies, as well as enabled perfect or near-perfect copies to be made at low cost, and as a result the importance of copyright protection has increased for many types of expressive works."); *id.* at 51 ("The higher the cost of a copy relative to that of the original, the smaller is the advantage to the copier from not having borne any part of the cost of creating the original."); Richard Posner, *Intellectual Property: The Law and Economics Approach*, 19 J. ECON. PERSPECTIVES 55, 57 (2005) (noting that "if the costs of copying are high," no IP regulation may be necessary "because the market will exclude copiers without the aid of the law"); Roin, *supra* note 57, at 734 ("Patent scholars occasionally simplify the economic analysis of optimal patent strength into a quick rule of thumb: The need for patent protection is a function of the ratio of total R&D costs to total imitation costs.").

123. An important caveat is that if the cost of innovation falls sufficiently, IP incentives become unnecessary. The bare fact that copying grows easier thus shouldn't be a one-way ratchet expanding IP protection. See LANDES & POSNER, *supra* note 23, at 50 (contending that even while improved technology has reduced the cost of copying, that same technology has also "reduc[ed] the cost of expression" and along with it "the importance of copyright protection as a means for enabling the recovery of the cost of expression").
124. See LANDES & POSNER, *supra* note 23, at 51.
125. Cory Doctorow, *About Little Brother*, Apr. 1, 2008, <http://craphound.com/littlebrother/about/>.
126. See Roin, *supra* note 57, at 733; see also Douglas Gary Lichtman, *The Economics of Innovation: Protecting Unpatentable Goods*, 81 MINN. L. REV. 693, 733 (1997) ("Innovations are becoming inherently more copyable. Copying technologies are becoming faster, cheaper, and more accessible. Patent law's implicit assumption that lead time advantages adequately protect unpatentable innovation is becoming correspondingly unrealistic.").
127. See, e.g., Harry Surden, *Technological Cost as Law in Intellectual Property*, 27 HARV.

in 1998, after the rise of plug-molding enabled reverse engineering them with trivial ease.¹²⁸ Semiconductor chips, too, received special protection in 1984 in response to increasingly effective cloning technology.¹²⁹ Dynamic technological change thus raises copy process's significance for appropriate IP policy.

And there's more. Even looking at a static snapshot at a given moment in history, typical imitation costs will vary across different IP-intensive industries. Particular inventions and expressive media remain harder to copy than others.¹³⁰ A generic drug is technologically easier to produce than is a copycat jetliner.¹³¹ A DVD is easier to duplicate than a dramatic stage production is to reenact.¹³²

IP policymakers have multiple options for how to respond to this diversity in innovation-cost-to-imitation-cost ratios. First, Congress could statutorily increase or decrease protection for specific classes of products. Indeed, it has already done just that in a variety of settings. From the *sui generis* schemes for semiconductors and boat hulls¹³³ to the labyrinthine, industry-specific exemptions that run through the Copyright Act¹³⁴ to the occasional one-off carve-outs from the Patent Act's otherwise general

J.L. & TECH. 135, 138 (2014) (“The absence of a positive legal right over sound recordings [before 1972] was thus partly explainable because technological limitations were, in effect, reliably performing the constraining function normally performed by copyright law. Because the underlying economic problem was cabined effectively by technological infeasibility, an explicit legal right to prevent copies would have been superfluous.”)

128. See Samuelson & Scotchmer, *supra* note 18, at 1591–94 (describing state and federal attempts to protect boat hull designs from plug-molding). In 1989, the Supreme Court held that federal law preempted state statutes attempting to provide “patent-like protection” for boat hull designs. *See* Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 168 (1989). Nearly a decade later, Congress plugged the gap (so to speak) by enacting the Vessel Hull Design Protection Act, Pub. L. No. 105-304, tit. V, 112 Stat. 2905 (1998).
129. Semiconductor Chip Protection Act, Pub. L. No. 98-620, 98 Stat. 3347 (1984). On the decline of imitation costs preceding the act’s passage, see Samuelson & Scotchmer, *supra* note 18, at 1598.
130. Burk & Lemley, *supra* note 122, at 1585.
131. F.M. Scherer, *Pharmaceutical Innovation*, in 1 HANDBOOK OF THE ECONOMICS OF INNOVATION 560–61 (Hall & Rosenberg eds., 2010) (contrasting the cheap development of generic drugs to costly aircraft manufacturing, where “[e]ven without patents, the firm that would seek to imitate the Boeing 787 would have to build its own scale models, perform its own wind tunnel tests . . . spending very nearly as much as Boeing did to develop its 787”).
132. LANDES & POSNER, *supra* note 23, at 42.
133. *See supra* text accompanying notes 128–129.
134. *See* 17 U.S.C. §§ 108–122 (2012); Joseph P. Liu, *Regulatory Copyright*, 83 N.C. L. REV. 87, 105–08 (2004).

standards,¹³⁵ statutory IP law has seen its fair share of technological idiosyncrasy. But policymakers shouldn't rely heavily on legislative fixes to calibrate IP scope for particular copy processes. As others have discussed at length, such an approach would be cumbersome, vulnerable to industry capture, and likely to produce results destined for quick obsolescence.¹³⁶

A second, more promising option looks to the courts. Courts adjudicating infringement cases could expand the scope of IP protection along some dimension when imitation is easy and contract it when imitation is hard.¹³⁷ From an evidentiary standpoint, the simplest approach would be to consult the typical imitation process used within the relevant industry.¹³⁸ An industry-wide inquiry would spare the court the burden of determining in each case how costly the particular defendant's copying was relative to the particular plaintiff's innovation. There is an accuracy tradeoff to that administrability gain, however. Just because the average imitator can work cheaply doesn't mean that all imitators will. Some may proceed through more complicated and costly methods. Some, for example, might seek to teach themselves something about the product by building it anew.¹³⁹ For cultural works, others might wish to express something through a particular recreation process.¹⁴⁰ In either scenario, copyists aren't always using the cheapest and fastest methods available to them. In some cases, the cost of imitating will not lag far behind the cost of creating in the first instance.¹⁴¹ A

135. See, e.g., 35 U.S.C. §§ 271(e)(1) (allowing generic drug companies to make certain uses of patented pharmaceuticals), 287(c) (prohibiting enforcement of medical procedure patents against doctors).

136. See Burk & Lemley, *supra* note 122, at 1634–38.

137. For an analogous proposal targeting protectability, rather than infringement, see *id.* at 1661 (noting that “[w]here R&D costs are especially high relative to the costs of imitation, lowering the standards for patentability may increase the incentive to invest in innovation by increasing the likelihood of financial reward” and suggesting that “the Federal Circuit could take account of the cost and uncertainty of post-invention development . . . by creating a new secondary consideration of nonobviousness that measures the cost of innovation”).

138. See *id.* at 1662 (arguing that examining an industry as a whole would be more efficient than assessing each innovation individually).

139. See *infra* section II.C.

140. See *infra* section II.B.

141. Indeed, imitation costs could conceivably be greater. Try, for instance, recreating a Jackson Pollock from scratch. See George E. Newman & Paul Bloom, *Art and Authenticity: The Importance of Originals in Judgments of Value*, 141 J. EXPERIMENTAL PSYCH.: GENERAL 558, 563 (2012) (“[A]rtistic originals are not always more difficult to create than artistic duplicates. For instance, the time required to identically duplicate an abstract painting by Jackson Pollock may be greater than the time that it took to produce the original.”); EVELYN TOYNTON, JACKSON POLLOCK ____ (2012) (recounting how appropriation artist Mike Bidlo “had thought it would be easy to [re]create a Pollock,” yet “it took him months of dogged practice to come up with anything credible”).

legal standard that reflects only the possible imitation costs, rather than the defendant's actual ones, will penalize more behavior than it needs to.

Thus, putting aside administration costs for the moment,¹⁴² an infringement regime would ideally sort defendants according to their individual copy processes. Trade secret doctrine already does this through its improper means inquiry.¹⁴³ Copyright law does not, with the notable exception of the compulsory “cover” license for musical works discussed above.¹⁴⁴ That exception, though, provides some proof of concept for how courts might incorporate imitation costs into the copyright infringement analysis. The statutory text in force during the rise of tape piracy in the early 1970s, unlike the one in force today, did not expressly distinguish between mechanical duplication and rerecording from scratch.¹⁴⁵ Nevertheless, imitation costs drove courts to reach the same result anyway through their interpretation of the statute's open-ended “similar use” clause.¹⁴⁶ As one court explained its decision to withhold the license from mechanical duplicators:

[W]hile the difference between making a recording and duplicating a recording (making a recording of a recording) may seem negligible semantically, the impact of the latter upon the copyright interest of the composer is clear. The copyright holder's benefit is substantially reduced by the inevitable lower profits which result from duplicators who can re-record for a fraction of the original cost and thus undersell the authorized recorder.¹⁴⁷

Though these cases were limited to a specific statutory license for musical works, they offer a blueprint for analyzing other recreations as well. One could easily apply the same reasoning to, say, recreated photographs¹⁴⁸ or paintings.¹⁴⁹ Indeed, as I argue below in Part III, the Copyright Act's fair use

142. These costs are discussed below in section II.E.

143. See Samuelson & Scotchmer, *supra* note 18, at 1590 (defending trade secrecy's allowance of reverse engineering because “the costs and time required for reverse engineering already protect most innovators”).

144. See *supra* text accompanying notes 114 through 119.

145. Compare 17 U.S.C. § 1(e) (1970) (establishing a compulsory license for “mak[ing] a similar use of the copyrighted work”), with 17 U.S.C. § 115(a)(1) (2012) (denying the compulsory license to one who merely “duplicat[es] a sound recording fixed by another” unless one also receives separate permission from the owner of the copyright in the copied sound recording).

146. See *supra* text accompanying notes 114 through 119.

147. Heilman v. Bell, 583 F.2d 373, 376 (7th Cir. 1978).

148. See *supra* text accompanying notes 11–13.

149. See *supra* text accompanying notes 76–80.

provision already gives courts an analogous statutory foothold for doing just that.¹⁵⁰ Considering the imitation costs actually borne by particular copyright defendants is both precedented and feasible.

B. Process Preferences

While imitation costs present a familiar story in the IP literature, individual preferences for particular copy processes do not. That absence is surprising. Within other legal fields, both the courts and the academy have begun to confront the notion that people may care not just about what a product is but also about how it gets to be that way.¹⁵¹ IP has lagged behind.

To be clear, my argument in this section does not deal much with trade secret law (or, for that matter, patent law). Consumers of technological goods like pharmaceuticals and smartphones probably don't care much about copy process. Most of us wouldn't favor one generic drug over another simply because its manufacturer had to work harder to copy a branded version. We just want to know whether it will work.

Expressive goods, however, are another story. Audiences often relate differently to recreations than they do to mechanical duplications. Start with one of the more notable recreations of the Renaissance, Andrea del Sarto's replica of Raphael's portrait of Pope Leo X. According to the sixteenth-century art historian Giorgio Vasari, the Duke of Mantua had been promised the original portrait as a gift, but its Medici caretaker did not want to see it leave Florence.¹⁵² So the enterprising caretaker had Andrea repaint it and

150. 17 U.S.C. § 107(1) (listing the “character of the use” as the first factor to be considered in a fair use analysis). *See infra* Part III.

151. *See* Kwikset Corp. v. Superior Court, 246 P.3d 877, 889 (Cal. 2011) (noting that “[t]o some consumers, processes . . . matter,” offering examples of conflict-free diamonds and union-made goods); Salters v. Beam Suntory, Inc., No. 14-cv-659, 2015 WL 2124939 (N.D. Fla. May 1, 2015) (considering, and ultimately rejecting, a false advertising claim against Maker’s Mark for calling its bourbon “handmade”); Douglas A. Kysar, *Preferences for Processes: The Process/Product Distinction and the Regulation of Consumer Choice*, 118 HARV. L. REV. 525, 532 (2004) (“[C]onsumer products—even when physically indistinguishable—are not perfect substitutes to the extent that they are produced using different processes about which consumers have strong feelings.”); *id.* at 601–02 (“[C]onsumers are willing to pay a premium for goods derived from certain production processes, even in the absence of appreciable differences in the resulting products. Among other items, such preferences have been demonstrated for non-GM foods, sustainably harvested timber, and fairly traded goods.”); *cf.* United States v. Darby, 312 U.S. 100, 116 (1941) (rejecting a Commerce Clause challenge to the Fair Labor Standards Act and, along with it, the once-accepted product/process distinction under which “Congressional power to prohibit interstate commerce is limited to articles which in themselves have some harmful or deleterious property”).

152. 5 GIORGIO VASARI, LIVES OF THE MOST EMINENT PAINTERS, SCULPTORS, AND ARCHITECTS

pass off the copy as the original.¹⁵³ When the Duke received the gift, neither he nor even Raphael's disciple could tell it was a copy—Andrea had so expertly copied the painting, right down to “the spots of dirt,” that no one could tell the difference.¹⁵⁴ But Vasari himself had seen Andrea in the act of copying and blew the whistle, informing the Duke that he had received a mere imitation.¹⁵⁵ No matter. According to Vasari's telling, the Duke simply shrugged and announced, “I value it no less than if it were by the hand of [Raphael]—nay, even more, for it is something out of the course of nature that a man of excellence should imitate the manner of another so well, and should make a copy so like. It is enough that it should be known that Andrea's genius was as valiant in double harness as in single.”¹⁵⁶

Nearly five centuries later, fascination with recreations doesn't seem to have worn off. In 2012, a teenage boy spent months remaking a Beyoncé music video shot for shot, recreating every bit of choreography, cinematography, and even the singer's facial expressions.¹⁵⁷ He became a minor Internet celebrity.¹⁵⁸ Millions of viewers flocked to watch his video not so much because of the product itself, which looked stunningly like the original (minus, of course, the identity of the singer), so much as because of everything he did to bring it into being.¹⁵⁹ The replicated performance exemplifies just how difficult it is to do certain things consciously that a predecessor has done unconsciously: blinks, the slightest of smiles, momentary glances away. The project is challenging (and therefore captivating) not just because of resource constraints, but also because of the performer's talent at forcing previously random outcomes to reappear on command.

Likewise, when a group of fans spent years faithfully recreating the film

107 (Gaston du C. De Vere trans. 1913) [1550].

153. *Id.* at 108.

154. *Id.*

155. *Id.*

156. *Id.* at 108–09.

157. See *supra* note 20.

158. *See id.*

159. See Mawuse Ziegbe, *Beyoncé Co-Signs ‘Snuggie’ Version of Her ‘Countdown’ Video*, POP RADAR, July 19, 2012, 2:48 PM, http://www.boston.com/ae/celebrity/blog/popradar/2012/07/beyonce_cosigns_snuggie_version_of_her_countdown_video.htm (ascribing the video's viral popularity largely to “the fairly faithful recreation of the video's elaborate choreography and pop-art style editing”); Jen Carlson, *Meet Ton Do-Nguyen, The Snuggie “Countdown” Kid Beyoncé Calls “Brilliant”*, GOTHAMIST, July 21, 2012, 10:22 AM, http://gothamist.com/2012/07/21/we_talk_to_ton_do-nguyen_the_snuggi.php (praising the “incredibly talented teenager reenacting Beyoncé's ‘Countdown’ video in the most perfect way” and noting that “[h]e nails every part of the fast-moving video—if you blink an eye you'll miss a perfectly synched up detail”).

Raiders of the Lost Ark from scratch, their remake became a cult classic, screening at the SXSW festival and inspiring a feature-length documentary film about the creation process.¹⁶⁰ Critics lauded the group members for their skill in comprehensively replicating an iconic Hollywood blockbuster on a shoestring budget.¹⁶¹ After seeing the remake, director Quentin Tarantino commented that “they start bowling you over with their ingenuity. Because you know the movie so well, you can’t wait for them to do the next scene. ‘How are they going to do this? Well, they can’t do that!’ And then they come up with a way to do it.”¹⁶² One reviewer noted that, compared to the ones recreating the film, “Spielberg had it easy.”¹⁶³ After all:

He had a studio budget and hundreds of helpers. More importantly, he had creative freedom. If a shot wasn’t working, he could change it. If a stunt failed, he could scrap it. By contrast, *The Adaptation* was manacled to Spielberg’s caprice. . . . Mimicry can be even harder than the original.¹⁶⁴

A similar fascination with recreating an expert’s achievement underlies the recent, Oscar-nominated documentary, *Tim’s Vermeer*.¹⁶⁵ The film chronicles a novice’s efforts to recreate a Vermeer painting using the process that, he hypothesized, the artist himself had once used. He spent years on the project, including developing and building the optical devices on which he believed Vermeer relied, building a full-scale replica of the room that was the subject of the original painting, mixing pigments, and finally a painstaking seven months of putting brush to canvas.¹⁶⁶ As one film critic

160. Daniel Kreps, *After 30 Years, ‘Raiders of the Lost Ark’ Devotees Finish Adaptation*, ROLLING STONE, Mar. 4, 2015; SXSW SCHEDULE, *Raiders of the Lost Ark: The Adaptation*, http://schedule.sxsw.com/2015/events/event_FS19208; RAIDERS! THE STORY OF THE GREATEST FAN FILM EVER MADE (2015).

161. See Kreps, *supra* note 160; Amy Nicholson, *After 33 Years and an Airplane Explosion, Their Raiders of the Lost Ark Remake is Almost Complete. Are they?*, LA WEEKLY, Nov. 12, 2014, <http://www.laweekly.com/arts/after-33-years-and-an-airplane-explosion-their-raiders-of-the-lost-ark-remake-is-almost-complete-are-they-5205358>; Jim Windolf, *Raiders of the Lost Backyard*, VANITY FAIR, Mar. 2004.

162. Nicholson, *supra* note 161.

163. *Id.*

164. *Id.*

165. TIM’S VERMEER (Sony Pictures Classics 2014).

166. See Kurt Andersen, *Reverse-Engineering A Genius (Has a Vermeer Mystery Been Solved?)*, VANITY FAIR, Nov. 29, 2013, <http://www.vanityfair.com/unchanged/2013/11/vermeer-secret-tool-mirrors-lenses>; Peter Debruge, *Telluride Film Review: ‘Tim’s Vermeer’*, VARIETY, Sept. 2, 2013, <http://variety.com/2013/film/markets-festivals/telluride-film-review-tims-vermeer-1200596123>; Joe Morgenstern, *A Magical*

put it, the story captivates because it centers on an individual “erect[ing] his own Everest and then proceed[ing] to climb it.”¹⁶⁷

Recreations needn’t be in the precise medium that the original creator used. Sometimes expressive reasons exist to recreate in a different one. Take, for example, Jojakim Cortis and Adrian Sonderegger, who built detailed scale models replicating famous historical photographs like the Hindenburg crash, the Loch Ness monster, and the first moon landing.¹⁶⁸ Over the course of days and sometimes weeks, they used various physical materials, from tarps to sand to cotton balls, to construct their recreations.¹⁶⁹ It was largely that investment of labor that caught observers’ attention.¹⁷⁰

These anecdotes might seem extreme, but they resonate with a familiar form of consumer behavior. Over a century ago, Thorstein Veblen observed that a hand-wrought silver spoon could be identical to, and yet deemed far more valuable than, a machine-made one.¹⁷¹ There remains a similar premium on intensive creation processes today. Many are willing to spend a little bit extra for a handmade quilt. Or handmade furniture. Or handmade ceramics. Or pretty much anything on the Etsy website.¹⁷² Think of it as a “handmade effect.” According to a recent marketing study, consumers in Western countries perceive many handmade objects to be more attractive and are willing to pay more for them even while holding product quality constant.¹⁷³ What’s more, the value of handmade process is robust enough that this preference holds true even when dealing with an unspecific, anonymous producer.¹⁷⁴

A similar phenomenon may be at work in audience reception of artistic

Tour of ‘Vermeer’ Mystery, WALL ST. J., Jan. 30, 2014, <http://www.wsj.com/news/articles/SB10001424052702303519404579351750724256752>.

167. Debruge, *supra* note 166.

168. See Sheena McKenzie, *12 Famous Photos Painstakingly Recreated With Miniature Models*, CNN, Mar. 27, 2015, <http://www.cnn.com/2015/03/27/world/historys-most-famous-photos-recreated-miniature-models/>; Zachary Slobig, *History’s Most Iconic Photos, Recreated in Miniature*, WIRED, Mar. 9, 2015, <http://www.wired.com/2015/03/jojakim-cortis-adrian-sonderegger-iconen/>.

169. *Id.*

170. See *supra* note 168.

171. THORSTEIN VEBLEN, *A THEORY OF THE LEISURE CLASS* (1899).

172. See Rob Walker, *Handmade 2.0*, N.Y. TIMES MAG., Dec. 16, 2007, <http://www.nytimes.com/2007/12/16/magazine/16Crafts-t.html> (describing Etsy’s capitalization on “the appeal of the handmade to those who might not have the inclination to do the making”).

173. See Christoph Fuchs et al., *The Handmade Effect: What’s Love Got to Do With It?*, 79 J. MKTG. 98 (2015).

174. *Id.* at 107.

work. Several controlled experiments have found that perceptions of the effort and skill involved in a creation process affect evaluation of the resulting creation.¹⁷⁵ Two deserve special mention. First, psychology professors George Newman and Paul Bloom presented participants with an original artwork and an identical duplicate, varying the accompanying information on whether the original or the duplicate required significant effort to produce.¹⁷⁶ They found that, as a general matter, audiences tended to rank duplicates inferior to originals.¹⁷⁷ Yet when a low amount of effort was required to create the original and a high amount of effort was required to duplicate it, participants rated the two artworks as equally valuable.¹⁷⁸ Laboriously produced duplicates took on special worth. The authors of the study theorized that participants had judged both original and recreation to be “the products of unique creative acts: one that resulted in the original design and one that used an entirely new process to replicate that design.”¹⁷⁹ Even when dealing with copies, then, sequestering product from process is easier said than done.

Second, Shyamkrishna Balganesh and colleagues have recently explored the role of labor in the specific context of copyright infringement cases. In their experiment, telling lay jurors that the creator expended significant labor to produce the original work at issue increased the perceived similarity between that original and a non-exact copy of it.¹⁸⁰ The study designers conjecture that perhaps “the creator’s expenditure of labor led subjects to view the copying involved as entailing greater (and more morally outrageous) free-riding, which they treated as wrongful.”¹⁸¹ The study sheds

175. See, e.g., Justin Kruger, et al., *The Effort Heuristic*, 40 J. EXPERIMENTAL SOCIAL PSYCH. 91, 92 (2004) (“[A]ll else being equal, people tend to believe that a painting that takes 2 days to paint is better than one that takes 2 hours, just as people tend to believe that an additional manuscript revision will result in a better paper.”); Hyejeung Cho & Norbert Schwarz, *Of Great Art and Untalented Artists: Effort Information and the Flexible Construction of Judgmental Heuristics*, 18 J. CONSUMER PSYCH. 205, 208 (2008) (replicating these results when participants were first asked to evaluate the quality of the work, though not when they were first asked to evaluate the talent of its creator). Kruger and his colleagues hypothesize that perceived effort is simply a heuristic for aesthetic value, which is difficult to pin down. One need not accept that hypothesis—artisanal investment could be a real preference, after all, not just a heuristic—in order to accept their underlying finding that observers treat laboriously-created art better than physically-identical but less easily-created art.

176. Newman & Bloom, *supra* note 141, at 564–65.

177. *Id.*

178. *Id.*

179. *Id.* at 565.

180. Shyamkrishna Balganesh et al., *Essay, Judging Similarity*, 100 IOWA L. REV. 267, 282–84 (2014).

181. *Id.* at 288.

only limited light on copy process *per se*, as none of the experimental conditions varied jurors' information on the amount of labor that the copyist expended in replicating the copyrighted work. Nevertheless, the study still provides reason to suspect that Newman and Bloom's findings on the perceived aesthetic value of laborious recreations could cash out in copyright trials.

Why might audiences value particular copy processes over others? It may be that, at least in some contexts, the act of copying acquires a different moral valence when the creator hasn't had to work much harder than the copyist, as Balganesh and colleagues suggest.¹⁸² That intuition would track the economic imitation costs argument outlined in the previous section. But it may also be that, as Newman and Bloom posit, difficult acts of copying impress audiences in ways similar to difficult acts of creating in the first instance.¹⁸³ Newman and Bloom ground their hypothesis in aesthetic theories claiming that audiences experience expressive goods, even static objects like paintings, as conclusions of their creators' performances.¹⁸⁴ Change the performance and you necessarily change the product. From this perspective, the copy process is a performance all its own. Labor-intensive recreations are capstones to performances that audiences care about; mechanical duplications aren't. Obviously, there remains value in the work being reproduced separate and apart from the means of reproduction—few of us would prefer to convene a new cast and crew of *Raiders of the Lost Ark* every time we want to watch it. But effective recreations can bring pleasure to audiences even on top of the content that is recreated.

The idea that the means of reproduction casts a shadow over aesthetic objects harkens back at least as far as Walter Benjamin's 1936 essay *The*

182. See Balganesh et al., *supra* note 180, at 288.

183. Newman & Bloom, *supra* note 141, at 565.

184. *Id.* at 559. Philosopher Denis Dutton's work is representative of this view:

Every work of art is an artifact, the product of human skills and techniques. If we see an actor or a dance or a violinist at work, we are constantly conscious of human agency. Less immediately apparent is the element of performance in a painting that has hung perhaps for generations in a museum, or a long-familiar musical composition. Yet we are no less in such cases confronted with the results of human agency. As performances, works of art represent the ways in which artists solve problems, overcome obstacles, make do with available materials. The ultimate product is designed for our contemplation, as an object of particular interest in its own right, perhaps in isolation from other art objects or from the activity of the artist. But this isolation which frequently characterizes our mode of attention to aesthetic objects ought not to blind us to a fact we may take for granted: that the work of art has a human origin, and must be understood as such.

Denis Dutton, *Artistic Crimes*, 19 BRIT. J. AESTHETICS 302 (1979).

*Work of Art in the Age of Mechanical Reproduction.*¹⁸⁵ Benjamin argued that increasingly widespread, technological reproduction was extinguishing an original copy's "aura" of authenticity.¹⁸⁶ "A work of art has always been reproducible," Benjamin wrote, but "[m]echanical reproduction of a work of art . . . represents something new."¹⁸⁷ When a work is copied quickly and pervasively, it loses its authority as a unique artifact, leaving little difference between any given copy and another.¹⁸⁸

As Barton Beebe has recently emphasized, though, Benjamin overlooked the fact that "in producing ever more copies, 'mechanical reproduction' only amplifies all the more the distinctive 'aura' of those things that are perceived not as mechanically reproduced copies, but rather as authentic originals."¹⁸⁹ Beebe's observation can be extended even further: mechanical reproduction amplifies not just what is perceived to be an authentic original, but also what is perceived to be an authentic recreation. In an age of mechanical reproduction, non-mechanical reproduction takes on heightened aesthetic, and even political, significance. Advancing technology like 3-D printing and robotics is making more and more resources less and less scarce.¹⁹⁰ As today's burgeoning craft movement reflects, human involvement may be one of the few scarce things remaining.¹⁹¹ There's a growing "revenge of analog."¹⁹² The rarity of hands-on production processes creates value that can inure in recreations just as much as it can in the originals on which

185. Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, in ILLUMINATIONS 217 (Hannah Arendt ed., Harry Zohn trans., Schocken Books 1968) [1955].

186. See *id.* at 221.

187. *Id.*

188. *Id.*

189. Barton Beebe, *Intellectual Property Law and the Sumptuary Code*, 123 HARV. L. REV. 809, 868 (2010).

190. See generally Mark A. Lemley, *IP in a World Without Scarcity*, 90 N.Y.U. L. REV. 460 (2015).

191. See FAYTHE LEVINE & CORTNEY HEIMERI, *HANDMADE NATION: THE RISE OF DIY, CRAFT, AND DESIGN* (2008); Walker, *supra* note 172 (quoting the "Handmade Pledge," endorsed by Etsy, stating that "Our ties to the local and human sources of our goods have been lost. . . . Buying handmade helps us reconnect."). As one Etsy consumer wrote in a blog post, "I have, for quite a long time, been deeply disenchanted with mass merchandising and retail in general. There was a time when I got excited because Liberty of London was launching a line at Target, but the older I got, the more I felt drawn to things made by hand, be they technically 'art' or 'craft' I want a connection to a person who has put a bit of herself into the creation of my mug, scarf or notecard." Imagineannie, *The Etsy Girl*, FOREST STREET KITCHEN, June 22, 2012, <https://imagineannie.wordpress.com/2012/06/22/the-etsy-girl/>

192. David Sax, *Why Startups Love Moleskines*, NEW YORKER, June 14, 2015, <http://www.newyorker.com/business/currency/why-startups-love-moleskines>.

they're based.

All of this matters for copyright law for two reasons. First, as a descriptive matter, it may help explain why some courts invoke the defendant's labor even without a doctrinal basis.¹⁹³ The labor involved in creating and copying seems to matter to laypeople.¹⁹⁴ It seems to matter to potential copyright jurors.¹⁹⁵ And so it probably matters to judges, too. Beyond the infringement cases discussed in Part I, there are glimpses of this attitude in the handful of decisions addressing whether authorized replications of artwork merit their own copyrights. In one case, for instance, a court held that a reduced-size rendering of a Rodin sculpture was copyrightable because the reduction "requires far more than an abridgement of a written classic; great skill and originality is called for when one seeks to produce a scale reduction of a great work with exactitude."¹⁹⁶ In a subsequent case, a court denied copyrightability to a plastic replica of a public-domain toy bank, distinguishing the Rodin case based on the "true artistic skill" and "complexity and exactitude" involved in that reproduction process.¹⁹⁷ There's good reason to think that judges can be similarly impressed by complexity and exactitude on the defendant's side of the "v.," too. Infringement policy would at least be more transparent if we acknowledged that the copy process may already be influencing legal decision-makers, even if only at the margins.

Second, as a normative matter, black-letter doctrine's inhibition of recreations inflicts a social cost that the standard analysis doesn't normally reflect. The most-recognized static cost of copyright limitations on unauthorized reproductions is the deadweight loss from supracompetitive pricing. Recreations pose a separate problem. There, copyright liability is not so much increasing prices for the same good as suppressing a qualitatively different good. We have remakes of *Raiders* and Beyoncé music videos only at the sufferance of copyright owners.¹⁹⁸ Unlike garden-variety derivative works such as a cinema adaptation of a novel, recreations lose expressive force if performed by the original work's author. Audiences rally around one who recreates a Vermeer precisely because he is *not* Vermeer. And under fair use principles, the inability of a copyright holder to enter a

193. See *supra* Part I.B.

194. See Newman & Bloom, *supra* note 141.

195. See Balganesh et al., *supra* note 180.

196. *Alva Studios, Inc. v. Winninger*, 177 F. Supp. 265, 267 (S.D.N.Y. 1959).

197. *L. Batlin & Son, Inc. v. Snyder*, 536 F.2d 486, 491–92 (2d Cir. 1976).

198. See Windolf, *supra* note 160 (describing the "fantasy" of the *Raiders* adaptation creators that "Spielberg would one day see the movie they were making—and . . . would congratulate them, rather than sue," a fantasy that ended up coming true).

particular market is a good reason for letting others do so.¹⁹⁹

Relying on licensing isn't a very attractive solution either. To begin with, it's an open question how often creators would actually permit others to share the limelight. Though recreations can be loving tributes, they can also diminish the luster of romantic genius that sometimes surrounds the original.²⁰⁰ Yet even if licenses were readily available, it would be perverse to require them in instances where imitation costs are already high. Moreover, while ubiquitous forms of copying like online photo embedding have nudged copyright owners into offering blanket licenses, there's as yet no voluntary blanket license for recreations,²⁰¹ and there's not likely to be one any time soon. Directly negotiating one-off deals, with its inevitable transaction costs, would be the only realistic choice. If licensing fees and transaction costs are stacked on top of the natural expense of recreating from scratch, some recreations simply won't get made. That market failure seems an unnecessary price to pay if recreators pose little threat to copyright owners as it is—doubly so if they aren't even seeking to compete with owners commercially.²⁰²

So long as authors of original works remain able to keep authoring, subsidizing recreations is a socially worthy end. As recent case law has emphasized, owners "cannot prevent others from entering fair use markets" merely through eagerness to license.²⁰³ Whether offering copyright protection is the best way to enrich society, not just whether owners would license, should guide the analysis.²⁰⁴

199. See, e.g., *Assoc. Press v. Meltwater U.S. Holdings*, 931 F. Supp. 2d 537, 560 (S.D.N.Y. 2013) ("[W]hen the use . . . takes place in a market that the copyright holder is unlikely to develop, it is more likely that the defendant has engaged in a fair use of the material. After all, '[c]opyright holders rarely write parodies of their own works, or write reviews of them, and are even less likely to write news analyses of their underlying data from the opposite political perspective.'") (quoting *Twin Peaks Productions, Inc. v. Publ'ns Intern., Ltd.*, 996 F.2d 1366, 1377 (2d Cir. 1993)).

200. See, e.g., *Debruge*, *supra* note 166 ("[W]hat if someone told you that anybody could paint as well as Vermeer? Is it still a masterpiece if an amateur could do it?").

201. See generally *Rebecca Tushnet, All of This Has Happened Before and All of This Will Happen Again: Innovation in Copyright Licensing*, 29 BERKELEY TECH. L.J. 1447 (2014).

202. See *supra* section II.A.

203. *Bill Graham Archives v. Dorling Kindersley Ltd.*, 448 F.3d 605, 615 (2d Cir. 2006); see also *Williams & Wilkins Co. v. United States*, 487 F.2d 1345, 1357 n.19 (Ct. Cl. 1973), *aff'd by an equally divided Court*, 420 U.S. 376 (1975) (per curiam)) ("[T]o measure the detriment to plaintiff by loss of presumed royalty income . . . assume[s] at the start the merit of the plaintiff's position.").

204. See *Wendy J. Gordon, Fair Use Markets: On Weighing Potential License Fees*, 79 GEO. WASH. L. REV. 1814, 1843 (2011) ("When circumstances give us no reason to trust that the market that the Copyright Act enabled will serve social goals, or if there is

Foregone recreations are one way that infringement liability could leave the public worse off. The next section introduces another.

C. Learning by Doing

The most valuable copy processes yield more than just a copied product. They also yield skills for creating new products.

In 1916, philosopher and educational reformer John Dewey introduced the pedagogical theory that we today associate with experiential learning.²⁰⁵ Dewey explained that “[t]he knowledge which comes first to persons, and that remains most deeply ingrained, is knowledge of *how to do*; how to walk, talk, read, write, skate, ride a bicycle, manage a machine, calculate, drive a horse, sell goods, manage people, and so on indefinitely.”²⁰⁶ “[T]he natural course of development,” he claimed, “always sets out with situations which involve learning by doing.”²⁰⁷ By the 1960s, the core insight of learning by doing had begun to influence the literature on innovation economics. Kenneth Arrow famously theorized in *The Economics of Learning by Doing* that the act of production itself fosters solutions to new problems.²⁰⁸ Producing old things redounds to society’s benefit as the producers obtain more knowledge and, often enough, start to produce new things.

As John Duffy has recently argued, this knowledge spillover gives “the productive activity itself . . . a theoretical claim to favorable regulatory treatment similar to the claim for favoring investment in research.”²⁰⁹ In Duffy’s framework, that favorable treatment comes in the form of granting greater rights to patentees who have successfully practiced their inventions than to patentees who have merely conceived them on paper.²¹⁰ The underlying theory, though, can be extended further. It needn’t depend on whether the object being produced happens to be the producer’s own creation or instead someone else’s. The production process itself carries the

affirmative reason to trust nonmarket modes of circulation and productivity to do a better job, then those factors should help persuade toward fair use.”).

205. JOHN DEWEY, DEMOCRACY AND EDUCATION 217 (1916).

206. *Id.*

207. *Id.*

208. Kenneth J. Arrow, *The Economic Implications of Learning by Doing*, 29 REV. ECON. STUD. 155, 156 (1962) (“[T]echnical change in general can be ascribed to experience, that it is the very activity of production which gives rise to problems for which favorable responses are selected over time.”).

209. John F. Duffy, *Reviving the Paper Patent Doctrine*, 98 CORNELL L. REV. 1359, 1394 (2013).

210. See *id.* at 1374, 1396–97.

potential to incubate know-how all the same. Learning by copying is just a form of learning by doing. Ideally, then, production would receive some form of subsidy even when the product is a reproduction.

Copying an expert's work, as many art school students know, is a great way to learn the tricks of the trade.²¹¹ Individuals with experience copying art often speak of the greater understanding of the original that the activity affords them. One expert copyist got his start while lecturing on painting technique at London's National Gallery, after deciding to copy the subjects of his lectures in order to figure out, in his words, "how do they do that?"²¹² Another remarked that "[o]ne of the reasons I do what I do is to absorb what the painters were getting at."²¹³ This attitude goes back a long way. The Louvre has throughout its history encouraged painters to train by copying masterworks in its collection.²¹⁴ Degas, a Louvre copyist himself, is reputed to have said "[y]ou have to copy and recopy the masters . . . and it's only after having proved oneself a good copyist that you can reasonably try to do a still life of a radish."²¹⁵ New York City's Metropolitan Museum of Art has offered a "Copyist Program" since 1872, intended to "celebrate[] intensive technical study, problem solving, and dialogue with artists and artworks of the past."²¹⁶ The National Gallery of Art has offered one since 1941.²¹⁷

Learning by copying isn't just limited to painting and sculpture. Architecture students at the Ecole des Beaux-Arts in Paris honed their craft by trying to imitate the great structures of antiquity and the Italian Renaissance.²¹⁸ Jazz musicians learn how to improvise by replicating famous

211. See Jonathan Jones, *Why Would-Be Artists Should Imitate the Greats*, THE GUARDIAN, Sept. 19, 2009, <http://www.theguardian.com/artanddesign/2009/sep/19/aspiring-artists-should-imitate-masters>; Malcolm Jones, *There's Nothing Wrong—And a Lot That's Right—About Copying Other Artists*, THE DAILY BEAST, Jan. 26, 2014.

212. Iain Gale, *Never say 'Fake.' Forget 'Forgery.' It's Got to Be 'Copy' or 'Pastiche'*, THE INDEPENDENT, Sept. 5, 1995, <http://www.independent.co.uk/arts-entertainment/art/never-say-fake-forget-forgery-its-got-to-be-copy-or-pastiche-1599527.html>

213. *Id.*

214. Joseph A. Harris, *Master Class*, SMITHSONIAN MAG., Mar. 2001, <http://www.smithsonianmag.com/arts-culture/master-class-69130767/>.

215. *Id.*

216. The Metropolitan Museum of Art, *Copyist Program*, <http://www.metmuseum.org/events/programs/art-making-programs/copyist-program>.

217. National Gallery of Art, *Copyist Program*, <http://www.nga.gov/content/ngaweb/visit/copyist.html>.

218. Raleigh W. Newsam, II, *Architecture and Copyright—Separating the Poetic from the Prosaic*, 71 TUL. L. REV. 1073, 1098 (1997).

solos.²¹⁹ Trumpeter Art Farmer, for instance, once reflected that transcribing others' solos early on taught him what sounded good and what didn't, "like getting your vocabulary straight."²²⁰ To the same end, the musicology program in which I studied as an undergraduate devoted the first several semesters to mimicking the compositional style of classical greats, first Bach, then Haydn, Mozart, and Beethoven. Bach himself arranged others' works in his youth as a learning aid.²²¹

In this respect, the arts are a lot like engineering. Automotive manufacturers routinely disassemble each other's latest models in an effort to discern the choices that competitors make and why they make them.²²² "As much as you think you know," one industry analyst explained, "nothing beats picking up the parts, feeling them, weighing them, and knowing the processes that made them."²²³ For similar reasons, dissection and reverse engineering have taken on an increasing role in undergraduate engineering curricula over the last two decades.²²⁴

Picking up on this pedagogical theme, many copyright scholars have tried to conceptualize copying as a stepping stone to originality.²²⁵ If copyright is meant to promote creativity, the argument goes, then it may be shooting itself in the foot by controlling downstream users' ability to copy from others. Yet extending the learning-by-doing insight from IP owners'

219. PAUL F. BERLINER, *THINKING IN JAZZ: THE INFINITE ART OF IMPROVISATION* 95–97 (2009) (describing various ways in which, "[j]ust as children learn to speak their native language by imitating older competent speakers, so young musicians learn to speak by imitating seasoned improvisers," *id.* at 95).

220. Quoted in *id.* at 95.

221. Olufunmilayo B. Arewa, *From J.C. Bach to Hip Hop: Musical Borrowing, Copyright and Cultural Context*, 84 N.C. L. REV. 547, 610 (2006).

222. See Carl Hoffman, *The Teardown Artists*, WIRED, Feb. 2006, <http://archive.wired.com/archive/14.02/teardown.html>.

223. *Id.*

224. See Katie Grantham et al., *A Study on Situated Cognition: Product Dissection's Effect on Redesign Activities*, ADVANCES IN ENGINEERING EDUCATION, Summer 2013, at 2 (describing adoption in academic settings and noting that "[t]hrough its integration into the classroom, product dissection has been found to: 1) increase awareness of the design process; 2) encourage the development of curiosity, proficiency, and manual dexterity; 3) give students early exposure to fully operational and functional products and processes; as well as 4) increase motivation and retention.").

225. See, e.g., Daniel Gervais, *The Derivative Right, or Why Copyright Law Protects Foxes Better than Hedgehogs*, 15 VAND. J. ENT. & TECH. L. 785, 851 (2013) ("By copying a master's work, the "pupil" might at least get a glimpse of the great author's mind, which would seem like a normatively desirable process."); Sara K. Stadler, *Forging a Truly Utilitarian Copyright*, 91 IOWA L. REV. 609, 646 (2006) ("In copying technique, one learns technique; in copying style, one learns style. If the copyist is lucky, he finds his own style in the end, but even if he does not, his mastery of technique makes him capable of creating beauty.").

conduct to potential infringers' conduct is tricky. It seems to prove too much. As Jane Ginsburg has observed, activities that copyright law brands infringing might enable subsequent creation, but "the same might be said of everything, from works of authorship to cups of coffee, that becomes an input in a prospective author's creative process."²²⁶ Before the idea of learning by copying can be operationalized, it needs a limiting principle.

The copy process supplies one. Some processes are simply more likely to cultivate expertise in the field than others. Repainting a painting is not the same as scanning it. Restaging a photograph is not the same as photocopying it. Rerecording a track of music is not the same as cutting and pasting it. For each, the former engages more deeply than the latter with the content of the copied work, looking underneath the hood to see how it works. Generally speaking, the act of retracing a predecessor's creative steps sows more know-how about the work than does the act of duplicating the work through a keystroke or two.

If copyright doctrine could differentiate between the processes through which a copy is produced, it could select for those activities that are most apt to underwrite future creativity. That kind of sorting isn't unprecedented. Indeed, it is precisely what trade secret law does already. Trade secrecy's improper means doctrine, discussed above,²²⁷ attempts to separate what one court has called the "inventive" copy processes from the "sterile wealth redistributive—not productive" ones.²²⁸ Case law shows special solicitude for reverse engineering largely because of its dynamic benefits for skill development and incremental innovation.²²⁹ Were copyright doctrine to feature a similar policy lever, it could carve out some space for educative copying without needing to throw up its hands and declare all copying fair game.

D. Administrative Costs

The previous three sections introduced the benefits of empowering

226. Jane C. Ginsburg, *Fair Use for Free, or Permitted-But-Paid?*, 29 BERKELEY TECH. L.J. 1383, 1389 (2014).

227. See *supra* text accompanying notes 59–63.

228. Rockwell Graphic Sys. v. DEV Indus., 925 F.2d 174, 178 (7th Cir. 1991). See *supra* note 61; see also Gerard N. Magliocca, *Ornamental Design and Incremental Innovation*, 86 MARQ. L. REV. 845, 883–84 (2003) (arguing that trade secret law sets a good model for the protection of industrial design because "the focus should be on channeling would-be copiers into conducting independent research rather than allowing them to engage in relatively unproductive activities such as industrial espionage or copying simpliciter").

229. See *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141, 160 (1989).

courts to discriminate among copy processes. But, as usual, there's a catch. Judging a product on its face is simpler than trying to piece through testimony or paper trails concerning production methods.²³⁰ Both the potential plaintiffs monitoring possible infringement and the courts that ultimately adjudicate any disputes would have an easier time if process were kept out of the picture entirely.

Anxiety over administration costs has long appeared in debates over whether infringement should require copying to begin with, the first question of process sensitivity.²³¹ Defenders of patent liability's conflation of imitative and independent development often point to the heavy cost of correctly distinguishing one from the other. As early as 1837, for example, a patent treatise contended, "It is a matter of too much difficulty and intricacy of proof, to distinguish the cases of others who have made the same invention without any assistance from his ingenuity, from those of mere imitations. The law, in order to be practicable and convenient to be administered, must give the exclusive right."²³² That same concern continues in today's patent policy discussions.²³³

Copyright is spared a similar fate because of the relative infrequency with which separate authors independently create substantially similar expression.²³⁴ But were the copyright infringement test to ask not just whether but also *how* copying was done, it would invite a different challenge. By definition, anyone asserting a "proper means" defense would

230. See, e.g., Douglas Lichtman, *Copyright as a Rule of Evidence*, 52 DUKE L.J. 683, 705–08 (2003) (discussing the evidentiary difficulty of determining the creation process of outwardly similar works); Roin, *supra* note 57, at 705 (describing the challenges that the government faces in obtaining information on firms' imitation costs).

231. See *supra* text accompanying notes 16–18.

232. WILLARD PHILLIPS, THE LAW OF PATENTS FOR INVENTIONS 6 (1837) (quoted in Liivak, *supra* note 17, at 1675).

233. See, e.g., John F. Duffy, *Inventing Invention: A Case Study of Legal Innovation*, 86 TEX. L. REV. 1, 9 (2007) ("An independent-invention defense would also present difficult administrative problems because courts would have a difficult time distinguishing between true and false claims of duplication."); Richard A. Posner, Essay, *Misappropriation: A Dirge*, 40 Hous. L. Rev. 621, 626 (2003) (arguing that patent law's lack of an independent-invention defense is cost-justified because of "the difficulty of determining independent discovery by the methods litigation and the resulting likelihood that the courts would commit many errors in adjudicating patent infringement claims in cases in which independent discovery was the defense").

234. See Duffy, *supra* note 233, at 9 (explaining that copyright can afford an independent creation defense because "in the copyright area, claims of true independent duplication are much more rare"); Lichtman, *supra* note 230, at 705 ("An originality requirement . . . empowers courts to exclude from the copyright system a particularly messy class of cases: cases in which courts would not be able to use similarity as the basis for even a weak inference regarding the likelihood of impermissible copying.").

concede an act of copying. The court would then need to determine whether manner of the copying excuses it. Sorting among copyists would cost private monitoring resources for copyright owners considering whether to go to court and public adjudicative resources once they got there. The “Hope Poster” copyright litigation,²³⁵ with its protracted back and forth over whether the defendant used a series of simple Adobe Photoshop edits or instead a more labor-intensive method, offers a glimpse at the work courts might need to do if improper means became an infringement factor.²³⁶

Nevertheless, there’s good reason to expect that such sorting wouldn’t significantly tax the copyright system if it became part of the law. First of all, one needs to consider the baseline against which any such change would be measured. In order to rule on a fair use defense, a court must already consider a host of contextual factors. Why did the copyist copy?²³⁷ What value did it add to the copied material?²³⁸ How significant—both quantitatively and, more opaquely, qualitatively—was the material that the copyist used?²³⁹ How would a reasonable observer evaluate the resulting work?²⁴⁰ In order to answer these existing questions properly, courts need to look at more than just the works themselves. They need to peer behind the curtain and look at the defendant’s background and goals, relevant market customs, and audience expectations. The marginal burden of asking courts to look at copy process alongside these other matters should be manageable. The same evidence that establishes why the defendant copied may in many cases establish how the defendant copied. Moreover, where copyists have expressive reasons for adopting a particular process, proof of that process

235. *Fairey v. Assoc. Press*, No. 09 Civ. 1123 (S.D.N.Y.).

236. *See supra* text accompanying notes 83–88.

237. *See* 17 U.S.C. § 107(1); *Blanch v. Koons*, 467 F.3d 244, 252 (2d Cir. 2006) (finding fair use where the defendant’s purposes in using the owner’s image were “sharply different” from the owner’s goals in creating it).

238. *See Blanch*, 467 F.3d at 251–52 (finding fair use more likely if “the secondary use adds value to the original—if copyrightable expression in the original work is used as raw material, transformed in the creation of new information, new aesthetics, new insights and understandings” (internal brackets and quotation marks omitted)).

239. *See* 17 U.S.C. § 107(3); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 587 (1994) (concluding that the fair use test requires courts to devote “thought not only about the quantity of the materials used, but about their quality and importance”); *Harper & Row Publ’ns v. Nation Enters.*, 471 U.S. 539, 569 (1985) (reversing lower court’s finding of fair use, notwithstanding the defendant’s quantitatively small excerpt, because the court had “accorded too little weight to the qualitative importance of the quoted passages of original expression”).

240. *See Cariou v. Prince*, 714 F.3d 694, 707 (2d Cir. 2013) (holding that courts weighing defenses of transformative fair use must “examine how the artworks may reasonably be perceived” (internal quotation marks omitted)).

will often be readily available. Indeed, in many of the cases reviewed in this Article, the copyists deliberately disclosed that evidence to the public.

Concerns about proof could be further addressed through burden shifting. Placing the burden of production on the defendant is sometimes offered as a possibility for patent law under a proposed independent invention regime. Judge Learned Hand, for example, made the suggestion while testifying before the Senate Subcommittee on Patents, Trademarks, and Copyrights in 1956.²⁴¹ Recognizing the possibility that patentees would struggle to prove that an accused infringer had copied rather than developed the same invention independently, Judge Hand proposed that “[i]f the patentee brought the infringer to court and showed the infringer was making the same thing, you might throw the burden on the supposed infringer to show that he did not have to have recourse to the patent in order to do what he did.”²⁴²

Whatever logistical complexity might have been involved in implementing Judge Hand’s proposal, placing the burden on copyright defendants to show their copy processes would be far simpler. Unlike Judge Hand’s scenario, which requires evidence of a negative (namely, the absence of copying), recreators’ burden would be the cleaner task of proving that they copied in a particular manner. Using a certain copy process lends itself to contemporaneous documentation more easily than does developing a product independently of a predecessor whose existence is not yet known. Defendants alleging a permissible copy process would usually be the least-cost bearers of that burden. Unsurprisingly, then, some courts in trade secret cases shift the burden of production to the defendant whenever it asserts that it derived the plaintiff’s secret information through proper means.²⁴³ Courts in copyright cases could do something similar.

Of course, minimizing the cost of figuring out what the defendant did doesn’t address a separate but substantial question for many copyright owners and downstream users: legal uncertainty. Even if proving historical facts can be done at manageable expense, the legal significance of those facts might still be up for grabs unless clear *ex ante* boundaries are drawn. As the

241. *The American Patent System: Hearings Before the Subcomm. on Patents, Trademarks, and Copyrights of the S. Comm. on the Judiciary*, 84th Cong. 114–15 (1956) (testimony of Judge Learned Hand).

242. *Id.* at 114.

243. See, e.g., *Pioneer Hi-Bred Int’l v. Holden Foundation Seeds, Inc.*, 35 F.3d 1226, 1240 (8th Cir. 1994); *Faiveley Transp. Malmo AB v. Wabtec Corp.*, 572 F. Supp. 2d 400, 406 (S.D.N.Y. 2008), *vacated on other grounds*, 559 F.3d 110 (2d Cir. 2009); *Combs & Assocs. v. Kennedy*, 555 S.E.2d 634, 639 (N.C. Ct. App. 2001); *Integrated Cash Mgmt. Servs., Inc. v. Digital Transactions, Inc.*, 732 F. Supp. 370, 377–78 (S.D.N.Y. 1989).

familiar rules versus standards debate teaches, however, such clarity must be traded off against flexibility.²⁴⁴ As I argue in Part III, harnessing the flexible fair use doctrine as copyright's vehicle for applying an improper means doctrine has much to commend it—both because of the large diversity of possible dispute scenarios and also because no new legislation would be needed. But if the law were to go the fair use route, one might fairly wonder if it would ultimately shortchange downstream users by making the fair use inquiry that much more complicated.²⁴⁵ Indeed, any suggestion of broadening the range of information that's fair game for fair use tends to bring out similar objections.²⁴⁶

My answer is threefold. First, the uncertainty objection is more a generic critique of the fair use system we already have, not of the improper means inquiry in particular.²⁴⁷ Fair use famously eschews bright-line rules.²⁴⁸ Instead, it calls for a balancing of factors under a flexible rule-of-reason analysis.²⁴⁹ Consequently, the marginal layer of complexity that considering copy process would add to existing fair use doctrine is minimal.²⁵⁰ Second, as additional factors go, the copy process is at least a reasonably straightforward one for downstream users to grasp. Those users have the best information on how they actually copy. That private information stands copy process in stark contrast to other fair use factors that require knowledge of the copyright owner's market or of an audience's likely response to a work.²⁵¹ Those factors require much more predictive

244. See generally Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1992).

245. See Joseph P. Liu, *Copyright and Time: A Proposal*, 101 MICH. L. REV. 409, 476 (2002) (“As a general matter, we prefer to have clear entitlements, since clarity reduces both the potential for, and the cost of, disputes.”).

246. See, e.g., Justin Hughes, *Fair Use Across Time*, 50 UCLA L. REV. 775, 797 (2003) (noting the criticism “That's all we need—another dial on the fair use control panel” in response to a proposed additional fair use factor).

247. See, e.g., Gideon Parchomovsky & Kevin A. Goldman, *Essay, Fair Use Harbors*, 93 VA. L. REV. 1483 (2007).

248. See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577 (1994) (cautioning that the fair use test “is not to be simplified with bright-line rules, for the statute, like the doctrine it recognizes, calls for case-by-case analysis”).

249. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 448 (1984).

250. Cf. Greg Lastowka, *Digital Attribution: Copyright and the Right to Credit*, 87 B.U. L. REV. 41, 86 (2007) (contending that adding a fifth “attribution” factor wouldn't make fair use more “fuzzy” than it already is and would “focus [courts'] attention on this important matter, but at the same time would not bind them”); Liu, *supra* note 245, at 476 (arguing that considering an additional factor “would in fact add little appreciable uncertainty beyond the levels that already exist in copyright law more generally”).

251. See 17 U.S.C. §§ 107(1), (4); *Cariou v. Prince*, 714 F.3d 694, 707 (2d Cir. 2013); see also Hughes, *supra* note 246, at 798 (making similar argument with respect to

guesswork than copy process would.

Third, and perhaps most importantly, if some cases are already smuggling in process considerations as it is, recognizing copy process would make the fair use calculus more—not less—transparent. As I’ve argued above, both experimental evidence and occasional judicial rhetoric suggest that a copyist’s labor can influence decision-makers’ evaluation of the copy.²⁵² If that’s right, then the best way forward would be to bring that consideration out into the open, where it can be better understood.²⁵³ Despite the additional complexity that an additional factor would bring, it may ultimately make outcomes easier to follow and predict.

III. INTRODUCING IMPROPER MEANS TO COPYRIGHT LAW

Although copyright doctrine doesn’t currently consider the defendant’s process, this Article’s suggested intervention is relatively modest. Through the fair use doctrine, copyright law already measures the welfare effects of allowing particular instances of copying. “[A] use that generates value for the ‘broader public interest,’” as one recent case concluded, “weighs in favor of fair use.”²⁵⁴ In determining this broader public interest, courts favor various kinds of products, be they parodies,²⁵⁵ thumbnail images in search engine results,²⁵⁶ or incidental snippets of copied material.²⁵⁷ I propose that they favor various kinds of processes as well.

Importantly, courts don’t need any new legislative authority to start

downstream users’ knowledge of how much of the work’s copyright term has so far elapsed); Liu, *supra* note 245, at 476–77 (same).

252. See *supra* sections I.B & II.B.

253. Cf. Balganesh et al., *supra* note 180, at 288 (observing that if juries care about the original creator’s labor even when copyright law doesn’t, “the law could embrace the reality that moral intuitions relating to labor and free-riding directly influence the assessment of similarity, which in turn serves as a simple proxy for wrongfulness”).

254. *Assoc. Press v. Meltwater U.S. Holdings, Inc.*, 931 F. Supp. 2d 537, 552 (S.D.N.Y. 2013) (quoting *Blanch v. Koons*, 467 F.3d 244, 253 (2d Cir. 2006)); *see also* *Am. Geophysical Union v. Texaco Inc.*, 60 F. 3d 913, 922 (2d Cir. 1994) (“[C]ourts are more willing to find a secondary use fair when it produces a value that benefits the broader public interest.”).

255. E.g., *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994) (noting that parody “can provide social benefit, by shedding light on an earlier work, and, in the process, creating a new one”).

256. E.g., *Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 820 (9th Cir. 2003) (permitting reproduction of thumbnails because they “do not supplant the need for the originals” and simultaneously “benefit the public by enhancing information-gathering techniques on the internet”).

257. E.g., *Jackson v. Warner Bros., Inc.*, 993 F. Supp. 585 (E.D. Mich. 1997); *Italian Book Corp. v. Am. Broad. Cos.*, 458 F. Supp. 65 (S.D.N.Y. 1978).

counting copy process in the infringement analysis. This Article’s proposal is ready to use right out of the box. The first statutory factor of the fair use test already tells judges to consider the “character of the use.”²⁵⁸ Courts have interpreted that provision capacious, invoking it to examine not only whether the defendant’s use was commercial (which is specified in the statutory text) but also whether the use was transformative (which isn’t).²⁵⁹ There is nothing about the text that cabins it to the defendant’s product. Quite the opposite. The defendant’s “use” is an action, not a result. It makes at least as much sense for the word “use” to cover the defendant’s process as it does the defendant’s product.²⁶⁰ Perhaps the only reason courts have yet to interpret it this way is that they lacked a justification to do so.

Thus far, this Article has sought to provide that missing justification. The remainder briefly sketches out how things might work in practice. Though trade secret law is a helpful template for the existence of a policy lever that assesses the means of copying, on the finer details of implementation copyright must part ways. As a general matter, the trade-secret analogy breaks down in spots where permitting recreation (or the subsequent exploitation of an existing recreation) would destroy the economic incentives that justify copyright’s grant of an exclusive right to begin with. Those spots, as I’ve argued above, are nowhere near as pervasive as conventional copyright theory suggests, but they do exist. The following subsections examine them.

A. *Subject Matter Limitations*

An improper means inquiry could take several forms. The definition of improper means could be made either a rule or a standard. Separately, the absence of improper means could be a complete defense or merely a thumb on the scale. Trade secrecy’s approach to reverse engineering chooses the first option on each, establishing a standalone rule: if you reverse engineer, you’re in the clear.²⁶¹ It doesn’t distinguish based on product or industry. So

258. 17 U.S.C. § 107(1).

259. *See, e.g.*, *Bouchat v. Baltimore Ravens Ltd. P’ship*, 737 F.3d 932, 939 (2013).

260. *Cf. Heilman v. Bell*, 583 F.2d 373, 376 (7th Cir. 1978) (rejecting an attempt to fit mechanical duplication within the 1909 Act’s compulsory license governing cover songs because, even though there was similarity “in the end product” there was still “no similarity in the ‘use’ of the composition” as required by statute (quoting 17 U.S.C. § 1(e) (1970)).

261. Other forms of derivation are judged according to an open-ended reasonableness standard. *See E. I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1016 (5th Cir. 1970) (“A complete catalogue of improper means is not possible. In general they are means which fall below the generally accepted standards of commercial morality and

long as the model containing the information being reverse engineered was itself acquired lawfully, the means are proper.²⁶²

Trade secret law can afford that open-tent approach on the back-end infringement inquiry because it is selective on the front-end protectability inquiry. Only information that is difficult to ascertain through proper means is eligible for trade secret protection to begin with.²⁶³ As a result, there wouldn't be any right to infringe unless the act of reverse engineering was necessarily hard to do.

Copyright protection, by contrast, extends to works regardless of how easy they are for another to recreate.²⁶⁴ All that's needed is, in the Supreme Court's formulation, "independent creation plus a modicum of creativity."²⁶⁵ That means the ease, audience reception, and learning benefits of recreation will all vary according to the medium involved. Across such a wide range of subject matter, copy process won't always be a meaningful factor. The key question is whether the act of recreation requires technical skill. Repainting a painting, refilming a movie, or rerecording a musical composition fit neatly within this Article's framework. Copying out in longhand the text of a poem, which costs little and probably teaches little about writing poetry, does not.²⁶⁶ An exact recreation of a verbal text doesn't impress most people the way that an exact recreation of visual or cinematic works do (try copying out this article with a pen and paper and see how many people celebrate your achievement).²⁶⁷ Courts must therefore stay attuned to the welfare effects of particular processes, just as they do with particular products.

reasonable conduct." (quoting RESTATEMENT (FIRST) OF TORTS § 757 cmt. f (1939))).

262. See U.T.S.A. § 1 comment ("The acquisition of the known product must, of course, also be by a fair and honest means, such as purchase of the item on the open market, for reverse engineering to be lawful.")

263. See *id.* § 1(4)(i).

264. See *supra* note 107.

265. *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 361 (1991).

266. This isn't to say that copying others' writing always lacks pedagogical value. Jack London, for example, reportedly acquired his chops by copying out great literature in the San Francisco public library word for word, focusing on what made each sentence tick. See SUSAN WEIS BAUER & JESSIE WISE, *THE WELL-TRAINED MIND: A GUIDE TO CLASSICAL EDUCATION AT HOME* 64 (3d ed. 2009). But most people can at least recreate a written text without having to focus on technical craft; it's hard to say the same of capturing the precise brushstrokes of a painting or the dynamics of a musical performance.

267. *But see* Jorge Luis Borges, *Pierre Menard, Author of Don Quixote*, in *FICCIONES* 29 (Anthony Bonner & Emecé Editores trans., 1993) [1939] (offering a fictional account of a *Don Quixote* recreator who tries to rewrite the book word for word not by copying the text but by deriving inspiration from life experiences, including an initial attempt to "[l]earn Spanish, return to Catholicism, fight against the Moor or Turk, forget this history of Europe from 1602 to 1918—be Miguel Cervantes").

Trade secrets have another homogeneity that copyright subject matter lacks. They all derive their economic value from being kept secret.²⁶⁸ So long as they remain generally unknown, they are valuable, even if a handful of third parties successfully reverse engineer the information for their private benefit. Copyrightable works, on the other hand, derive economic value in different ways, some of which are more affected by recreations than others. Take, for instance, a script for a play. Although there may be a small market for reproductions of the script itself, its primary value comes from the exclusive right to perform it on stage. It may very well be that bringing the play to life is difficult and time-intensive, educative for the performers, and appreciated by audiences in a way that a filmed copy of another's performance isn't—all facts that would weigh in favor of allowing a recreation. And yet doing so would eviscerate the market for the original script. Authors who depend on income from performances are more vulnerable to unauthorized recreations, since recreations are, at bottom, performances.²⁶⁹

Generally speaking, then, copy process should matter most in industries that don't rely heavily on licensing recreative performances. This suggested rule is simply an extension of the well-established copyright principle that “[a] market harm for licensing revenues will only be recognized if the market is ‘traditional, reasonable, or likely to be developed.’”²⁷⁰ The primary beneficiaries would likely be those working in visual media—painting, graphic design, film, and the like. Musical compositions would also have been affected if they weren't already subject to the compulsory “cover” license under § 115 of the Copyright Act.²⁷¹

B. Derivative Works

Another question is how to handle translations into new languages or new media. The Copyright Act grants owners the exclusive right to prepare not only literal reproductions but also “derivative works,”²⁷² a category that expressly includes translations, dramatizations, and motion picture versions.²⁷³ Yet these works seem to carry all the benefits of recreations as I

268. See U.T.S.A. § 1(4)(i).

269. See *supra* text accompanying note 184.

270. *Bill Graham Archives v. Dorling Kindersley Ltd.*, 448 F.3d 605, 614 (2d Cir. 2006).

271. 17 U.S.C. § 115. See *supra* text accompanying notes 114–119.

272. 17 U.S.C. 106(2).

273. *Id.* § 101. The definition also includes “art reproductions,” *id.*, which might at first suggest that Congress specifically foreclosed a use that I've offered here as a paradigmatic recreation when done from scratch. That reading of the statute, however,

have defined them here. Translating well, whether from English to German or from novel to cinema, is extremely difficult. It also cultivates great skill.²⁷⁴ Why then shouldn't it be allowed? Or, put differently, why don't the exceptions that I've advanced in this Article swallow the derivative work right whole?

Part of the answer may simply be that, even taking into account recreations' value, the benefits of allowing authors to control derivative works still outweigh the benefits of letting anyone make them. The derivative work right can incentivize original creation,²⁷⁵ permit authors to craft sequels and spinoffs without needing to rush them to market,²⁷⁶ and push downstream users to make more creative use of existing cultural materials.²⁷⁷ But each of those justifications is strongest when applied to the markets that the creator of the original work can reasonably expect to reach.²⁷⁸ To the extent that recreating a work is beyond those reasonable expectations, there's less reason to label it infringement.²⁷⁹ Developing a novel into a movie, for example, is well within the heartland of uses that many novelists anticipate.²⁸⁰ Recreating the same movie from scratch isn't. There will also be certain transformations between media that are similarly

would be too broad. The word "reproduce," which the statute does not define, is the operative verb in the provision granting the owner basic right to make copies. *See id.* § 106(1). There's no good reason to read "art reproduction" as any more impervious to fair use considerations than the reproductions of any other work. Thus, in analyzing fair use arguments, the statute leaves courts as free to distinguish between the copy processes of "art" as of any other kind of work.

274. Indeed, early case law allowed unlicensed translations because of the intellectual labor involved. *See Stowe v. Thomas*, 23 F. Cas. 201 (C.C.E.D. Pa. 1853) ("To make a good translation of a work . . . often requires more learning, talent and judgment, than was required to write the original. Many can transfer from one language to another, but few can translate."). That rule lasted until 1870, when Congress amended the copyright statute to give owners the ability to control translations. Copyright Act, ch. 230, § 86, 16 Stat. 198, 212 (1870).
275. *See* Pamela Samuelson, *The Quest for a Sound Conception of Copyright's Derivative Work Right*, 101 GEO. L.J. 1505, 1527–33 (2013).
276. *See id.*
277. *See* Michael Abramowicz, *A Theory of Copyright's Derivative Right and Related Doctrines*, 90 MINN. L. REV. 317 (2005); Joseph P. Fishman, *Creating Around Copyright*, 128 HARV. L. REV. 1333 (2015).
278. *See Samuelson, supra* note 275, at 1521 (noting that a common denominator of derivative works is that they are all "aimed at clearly foreseeable markets to the works on which the derivatives are based").
279. *See id.* at 1559–60 (explaining how the more unforeseeable the market, the less compelling the various rationales for the derivative work).
280. *See id.* at 1529 ("Novelists and playwrights frequently expect their works to be transformed into movies or translated from one language to another. Screenwriters and novelists often anticipate having their works adapted for the stage.").

remote, like a three-dimensional restaging of a photographed scene.²⁸¹ Though the derivative work right covers widely foreseeable kinds of translation, it shouldn't include such distant activity.

Moreover, audiences' process preferences are probably weaker for the average derivative work than for the average close copy. Recall that audiences often value recreations precisely because they are the work of someone other than the original author.²⁸² Seeing a second comer skillfully replicate an author's creation tends to be more rewarding than seeing the author do the same thing twice. That's not necessarily the case with derivative works. An audience may value a work recast in a new medium regardless of whether the original author is the one doing the recasting. The justification for allowing recreations is thus somewhat stronger for close copies.

C. Post-Copying Use

A third set of questions revolves around what the copyist may do with a recreation once it's made. In trade secret law, a successful reverse engineer stands on the same footing as the original possessor of the trade secret. She may use or disclose the information however she wishes.²⁸³ In theory, that would allow a single second comer to destroy a trade secret through public disclosure. In practice, however, the law assumes that appropriators "will often have the same incentive as the originator to maintain the confidentiality of the secret in order to profit from the proprietary knowledge."²⁸⁴ As a result, trade secret law can get away with granting lawful appropriators broad leeway for post-appropriation use.

Copyright law can't reasonably make the same assumption. Once someone has laboriously recreated a work, there often enough remains an incentive to use it in ways that are harmful to the owner's primary market. If the law didn't regulate that activity, a copyist could effectively launder

281. See *supra* text accompanying note 168–170.

282. See *supra* text accompanying notes 198–199.

283. See, e.g., *Tabor v. Hoffman*, 23 N.E. 12, 13 (N.Y. 1889); Bone, *supra* note 28, at 250 n.44.

284. *Faiveley Transp. Malmo AB v. Wabtec Corp.*, 559 F.3d 110, 119 (2d Cir. 2009); see also *Samuelson & Scotchmer*, *supra* note 18, at 1658 (noting that trade secret cases seldom need to address a reverse engineer's attempt to publish the secret "because reverse engineers have generally had little incentive to publish or otherwise disclose information they learn from reverse engineering. Reverse engineers have typically kept the resulting know-how secret for competitive advantage."); *Varadarajan*, *supra* note 5, at 1437 ("[T]rade secret disputes often arise between competitors, and neither wants to destroy the secret's value by publishing it").

millions of cheap and even instantaneous duplications through a single laborious recreation. A factory could churn out quick copies based on a handmade “patient zero” copy. Unlike a transformative fair use, a purely process-based fair use does not generate a new work that its author is fully free to exploit. The recreator’s fair use right shouldn’t guarantee a subsequent right to duplicate the work endlessly.²⁸⁵ Rather, post-recreation use, like any use of another’s copyrighted work, should be judged according to the standard fair use factors. Those factors leave room for communicating a recreation to others on a small scale, even if they don’t provide carte blanche for all forms of commercial exploitation.²⁸⁶

Of course, noncommercial copying itself weighs in favor of fair use, raising the question whether it—not copy process—should be doing the real work in my recreation examples. There are, however, two reasons why the commercial use factor doesn’t obviate a copy process factor. First, many fair use cases have interpreted the commercial use concept broadly, extending it to personal uses from which the user derives some nonmonetary benefit without paying the customary market price.²⁸⁷ Downloading a free mp3 file for your private consumption counts.²⁸⁸ By that rationale, it seems reasonable to say that recreating a Picasso and then hanging it on the wall for your private admiration should count, too. After all, the copyist in either case avoids compensating the owner for the reproduction. Incorporating copy process into the analysis could uncouple the recreator from the

285. One could plausibly imagine a different model based on the § 115 compulsory license, which specifies a minimum royalty rate for duplications of a musical work’s recorded performance. Congress could legislate a similar licensing scheme for multiple fields besides music, where a second comer puts in the work to recreate the original and in return can rely on a statutorily mandated licensing scheme without needing to worry about the owner holding out. The details of such an alternative, legislative solution would be difficult to get right—even on the music side, where the system has been in place for over a century, there exists profound disagreement over whether the compulsory license ought to be scrapped or at least overhauled in any of several divergent directions. See U.S. COPYRIGHT OFFICE, COPYRIGHT AND THE MUSIC MARKETPLACE 105–14 (2015). Consequently, the merits of any proposed compulsory licensing scheme are beyond the scope of this Article.

286. See Joseph P. Liu, *Copyright Law’s Theory of the Consumer*, 44 B.C. L. REV. 397, 413 (2003) (observing that fair use permits modest modifications to existing works “even if communicated to others, particularly if the use is noncommercial and poses no harm to the market”). A firm that recreated the same work on an industrial scale may fail this test. For an existing example of this business model that’s limited to public-domain works, see 1st Art Gallery, <http://www.1st-art-gallery.com/>.

287. See, e.g., *Harper & Row Publ’ns, Inc. v. Nation Enters.*, 471 U.S. 539, 562 (1985).

288. *BMG Music v. Gonzalez*, 430 F.3d 888, 890–91 (7th Cir. 2005); *A & M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1015 (2001); *Sega Enters. Ltd. v. MAPHIA*, 857 F.Supp. 679, 687 (N.D. Cal. 1994).

downloader. Second, even if some recreations are indeed noncommercial uses, overlapping factors are still useful as fail-safes. Given the muddy nature of fair use analysis, policymakers may be better off shielding welfare-enhancing recreations behind multiple factors rather than banking on noncommercial use alone.²⁸⁹

A final point is that attribution looms particularly large in this sphere. Although copyright law does not require providing attribution to one's source, courts have occasionally held that doing so weighs in favor of fair use.²⁹⁰ Usually, the concern is that a copyist won't credit the original author, and certainly that concern remains for recreators just as much as for duplicators.²⁹¹ But given the acute potential for forgery, an even greater worry should be that recreators may attempt to pass off their work as the original. To address that possibility, courts could discount a fair use argument if the defendant hasn't identified a recreation as such.²⁹²

CONCLUSION

Because “[n]ot all copying . . . is copyright infringement,”²⁹³ copyright cases necessarily involve a normative judgment concerning which copying should be regulated and which shouldn’t.²⁹⁴ In this Article, I’ve argued that

289. Cf. John M. Golden, *Redundancy: When Law Repeats Itself*, 94 TEX. L. REV. (forthcoming 2016).

290. See, e.g., *Weissmann v. Freeman*, 868 F.2d 1313 (2d Cir. 1989) (holding that by “neglect[ing] to credit [a writer] for her authorship of [the work]” and “substituting his name as author in place of hers,” the defendant “severely undermine[d] his right to claim the equitable defense of fair use”); *Williamson v. Pearson Educ., Inc.*, No. 00 Civ. 8240(AGS), 2001 WL 1262964, at *5 (S.D.N.Y. Oct. 19, 2001) (holding that “attribution, coupled with the transformative nature of the defendants’ use of the quoted passages, favors a finding of fair use”); *Haberman v. Hustler Magazine, Inc.*, 626 F. Supp. 201, 211 (D. Mass. 1986) (finding that the “character of the use” factor weighed in the defendant’s favor because he “credited [the owner] with the copyright of the reproduced works and informed readers of how they could buy them from him”); Pamela Samuelson, *Unbundling Fair Uses*, 77 FORDHAM L. REV. 2537, 2579 (2009) (“The defendant’s willingness to attribute the contributions of the first author to the subsequent work has also sometimes favored fair use in authorial fair use cases.”).

291. See, e.g., Joel Rose, *New Paintings Reignite Bob Dylan Copycat Debate*, NPR, Oct. 18, 2011, <http://www.npr.org/2011/10/18/141423977/new-paintings-reignite-the-bob-dylan-copycat-debate> (describing popular backlash against Bob Dylan when it was revealed that his paintings were copied from historical photographs rather than from nature, as he had claimed).

292. Cf. Jonathan Jones, *supra* note 211 (interviewing a copyist artist who signs her name to the back of each replica public-domain painting in order to head off any forgery concerns).

293. *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 361 (1991).

294. See Shyamkrishna Balganesh, *The Normativity of Copying in Copyright Law*, 62 DUKE

this judgment should be based on copying's processes, not just its products. Copyright's fair use inquiry has grown to encompass almost all of the five W's. Courts ask what was copied and what (if anything) was created with it. They ask who did the copying. They ask why that copying was done. There have even been repeated calls for courts to ask when during the copyright term the copying was done.²⁹⁵ Asking how the copying is done, on the other hand, remains conspicuously absent.

But how matters. It matters to the ones recreating existing works. It matters to the ones whose works are being recreated. And it matters to the audiences experiencing those recreations. Indeed, beneath copyright's black-letter veneer, some judges may already be feeling copy process's influence as audience members themselves.

The conceptual move of recognizing copy process's effect on each of these groups is a simple but deeply significant one. As the easiest way to copy keeps getting easier, copyright law has affected an increasing range of activities across an increasing range of works. There ought to be some mechanism for courts to recognize—just as they are able to recognize in trade secret law—that some cases aren't about the easiest way. Some means of copying predictably lead to better ends than others. The law should be able to tell the difference.

L.J. 203, 206 (2012).

295. See Hughes, *supra* note 246; Liu, *supra* note 245.