UNDERSTANDING INTELLECTUAL PROPERTY: EXPRESSION, FUNCTION, AND INDIVIDUATION

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ABSTRACT

Underlying the fundamental structure of intellectual property law — specifically, the division between copyright and patent law — are at least two substantive philosophical assumptions. The first is that artistic works and inventions are importantly different, such that they warrant different legal systems: copyright law on the one hand, and patent law on the other. And the second is that particular artistic works and inventions can be determinately individuated from each other, and can thereby be the subjects of distinct and delineated legal rights. But neither the law nor existing scholarship provides a comprehensive analysis of these categories, what distinguishes them, or why their distinctions should matter to law.

This Article seeks to substantiate and unify these assumptions, taking the most striking doctrinal difference between copyrights and patents as its theoretical starting point: namely, that copyright law has an independent creation defense while patent law does not. Endeavoring to vindicate this doctrinal distinction with a theory of what distinguishes the paradigmatic subject matters of copyrights and patents, this Article defends the view that artistic works are author-individuated, while inventions are structure-indi-

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viduated. It draws on philosophical thinking, thought experiments, and existing practices surrounding expression and functionality to argue that, although two distinct inventive acts can result in the very same invention, two distinct acts of authorship — even ones resulting in works that are "structurally" identical — cannot result in the very same artistic work, because the identity of the author in part makes the work what it is. The Article explains how these "individuation theses" vindicate, not just copyright and patent law's differential treatment of independent creation, but other core features of intellectual property's defining bifurcation, and then goes on to analyze the theses' implications for different theories of what justifies intellectual property rights. Finally, the Article explores aspects of existing law that might be in tension with this conception of artistic works and inventions and thus ought to be revised to better reflect and incorporate it, if the individuation theses are indeed getting things right.

INTRODUCTION

If Shakespeare had died as a child we should never have had Hamlet, but if Newton had died as a child we should certainly have calculus today.[1]

Although copyright and patent law both grant exclusive rights in intellectual objects — otherwise known as *intellectual property* rights — they are purported to have fundamentally different domains.[2] Copyright law allocates rights in *artistic works* broadly understood, including (but not limited to) songs, novels, paintings, and films,[3] whereas patent law allocates rights in *functional inventions*, paradigmatic examples including machinery, electronic devices, and pharmaceuticals.[4] The requirements for protectability under each domain of law also are very different. While an artistic work need only be original and made with a "modicum of creativity" in order to be copyrightable,[5] an invention seeking patent protection must be shown to be useful, novel, and nonobvious, such that the subject matter of patents is held to different — and higher — bar than of copyrights for protection.[6] On the other hand, copyright law's scope of protection is far more limited than that of patent law. For one thing, copyright

[1] Paul Goldstein, *Infringement of Copyright in Computer Programs,* 47 U. PITT. L. REV. 1119, 1123 (1986) (quoting Brad Efron, Stan. U. Campus Rep., May 2, 1984, at 5-6).

[2] *E.g.*, Christopher Buccafusco, *A Theory of Copyright Authorship*, 102 VA. L. REV. 1229, 1239–40 (2016) (describing this distinction); Jeanne C. Fromer, *A Psychology of Intellectual Property,* 104 NW. U.L. REV. 1441, 1446, 1449–50 (2010) (same).

[3] 17 U.S.C. § 102.

[4] *Id.* § 101. For the duration of this Article, note that my discussion of patent law concerns utility patents specifically, unless otherwise specified.

[5] Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 346 (1991) (holding that information alone without a modicum of original creativity cannot be protected by copyright, and therefore that Rural's telephone directory was not copyrightable).

[6] 35 U.S.C. §§ 101–103 (requiring that patent-eligible inventions be a "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof," that is also not "obvious . . . to a person having ordinary skill in the art").

protects only the *expression* of the work, not any facts, functionality, ideas, or "stock" elements it might also contain. Moreover, copyright law recognizes an independent creation defense, which means that copyrights are enforceable only against individuals who have *actually copied* another's protected work, rather than ones who independently makes a work looking substantially similar.[7] In contrast, patent law grants inventors a comparatively strong right in the protected invention, for even independent subsequent inventors — ones demonstrably without access to or knowledge of the earlier inventors' work — nonetheless are barred from utilizing the invention and defenseless against an infringement claim.[8]

Thus, the structure of intellectual property law supposes, expressive and functional works are fundamentally different sorts of entities, thereby warranting different legal rights and rules. But what exactly are these differences, and why should they matter to our legal systems? Although the doctrine establishes and safeguards this division of labor, it does not provide an analysis of either category or fully articulate what defines or distinguishes them.[9] Moreover, while some scholars have attempted to make sense of the distinctions between copyright and patent law and thereby vindicate the bifurcation of intellectual property doctrine,[10] the difficulty

7 Castle Rock Entm't, Inc. v. Carol Publ'g Grp., Inc., 150 F.3d 132, 137 (2d Cir. 1998) (noting that establishing copyright infringement requires demonstrating actual copying).

8 *See* 35 U.S.C. § 271(identifying actions that constitute an infringement of patent); Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 490 (1974) ("While trade secret law does not forbid the discovery of the trade secret by fair and honest means, *e.g.,* independent creation or reverse engineering, patent law operates 'against the world,' forbidding any use of the invention for whatever purpose for a significant length of time.").

9 *See, e.g.,* Fromer, *supra* note at 1442 ("Making sense of this discrepancy is an important but undertheorized issue, critical to structuring intellectual property laws' protectability standards.")

10 *See, e.g.,* Fromer, *supra* note 1 at 1483–508 (2010) (arguing that the differences between copyright and patent law reflect differences in the psychology of creativity and innovation associated with different types of products); Jonathan Masur & David Fagundes, *Costly Intellectual Property*, 65 VAND. L. REV. 677 (2012) (summarizing the various ways that costs associated with patent and copyright regimes affect social welfare); Christopher Buccafusco, *Making Sense of Intellectual Property Law*, 97 CORNELL L. REV. 501 (2012) (arguing that copyright and patent can be understood as establishing a dichotomy between two different groups of human sense, with copyright traditionally involving objects addressed to the senses of sight and hearing, while products appealing to touch, taste, and smell are the province of utility patent law); Mark P. McKenna & Christopher J. Sprigman, *What's In, and What's Out: How IP's Boundary Rules Shape Innovation*, 30 HARVARD J. OF L. & TECH. 491 (2017) (analyzing the undertheorized boundaries and aims of utility patent law and what they should mean for other areas of intellectual property law).

in doing so has left others with understandable skepticism about whether any coherent analysis or defense can even be made, particularly in light of the many intellectual artifacts that have expressive and functional overlap.[11] And yet, this question — if it can even be answered — has only become more pressing in our increasingly electronic world; for as intellectual works continue to accelerate past physical ones in their value, significance, and reach in all aspects of modern life, any exclusive rights granted in them also become more important to understand, justify, and tailor.

In fact, taking a step back from intellectual property doctrine to examine its theoretical underpinnings, we find at least two implicit and related philosophical assumptions presupposed by its defining bifurcation and structure. The first, as we have seen, is that the categories of *expressive* and *functional* works are different in a normatively significant respect, such that they warrant differently structured legal regimes: copyright on the one hand, and patent on the other. And the second is that *particular* expressive and functional works can be determinately *individuated* from each other, and can thereby be the subjects of distinct and delineated legal rights. Yet, although both of these assumptions are quite intuitive at first blush, much more must be said in order to develop and defend them. For instance, it is natural to think that different novels, pieces of music, or pharmaceutical drugs can be distinguished from each other — such that authors and inventors can hold copyrights or patents in *specifically* their own creation — but it is much harder to state exactly what it takes for two abstract works to be distinct. Surely it is not a matter of immaterial variations: if I merely staple three pages of original poetry to the back of *The Catcher in the Rye* and then sell copies of it, for instance, I am still selling copies J.D. Salinger's novel.[12] And if I attach a PopSocket to an iPhone and then produce replicas of this composition, I am still producing counterfeit iPhones. But the question still remains as to exactly *how* we individuate — not as a matter of existing intellectual property doctrine, but as a prior *conceptual* and *normative* matter — intellectual artifacts like *The Catcher in the Rye* and iPhones. Similarly, while it is intuitive to believe that artistic works and inventions — the paradigm examples of expressive and functional creations — are fundamentally different in an important respect, it is challenging to specify exactly what this difference is, let alone its normative significance for legal doctrine. No doubt, we might be tempted to answer by saying that inventions — unlike artistic works — are "useful" and leave it at that. But such an answer seems only to pass the explanatory buck, raising the question of what kind of usefulness is pos-

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[11] *See* Part III.D *infra* .

[12] However, we will see how quickly things become more complicated. *See infra* notes 84-88 and accompanying text.

sessed by inventions but not artistic works (since there are of course ways in which artistic works can be useful as well: they can be useful in producing enjoyment for those who consume them, for instance).

Thus, this Article seeks to substantiate and unify intellectual property law's philosophical assumptions, taking the most striking doctrinal difference between copyrights and patents as its fixed theoretical starting point: namely, that copyright law has an independent creation defense while patent law does not. Endeavoring to make sense of this doctrinal distinction by developing a theory of the paradigm subjects of copyrights and patents, this Article defends the view that artistic works are *author-individuated,* while inventions are *structure-individuated*. It draws on philosophical thinking, thought experiments, and existing practices surrounding expression and functionality to argue that, although two distinct inventive acts *can* result in the very same invention, two distinct acts of authorship — even ones resulting it works that are "structurally" identical — cannot result in the very same artistic work, because the identity of the author in part *makes* the work *what it is*. The Article explains how these *individuation theses* vindicate, not just copyright and patent law's differential treatment of independent creation, but other core features of intellectual property's defining bifurcation, and then goes on to analyze their implications for different theories of what justifies intellectual property rights. Finally, the Article explores aspects of existing law that might be in tension with this conception of artistic works and inventions and thus perhaps ought to be revised to better reflect and incorporate it, if the individuation theses are indeed getting things right.

Part I provides the relevant background on intellectual property law and scholarship, canvassing the scopes, structures, and subject matters of copyrights and patents, as well as the limitations of any existing attempts at analyzing their defining differences in either doctrine or scholarship; and in so doing, it lays bare the question of whether the contrasting designs of copyrights and patents — such as their strikingly contrasting ways of treating independent creation — can be made sense of by a theory of artistic works and inventions themselves. Setting out to construct and defend such a vindicatory theory that takes this doctrinal distinction as its fixed starting point, Part II draws on philosophical work, thought experiments, and existing practices to construct and defend the individuation theses: that artistic works are author-individuated, while inventions are structure-individuated. Finally, Part III reincorporates the individuation theses into intellectual property law and theory. It first explains how these individuation theses cohere with and make sense of, not just copyright and patent laws' divergent rules for independent creation, but their divergent standards and requirements for protectability as well. It then explores ways in which the individuation theses might require existing doctrine to

be reexamined or revised, including aspects of copyright law's infringement standard, patent law's treatment of inventorship, and the copyright/patent divide itself. Finally, the Article concludes with some further complications raised by the individuation theses and intellectual artifacts — including issues of authorship, functionality, and the many categories of intellectual creation — to be explored more deeply in future work.

I. INTELLECTUAL PROPERTY THEORY & LAW

A. Theories of Intellectual Property Rights

The dominant view among American intellectual property scholars is that both copyright and patent law have a purely consequentialist justification, in that they are granted only to incentivize the development of valuable intellectual objects.[13] As the story goes, in the absence of legally enforceable exclusive rights, authors and inventors would lack the economic incentive to make the investments necessary for bringing about these valuable artistic works and inventions.[14] In defending this consequentialist understanding, scholars note that the Constitutional basis for intellectual property law in the United States is the *Progress Clause*, which grants Congress the power to promulgate laws "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[15] They then adopt their preferred consequentialist understanding of "progress" — which, among American scholars, most frequently is in the currency of economic efficiency — and conclude that intellectual property law ought only seek to promote it as its aim.[16]

Though consequentialist theories dominate among American intellectual property scholars, note that certain deontic accounts exist as formidable alternatives, explored and embraced by a non-negligible minority. According to such theories, authors and inventors have a right in their artistic works and inventions in virtue of some unique and normatively significant relationship they share with their works, one which the law ought to recognize through exclusive rights. The most common version of such deontic theories is *Lockean* in flavor, maintaining the rights of authors and inventors in their works are grounded in the fact that they have

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[13] *See, e.g.*, William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEG. STUD. 325 (1989).

[14] *Id.*

[15] U.S. CONST. art. I, § 8, cl. 8.

[16] For the argument that this case for a wholly economic understanding of American intellectual property law is unconvincing, see Mala Chatterjee, The Fruits of Authorship: A Theory of Copyright (Aug. 24, 2022) (unpublished dissertation, Columbia Law School).

worked or *labored* to create them[17]; but they are also defended in *Kantian* and *Hegelian* forms (the former grounding IP rights in considerations of authors' and inventors' autonomy,[18] and the latter grounding them in their *personality* or *personhood*[19]).[20]

B. Artistic Works vs. Inventions: What the Law Says (and Doesn't Say)

Nonetheless, while the above theories provide normative foundations for rights in artistic works and inventions, they do not provide a conceptual account of what either of these exactly are. But we have already seen that copyright and patent law have fundamentally different scopes, requirements, and subject matter.[21] Thus, intellectual property law's bifurcation presupposes that artistic works and inventions are importantly different. Scholars emphasize the importance of the division of labor between copyright and patent law, some cautioning against "overlapping" intellectual property protection, or a single work becoming the subject of multiple sorts of intellectual property rights.[22] This division of labor is also doctrinally enforced: for instance, one mechanism whereby copyright law screens out functional elements of candidate subject matter — includ-

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[17] *See, e.g.*, Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533 (1993); Lawrence C. Becker, *Deserving to Own Intellectual Property*, 68 CHI.-KENT L. REV. 609, 610 (1993); David McGowan, *Copyright Non-Consequentialism,* 69 MO. L. REV. 2 (2004); Adam Moore, *A Lockean Theory of Intellectual Property Revisited*, 49 SAN DIEGO L. REV. 1069 (2012); Eric Claeys, *Labor, Exclusion, and Flourishing in Property Law* 95 N.C. L. REV. 413 (2017); Mala Chatterjee, *Lockean Copyright versus Lockean Property*, 12 J. OF LEGAL ANALYSIS 136 (2020); Mala Chatterjee, *Intellectual Property, Independent Creation, and the Lockean Commons*, 12 U.C. IRVINE L. REV. (forthcoming 2022).

[18] *See, e.g.*, ABRAHAM DRASSINOWER, WHAT'S WRONG WITH COPYING? (2015); Shyamkrishna Balganesh, *Privative Copyright*, 73 VAND. L. REV. 1 (2020).

[19] *See, e.g.*, Justin Hughes, *The Philosophy of Intellectual Property,* 77 GEO. L.J. 287 (1988); Christopher S. Yoo, *Rethinking Copyright and Personhood*, 2019 U. ILL. L. REV. 1049 (2019).

[20] I identify these dominant normative frameworks for intellectual property to return to in Part III below, as we will see that the picture of artistic works and inventions this Article defends will yield noteworthy implications for them both.

[21] *See infra* notes 1-8 and accompanying text. *See also, e.g.*, Christopher Buccafusco, *A Theory of Copyright Authorship*, 102 VA. L. REV. 1229, 1239–40 (2016) (describing this distinction); Jeanne C. Fromer, *A Psychology of Intellectual Property,* 104 NW. U.L. REV. 1441, 1446, 1449–50 (2010) (same).

[22] *E.g.*, Viva R. Moffat, *Mutant Copyrights and Backdoor Patents: The Problem of Overlapping Intellectual Property Protection*, 19 BERKELEY TECH. L. J. 1473 (2004) (arguing that the availability of overlapping protection threatens the intellectual property system by undermining the goals of intellectual property law and disrupting the balance struck by Congress in fashioning the copyright and patent systems).

ing elements that are *both* functional and expressive[23] — is the useful articles doctrine, which serves as a funnel for such elements into patent law's domain. The doctrine states that copyright law only protects the pictorial, graphic, or sculptural features of a useful article to the extent that these features "can be identified separately from, and are capable of existing independently of, the *utilitarian* aspects of the article."[24] If an element does not meet this requirement, then it falls outside copyright's domain and into that of patents, where — if it meets those higher bars of utility, novelty, and non-obviousness — it will be eligible for patent protection.[25] The doctrine thus is an important safeguard of intellectual property's treasured separation of powers, preventing the circumvention of copyright's focus on expression and quelling attempts at so-called backdoor patents.[26]

However, though the law tells us that artistic works are copyrightable, and inventions are patentable, it falls short of providing us a complete analysis of these categories, their essential properties, or their most important differences. What we instead receive — from both statutes and case law — is an ever-growing list of purported examples of each. Consider 17 U.S.C. § 101, which defines the subject matter of American copyright law as *original works of authorship* and explicates the category as follows:

> **(a)** Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Works of authorship include the following categories:
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> **(1)** literary works;
> **(2)** musical works, including any accompanying words;
> **(3)** dramatic works, including any accompanying music;
> **(4)** pantomimes and choreographic works;
> **(5)** pictorial, graphic, and sculptural works;
> **(6)** motion pictures and other audiovisual works;
> **(7)** sound recordings; and
> **(8)** and architectural works.
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> **(b)** In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation,

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[23] *Cf.* Morrissey v. Procter & Gamble Co., 379 F.2d 675 (1st Cir. 1967) (holding that copyright does not protect expression when said expression "merges" with the idea, in that the idea can only be expressed in a small number of ways).

[24] 17 U.S.C. § 101.

[25] *See, e.g.,* Moffat, *supra* note 22, at 1500 (noting that the useful articles doctrine is a "channeling doctrine[ ]" that directs functional works to the patent realm in order to "maintain the distinction between the two regimes").

[26] Another phrase for this is "patent smuggling." *See* Gerard Magliocca, *Ornamental Design and Incremental Innovation*, 86 MARQ. L. REV. 845, 855 (2003) (describing patent smuggling as an effort to "dodge the patent process" by receiving a different form of protection).

> concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.[27]

Thus, rather than attempting to analyze "original works of authorship" or their defining properties, this statute offers an illustrative list of examples. Moreover, the case law provides what seems to be an ever-growing elaboration upon this list and what falls within it, affirming the copyrightability of everything from photographs,[28] fictional characters,[29] and advertisements[30] to databases[31], software,[32] and application programming interfaces[33], comparing each sort of work to ones already deemed copyrightable while remarking on the purportedly copyrightable-making-similarities they share. But one would be hard-pressed (and perhaps misguided) in attempting to locate a complete and coherent account of the nature of artistic works, or their most essential properties, somewhere in this entangled common law web.

Similarly, the statutory definition of patentable subject matter in the U.S. provides the following:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.[34]

Again, this does not aim to be an analysis of what constitutes "useful" for the purposes of patent law, although it is to be understood as a category contrasted against the works of authorship protected by copyright, where "utilitarian" intellectual objects explicitly are *not* granted protection.[35] And in the case law, we find another ever-growing list of examples

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[27] 17 U.S.C. § 102.

[28] Berne Convention for the Protection of Literary and Artistic Works art. 2, Sept. 9, 1886, as revised at Brussels on June 26, 1948 (affirming the copyrightability of photographs).

[29] *See, e.g.*, Walt Disney Prods. v. Air Pirates, 581 F.2d 751, 755 (9th Cir. 1978), *cert. denied*, 439 U.S. 1132 (1979) (finding that several Disney comic book characters were protected by copyright).

[30] *See, e.g.*, Bleistein v. Donaldson Lithographing Co., 188 U.S. 239 (1903) (holding that advertisements are protected by copyright law).

[31] Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 357 (1991) (holding that, although facts are not copyrightable *per se*, compilations of data are copyrightable so long as they are "selected, coordinated, or arranged *in such a way that* the resulting work as a whole constitutes an original work of authorship").

[32] Comput. Assocs. Int'l, Inc. vs. Altai, Inc., 982 F.2d 693 (2d Cir. 1992) (affirming the copyrightability of non-literal elements of software and articulating the Abstraction-Filtration-Comparison test).

[33] Oracle Am., Inc. v. Google, Inc., 750 F.3d 1339 (Fed. Cir. 2014) (finding Oracle's API package to be copyrightable).

[34] 35 U.S.C. § 101.

[35] 17 U.S.C. § 102(b).

of processes, machines, manufactures, and compositions of matter that are novel and useful for the purposes of patentability, now including everything from lifesaving pharmaceutical drugs[36] to a method for making crust-less peanut butter sandwiches.[37] The case law also tells us that laws of nature[38], abstract ideas[39], and naturally-occurring phenomena[40] are not eligible for patent protection under American law, despite their obvious utility in some sense of the word. But again, though cases might attempt to give an account of these categories and illuminate examples of them contrasted against patentable subject matter, the task of characterizing the difference between a natural phenomenon (merely identified by a human) and a composition of matter (genuinely invented by a human) is no small feat, particularly in light of the range of intermediate cases (e.g., usefully modified by a human?) between the two.

In sum, though the structure of intellectual property law presupposes an important difference between artistic works and inventions and even attempts to elucidate this difference, the answer provided by the law as it stands is unsatisfying or at least incomplete. But it follows that the principles guiding the development of copyright and patent doctrine might also be incomplete, risking that these ever-expanding lists may stray too far from the very categories these areas of law ultimately should track. In light of this, several scholars have sought to grapple with and vindicate at least aspects of the distinction between copyright and patent law,[41] while others have been made skeptical about whether any such sense can be made of them.[42] But the central question of what differentiates their subject matter — and why it *should* entail fundamentally different legal sys-

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[36] *See* Mark H. Furstenberg, *AZT: The First AIDS Drug; Who Profits? Who Pays?,* WASH. POST, Sept. 15, 1987, at Z12.

[37] Sealed Crustless Sandwich, U.S. Patent No. 6004596A (filed Dec. 8, 1997) (issued Dec. 21, 1999) (expired Feb. 6, 2020).

[38] Mayo Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. 66 (2012) (finding that newly discovered laws of nature — such as a correlation between naturally-produced metabolites and therapeutic efficacy and toxicity are — not patentable).

[39] O'Reilly v. Morse, 56 U.S. 62, 113 (1854) (addressing the patent-eligibility of inventions in the field of software and holding that abstract ideas — apart from their implementation — are not patentable).

[40] Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (2013) (holding that merely isolating genes that are found in nature does not make them patentable).

[41] *See supra* note 9 and accompanying text.

[42] *See, e.g.,* Shyamkrishna Balganesh, *The Immanent Rationality of Copyright Law*, 155 MICHIGAN L. REV. 1047 (2017) (reviewing Abraham Drassinower's WHAT'S WRONG WITH COPYING?) (challenging the idea that there is a deep rationality within copyright law and its structure).

tems — remains at the forefront. As Christopher Buccafusco puts the challenge:

> Copyright law promotes the creation of aesthetic products — those expressing ideas or emotions. Patent law, by contrast, promotes useful products — those functioning to improve some aspect of the quality of life. But even this initial distinction creates problems. If aesthetic works improve the quality of life, why should they not be considered "useful" and thus subject to the requirements of patent law? At some level, all aesthetic products appear to serve some function; they instruct, inspire, or entertain us. Conversely, many inventions contain aesthetic components that produce pleasurable emotions or feelings. What is the difference between a painting that "looks good" and a chair that "feels good"?[43]

Further, there is a conspicuous absence of philosophical literature exploring the nature of intellectual property and the differences between artistic works and inventions. This gap is noteworthy due to the extensive philosophical literature on the nature and foundations of physical property[44], on the one hand, and the nature of abstract objects[45], expression[46], and aesthetics[47] on the other. Indeed, the philosophical literature on intellectual property so far largely focuses on taking the ideas of classic thinkers like Locke[48], Kant[49], Hegel[50], and Bentham[51] on what justifies rights of physical property, then applying them (or arguing against their applica-

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[43] Buccafusco, *supra* note 39 at 511.

[44] For philosophical explorations of the justifications of physical property rights, see, e.g., PLATO, THE REPUBLIC (c. 370 B.C.E); JOHN LOCKE, TWO TREATISES OF CIVIL GOVERNMENT (1988); DAVID HUME, A TREATISE OF HUMAN NATURE (London1739); JEAN J. ROUSSEAU, DISCOURSE ON THE ORIGIN OF INEQUALITY (1755); JEREMY BENTHAM, THEORY OF LEGISLATION (London 1802); JOHN S. MILL, PRINCIPLES OF POLITICAL ECONOMY (1848); KARL MARX, CAPITAL (London 1867); JOHN RAWLS, A THEORY OF JUSTICE (1971); ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA (1974); STEPHEN R. MUNZER, A THEORY OF PROPERTY (1990); JEREMY WALDRON, THE RIGHT TO PRIVATE PROPERTY (1991); GERALD A. COHEN, SELF-OWNERSHIP, FREEDOM, AND EQUALITY (1994).

[45] *See, e.g.,* EDWARD ZALTA, ABSTRACT OBJECTS: AN INTRODUCTION TO AXIOMATIC METAPHYSICS (1983); JOHN BURGESS AND GIDEON ROSEN, A SUBJECT WITH NO OBJECT (1997); AMIE THOMASSON, FICTION AND METAPHYSICS (1999).

[46] *See, e.g.*, Tim Scanlon, *A Theory of Freedom of Expression*, 1 PHIL. & PUB. AFFS. 204 (1972); FREDERICK SCHAUER, FREE SPEECH: A PHILOSOPHICAL ENQUIRY (1982); LARRY ALEXANDER, IS THERE A RIGHT TO FREEDOM OF EXPRESSION? (2005); JEREMY WALDRON, THE HARM IN HATE SPEECH (2012).

[47] *S*ee, e.g., R. G. COLLINGWOOD, THE PRINCIPLES OF ART (1938); ERNEST GOMBRICH, ART AND ILLUSION (1960); NELSON GOODMAN, LANGUAGES OF ART (1968); RICHARD WOLLHEIM, ART AND ITS OBJECTS (1968).

[48] *See supra.*note 17

[49] *See supra* note 18.

[50] *See supra* note 19.

[51] *See supra* note 13.

tion[52]) to the case of rights in intellectual property. But the distinct mysteries arising in intellectual property — in virtue of its distinctly mysterious subject matter — only make the questions surrounding it more numerous and complex. Moreover, the specific challenges of explicating what exactly defines artistic works and inventions themselves, what differentiates particular artistic works and inventions, and what differentiates artistic works and inventions from each other, all seem to be conceptually prior to the question of what (if anything) justifies exclusive rights in either.

This Article thus hopes to make progress in understanding these categories and distinctions, starting with the plausible premise that there is something real and important here that the law is seeking to track.[53] It endeavors to construct a theory of artistic works and inventions — the paradigm subject matter of copyrights and patents — that identifies a defining distinction between them and thereby vindicates intellectual property law's bifurcation. Thus, Part II will take a step back from doctrine in order to independently defend the individuation theses, drawing on philosophical thinking, thought experiments, and existing practices around expression and functionality in so doing. Part III will then use the individuation theses as lenses through which to evaluate intellectual property law, first vindicating the core structures of — and differences between — copyrights and patents, and then identifying some aspects of existing doctrine that perhaps ought to be revisited or revised.

II. ARTISTIC WORKS VS. INVENTIONS: THE INDIVIDUATION THESES

The present Part defends the individuation theses: that artistic works are author-individuated while inventions are structure-individuated, and that this difference might account for or justify our bifurcated system of intellectual property law.

A. Artistic Works and Author-Individuation

1. Artistic Works as Expressive: Authorial Identity and Intent

What are artistic works, broadly construed? We have seen that they might be referred to as works of authorship, which is to say that they are the fruits of authorial activity. We have also seen that the paradigmatic

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[52] *See, e.g.,* Mark A. Lemley, *Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1337 (2015) (criticizing the "jettisoning [of] utilitarianism for talk of morality" and calling it a "retreat from evidence [to] faith-based IP . . . a form of religious belief").

[53] Note that we briefly return to a skeptical challenge to this premise at later points in this Article.

examples of artistic works — as illustrated by the statutory definition of copyrightable subject matter — include novels, paintings, plays, musical pieces, and films.[54] Thus, the starting point of our inquiry is what I take to be an uncontroversial characterization: that artistic works are *expressive,* as is the authorial activity that results in them. In other words, I propose that when an author engages in an act of authorship resulting in an artistic work, she has *made* something but has also *said* something; and that which has been said importantly is *part* of the artistic work itself.

Note that, in calling this basic conception of artistic works uncontroversial, I do not mean that it uncomplicatedly lays bare what all *counts* as one or is principally expressive in nature. To the contrary, I want to flag here that this line-drawing question is made particularly difficult by the intellectual artifacts both expressive and functional in nature, or which simultaneously constitute artistic works and inventions.[55] A related challenge worth flagging concerns the question of what makes an artistic work the expression of *one* author rather than another — or, how we ought to distinguish acts of authorship from acts of infringement — given that most authorial acts ultimately combine elements from prior works (or culture broadly) and transform them into something new. Though we will return to these questions later in this Article, it is worth also noting their structural similarity to the likely more familiar theoretical debates on what ought to count as protected expression, or what it takes for something to be art; both of which have only been complicated by our ever-evolving contemporary expressive and artistic practices. In any case, I can set aside these line-drawing questions for now and return to them later, as all that we must take on board at this point is that there *is* a distinction to be made: or, that there is *some* real category of expressive intellectual artifacts, and that this expressiveness thus distinguishes them from artifacts of other sorts.

Thus, we can begin with the premise that artistic works not only *are* expressive but importantly are defined by being so; it is what makes what they are. Moreover, few will reject that expression *itself* is something with special normative status. Indeed, it is an almost universally held view that liberty of expression — understood as a noun, or the activity that (at least sometimes) results in artistic works — itself is a fundamental right.[56] The fact that artistic works are distinguished by their expressiveness thereby has *prima facie* normative significance. And this characterization of artis-

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[54] *Infra* Part I.

[55] Note that this distinction raises the question of what we should say about objects that seemingly have both expressive and non-expressive aspects, such as what copyright law calls "Useful Articles". I return to this question in Part III.d.

[56] U.S. CONST. amend. I.; *see, e.g.*, JOHN RAWLS, A THEORY OF JUSTICE (1971) (identifying freedom of speech as an equal basic liberty).

tic works as expressive is itself the foundation for the author-individuation thesis, for the reason that expression is the kind of thing for which *who it comes from* in part determines *what it is*. In other words, the argument goes, because i) that which is expressed by an artistic work is particular to or individuated by its expressor, ii) artistic works are themselves author-individuated. Put differently, there is an important sense in which an author's expression — and, resultantly, her artistic work — *uniquely* is hers, even if others might have produced something that looks just like it themselves, simply in virtue of the fact that it came from her.

To better illustrate the content of this thesis, consider loose analogies to speech acts[57] or "indexed" propositions. While two distinct speakers might say the same string of words, the acts that they have engaged in by speaking obviously are distinct; and although two individuals might say the sentence "I am happy," the propositional content of their utterances nonetheless will differ, in virtue of the indexical term "I" referring to the speaker who uttered it (along with being indexed to the time and context of utterance, e.g., "I am happy" means I am happy *now*, not a century from now). Drawing on these analogies, a way of putting the author-individuation thesis is that artistic works — in virtue of being created by specific authorial acts and containing their specific authors' expression — always are indexed to their actual author. Importantly, it follows from the author-individuation thesis that artistic works made by distinct authors — composed of their own author's expression — themselves always are distinct. This is not to say that two authors might not produce artistic works which are otherwise identical — works that we refer to as *structurally* identical — just as two speakers easily can utter the very same string of words. Rather, the claim is that the very fact that distinct expressors produced the expression of such structurally identical works itself importantly distinguishes them, such that the fruits of two authors' authorial activity can never themselves be the very same.

The proposed conception of authorial activity might also be elucidated by the following metaphysical picture. If we understand an author's expression as part of the *ingredients* that the artistic work is composed from, then an artistic work could only have been made by its actual author, as that author's expression could only have come from herself. The work of another author would contain *that* author's expression and would thus necessarily be distinct (irrespective of structural similarities). The contrast implied here between artistic works and non-expressive artifacts

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[57] Note that Abraham Drassinower has a related Kantian view of copyright according to which artistic works *just are* acts of speech. Drassinower, *supra* note 18. Though his view and mine have many important similarities, I discuss and argue against his view elsewhere. Mala Chatterjee, *The Fruits of Authorship: A Theory of Copyright*.

— e.g., a non-expressive pile of apples gathered for consumption — is that, in the latter case, all of the raw materials *could have* been used by someone other than the artifact's actual maker. Someone other than the pile's gatherer could have gathered up all the very same apples.

Although metaphysicians have not tackled the precise question of how to individuate expressive works generally, note that the author-individuation thesis is implied by some existing philosophical work on related questions of the ontology of fiction and art. First, a number of metaphysicians and philosophers of language contemplating the nature of *fictional entities* — things like fictional characters or fictional places, and which are, of course, contained in artistic works — have defended the view that such entities are only created by particular acts of authorship and are, as a result, necessarily author-individuated.[58] Such theorists call themselves *artifactualists* or *creationists,* since they embrace the very intuitive view that fictional entities are abstract objects with a time of origination, and that they only could have come into being once conceived by their actual authors. These theorists thus maintain that fictional entities are "historically rigidly dependent" on their authors for existence: or, that but for the existence of their actual authors, the entities themselves could not have come into being. But again, given that fictional entities are exclusively contained in artistic works — and that both fictional entities and artistic works are the fruits of authorial creation — the claim that the former are author-individuated implies that the latter are as well.

As another example, a relevantly similar thesis is put forth by philosopher Jerrold Levinson, who defends an ontology of musical works according to which they are individuated by composers. Levinson presupposes a general metaphysical picture according to which all possible sounds, patterns, and sequences thereof exist prior to anyone's compositional activity, but he thinks that musical works are only brought into existence upon a composer's compositional activity. The distinction here is that, although musical structures cannot be created by composers, composers can choose or indicate certain structural types and performance means. Levinson thus argues that the right way of understanding musical works is as a relational entity of the sort "sound structure and performance means as indicated by

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[58] John R. Searle, *The Logical Status of Fictional Discourse, in* Contemporary Perspectives in the Philosophy of Language 233-243 (1979); Nathan Salmon, *Nonexistence*, 32 Noûs 277 (1998); Amie L. Thomasson, Fiction and Metaphysics (1991); Alberto Voltolini, How Ficta Follow Fiction: A Syncretistic Account of Fictional Entities (2006); Saul A. Kripke, Reference and Existence (2013).

artist X at time t".[59] A musical work thus is something created by a composer's act of composing, and such that distinct compositional acts of different composers will always result in distinct musical works as well, regardless of any structural similarities with other works. Further, although Levinson limits his discussion to musical works specifically, there is no clear reason to think that we should not understand the entire category of artistic works in the same way: namely, as created by particular acts of authorship, and thus distinct from the fruits of any other authorial acts.

Now, this substantive metaphysical picture — in part offered to just shed light on the author-individuation thesis — might ultimately be unpalatable to certain ontological tastes. But setting aside the metaphysics entirely, the far more important — and independent — illustrations of the author-individuation thesis are the ways in which an artistic work's authorial identity can have *normative* and *aesthetic* implications for it. In other words, when it comes to understanding and evaluating artistic works, it *matters* to us *who* is actually doing the expressing. Returning to the simple speech analogy to illuminate the idea: we can imagine scenarios in which the same string of words uttered by two very different individuals might cause wholly different responses and reactions in the listener; and this is not because the speakers' *intentions* necessarily constrain the meaning of their utterances,[60] but rather because *who they are* can bear — justifiably — on what the listener takes away.

Before turning toward some examples and practices that illustrate this idea, it is worth noting that some philosophers have explicitly considered the question of whether two distinct authors' works — even structurally identical works — will nonetheless have different aesthetic properties, as this precise scenario was raised by Argentine writer Jorge Luis Borges' famous story "Pierre Menard, Author of the *Quixote*".[61] Therein, the protagonist Menard sets out to immerse himself in Miguel de Cervantes' work *Don Quixote,* in order to be able to re-create the work himself, word-for-word, rather than merely by copying or translating it.[62] The narrator of the short story reflects upon this and observes that, even if Menard did succeed in producing a work "verbally" (in our terms, structurally) identical to Cervantes', the two works nonetheless would be im-

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[59] Jerrold Levinson, *What a Musical Work Is*, 70 J. OF PHIL. 5-28 (1980); Jerrold Levinson, *Autographic and Allographic Art Revisited*, 38 PHIL. STUD. 367-383 (1980).

[60] To be clear, the author-individuation thesis is *not* the claim that authorial identity matters because the author's intentions ought to control or constrain the meaning of her work; rather, it is the claim that authorial identity matters because it can and often does bear on how *we* might interpret or evaluate it. I return to this important clarification in my discussion of the *Death of the Author* below.

[61] Jorge Luis Borges, *Pierre Menard, Author of the* Quixote, 1939 SUR 89.

[62] *Id.*

portantly different in many ways, due to the differences between Cervantes and Menard.[63] The narrator thus seems to endorse something like the author-individuation thesis.

Likely the first philosophical discussion of Borges' story appears in Anthony Savile's review of Nelson Goodman's seminal work on the ontology of art, *Languages of Art.* Savile uses this tale as an example to argue, contrary to Goodman, that the identity conditions of "allographic" works — or, artistic works encoded using a notational scheme and therefore not subject to forgery, such as novels and pieces of music (in contrast to "autographic" works like paintings and sculptures) — nonetheless are also not entirely determined by their notational scheme (such as the words used to notate a novel).[64] Like the story's narrator, Savile argues that Cervantes' *Don Quixote* and Menard's *Don Quixote* would — despite verbal identity — have distinct aesthetic properties, in virtue of the differences between their authors, intentions, and contexts.[65] Offering another example, Savile asks us to imagine that the German composer Karlheinz Stockhausen independently composed "an ode notationally and semantically identical" with a composition by a different German composer Johann Stamitz, concluding that "we should certainly not say that they had composed the same work, for the way in which it would be appropriate to hear them would be quite different."[66] By way of these examples, then, Savile shows that such structurally identical works produced by distinct authors would be, not only metaphysically distinct, but *aesthetically* distinct as well, and such that we would and should understand, evaluate, and even experience them differently.

In another seminal discussion touching on the normative and aesthetic significance of authorial source. R.G. Collingwood's landmark *Principles of Art* — a treatise on aesthetics that explores the nature of expression — explains:

> "Expression. . .individualizes. The anger which I feel here and now, with a certain person, for a certain cause, is no doubt an instance of anger, and in describing it as anger one is telling truth about it; but it is much more than mere anger; it is a peculiar anger, not quite like any anger that I ever felt before, and probably not quite like any anger I shall ever feel again. . .the poet, therefore, in proportion as he understands his business, gets as far away as possible from merely labeling his emotions as instances of this or that general kind, and takes enormous pains to individu-

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63 *Id.*

64 Anthony Savile, *Nelson Goodman's 'Languages of Art': A Study*, 11 BRITISH J. AESTHETICS 3 (1971).

65 *Id.* For a discussion contrasting Menard's *Quixote* against Richard Prince's purported *Catcher in the Rye* appropriation art, see *supra* note 86 and accompanying text.

66 *Id.* at 23.

> alize them by expressing them in terms which reveal their difference from any other emotion of the same sort. . .[the artist] does not want a thing of a certain kind, he wants a certain thing."[67]

Indeed, Collingwood advances a picture of expression according to which it is individuated, not merely by author, but by the particular instances of mental content that the author is experiencing and seeking to express.[68] Put differently, for Collingwood, it is simply not possible for two authors' expression to be precisely the same, a fact which bears normatively on our engagement with and understanding of authorial works. Collingwood does not mean to suggest that an author's expression need be unique in any other sense — as in, beyond the sense of being linked to the instance of authorship — for he grants that distinct mental content, experienced and expressed by distinct individuals, might otherwise look entirely (structurally) alike. He later explains:

> "Every genuine expression must be an original one. However much it resembles others, this resemblance is due not to the fact that the others exist, but to the fact that the emotion now being expressed resembles emotions that have been expressed before . . . Once we have got rid of a false conception of 'originality', no objection to this statement arises from the fact that one linguistic expression is often very like another. There is nothing in creation which favors dissimilarity between creatures as against similarity."[69]

In other words, then, Collingwood's claim is not that an author's original expression cannot *look* like the expression of others, or that it would be bad if it so resembled. But a "genuine expression" under his picture — as opposed to, say, a *merely* copied one — is one that *originates* in the author herself; and it will thereby also be distinct from any expression that originates in another.

Turning now to our own intuitions and practices to see what they illuminate about authorial identity and expression, consider the current debate on whether art can be wholly separated from artist, such as in the case of artists with morally objectionable character traits or past actions. Particularly in light of changing norms, some argue that the art created by morally objectionable artists cannot be experienced or appreciated wholly independently from the artists' character or conduct, such that engaging with their work is to be condemned. For example, a proponent of this view might argue that Woody Allen's *Manhattan* cannot be admired independently of his alleged morally objectionable behavior towards young women. Moreover, while this basic idea sometimes takes the form of traditional boycott arguments — e.g., we should reject the art of such art-

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[67] Robin G. Collingwood, The Principles of Art 113 (1938).
[68] *Id.*
[69] *Id.* at 276.

ists so that they do not enjoy financial rewards, instead directing them towards artists without similar moral failings — some specifically argue that the *expression of the artwork* is tied to the originating artist in a way that imbues it with his moral properties. Now, I emphasize that the author-individuation thesis does not *entail* this "moral imbuement" thesis. In other words, one can embrace that expression is tied to its author without thinking that the expression must always be imbued with the author's moral properties specifically, as this latter thesis requires further argument on the part of its proponent.[70] Still, though, those who *do* embrace the moral imbuement thesis have tacitly presupposed author-individuation, and I think they are not confused in so presupposing. Further, the comparative absence of the same view about morally objectionable inventors and their inventions — as exemplified, for instance, by society's collective indifference for nearly a century to the fact that the Volkswagen Beetle vehicle was originally conceptualized as a "people's car" by leader of Nazi Germany Adolf Hitler — at least suggests a presupposed rejection of the inventor-individuation thesis.[71] And I will argue below that, in virtue of the very different nature of inventions, this also is not mistaken.

Consider another practice that suggests the role of authorial origin — and not just structure — in defining artistic works: that, almost universally, we refer to artistic works with *names*. Indeed, we specifically refer to them by the name given by their originating authors. This observation might seem theoretically insignificant at first blush: for how else would we refer to such works, one might ask, aside from by their names? But I draw attention to it because of what it indicates about the nature of artistic works, for — as philosophers of language have long observed — names pick out objects of reference in a very different way from, say, descriptions of structural properties.[72] To see this, imagine that two authors have independently created structurally identical works of visual art, both constituted by an orange background with a pink orb at the very center. Further imagine that the first author names her work *A Gloomy Sunset* while the

[70] Indeed, many do reject the moral imbuement thesis, for example those who say that the excellence of Michael Jackson's music is still worthy of admiration and enjoyment even if the child assault allegations against him are true. One might also embrace a middle ground view (e.g., that *Manhattan* is imbued with Woody Allen's moral properties due to the relationship between the content of the work and his alleged conduct, but Michael Jackson's music is not, in virtue of its content and his alleged conduct not relating to each other). But one need not assume author-individuation is *false* in order to embrace either of these positions, and rather simply that the author's moral traits do not all always automatically imbue her artistic work itself.

[71] I elaborate on this argument while discussing inventions in Part I.B.i.

[72] *See, e.g.*, Saul A. Kripke, Naming and Necessity (1980); John Hawthorne & David Manley, The Reference Book (2012).

second names his *Impression of a Kickball*. Finally, imagine that each author subsequently produces prints, shirts, and handbags embodying the work of visual art that they had made. I submit that, if we were to describe the situation only as both authors making prints, shirts, and handbags of an orange background with a pink orb at the very center, we would leave out important information about what exactly has occurred. We might instead say that the first author here is making prints, shirts, and handbags of *A Gloomy Sunset* while the second is doing so of *Impression of a Kickball*, albeit while noting that these two works of art also happen to look exactly the same.

The takeaway from this reflection is that, in defining and distinguishing these artistic works, it *matters* that they resulted from distinct authorial acts and have distinct names from their respective authors, notwithstanding their identical structural properties. Now, the skeptical reader might push back on the force of this inference, perhaps by arguing that names are simply the easiest and most efficient way of referring. After all, an exhaustive list of structural descriptions might often be laughably unwieldy, especially since most artistic works (unlike the simple ones we just considered) have far more complex structural properties than our toy examples. Still, though, it does not seem to me that the mere convenience of names can wholly explain this choice of practice: for as we will see in the following Part's discussion of patent law, inventions *are* identified and referred to in precisely the opposite way: an (often unwieldy) list of structural descriptions.[73] Instead, I suspect that the central reason we would not want to refer to both *A Gloomy Sunset* and *Impression of a Kickball* as "an image with an orange background with a pink orb at the very center" is because the two *simply are* distinct works of art, ones that also bear distinct names: A Gloomy Sunset on the one hand, and Impression of a Kickball on the other.

Next, perhaps the best and most vivid illustration of the author-individuation thesis in our existing practices of understanding and valuing artistic works comes from the world of contemporary art. This is due to a creative practice that has become paradigmatic of modern conceptual artists: namely, the creation of artwork that is *by design* structurally identical to either a) non-art objects or b) artwork of others, and which is nonetheless importantly distinguished by being its *own* artist's expression. Consider, for instance, the indistinguishable yet aesthetically distinct artifacts discussed in Arthur Danto's landmark paper *The Artworld:* brillo boxes, Andy Warhol's brillo boxes, and Richard Pettibone's brillo boxes.[74] First, although Warhol's brillo boxes are perceptually (and perhaps even struc-

[73] *Infra* Part III.C.i.

[74] Arthur Danto, *The Artworld,* 61 J.PHIL. 571 (1964).

turally) indistinguishable from non-art brillo boxes, we — and the art world — regard them as distinct works of authorship, for the reason that they embody Warhol's artistic work. Similarly, while Richard Pettibone's subsequent brillo boxes are intentionally indistinguishable from Warhol's, they too encode an artistic work that is Pettibone's, with his expression rather than Warhol's and resultantly with distinct aesthetic properties (for instance, in virtue of intentionally appropriating from and reflecting on Warhol). The best way to describe these three classes of structurally identical objects, then, are as a) non-expressive objects, b) objects embodying Warhol's artistic work, and c) objects embodying Pettibone's artistic work; and these differences in authorship (or non-authorship) have aesthetic significance.

Similarly, consider Richard Prince's infamous *New Portraits* series, which is constituted by selections and printings of certain public Instagram posts of others. Upon finding and selecting such a photo that struck his fancy, Prince added his own (small and often nonsensical) comment to the user's post, then screenshotting the page and emailing it to an assistant who would have it printed onto a canvas.[75] Moreover, this was neither a new nor fringe "technique" on Prince's part but rather a continuation of his longstanding practice of appropriating and re-photographing images, one that drew on twentieth-century artists like Warhol and Rauschenberg, and which has influenced numerous contemporary artists engaging in similar practices.[76] As Amy Adler explains:

> We used to think of an artist as someone who sat outside in nature or in his garret, working alone to create something new from whole cloth. But now that we are bombarded by images, the most important artist may be the one who can sift through other people's art, the one who functions like a curator, an editor, or even a thief. In a world with a surfeit of images, perhaps the greatest artist is not the one who makes an image but the one who knows which image to take: the artist who knows how to sort through the sea of images in which we are now drowning and choose the one that will float. Warhol as usual was among those who saw this first. As a critic explained, Warhol realized that the most crucial piece of making art had become "choosing the right source image." Copying is now so ubiquitous in art that some have complained it has become "hegemonic." It is both the subject of contemporary art and its technique.[77]

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[75] Jerry Saltz, *Richard Prince's Instagram Paintings Are Genius Trolling,* VULTURE (Sept. 23, 2014, 2:15 PM), http://www.vulture.com/2014/09/richard-prince-instagram-pervert-trollgenius.html.

[76] *See* Nancy Spector, *Nowhere Man*, *in* RICHARD PRINCE 20, 24 (David Grosz et al. eds., 2007) (describing Prince's influence on the generation of artists who "promoted a radical interrogation into the very nature of representation").

[77] Amy Adler, *Why Art Does Not Need Copyright*, 86 GEO.WASH. L. REV. 313 (2018) (arguing that copyright is superfluous and counterproductive in the domain of visual art due to the art market's value of the norm of authenticity).

Prince's pieces in this series ultimately sold for $90,000-$100,000, notwithstanding the fact that anyone — including said pieces' very buyers — could have screenshotted the same public Instagram posts, comments and all, in order to make prints themselves. But these buyers did not go down the self-printing route, and I submit that this is because the fruits of their own screenshotting simply would not have been the same thing as the prints "authored" by Prince himself. The fact that Prince was the one to select and produce (or at least direct the production of) the prints matters to what these works actually are and their aesthetic properties; and this makes sense of the fact that, if I were to select and print an Instagram post, it would be far less desirable to potential buyers than if the very same post was selected and printed by Prince.[78] Whatever one thinks of the artistic merits of either, the former would be my expression while the latter would be Prince's; and ultimately, at least for now, art buyers are only interested in the latter:

> Once we realize that the value of Prince's work resides more in the fact that he chose the image rather than the visual appearance of the image, we see that the popular conception that Prince stole something of economic value from [those whose images he printed] is mistaken. He stole visual content, but it was only through his act of stealing — by slapping the authentic Richard Prince brand on it — that he created $90,000 of value. Prince functions like King Midas; it is his touch (or his assistant's) that turns previously worthless material into art.[79]

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[78] Relevantly, the individuals whose Instagram posts Prince appropriated for his *New Portraits* series included an alternative porn pin-up collective known as the "Suicide Girls," who responded by turning the tables on Prince by *re-appropriating* his appropriation of their images and then selling the reappropriation online for far less than the price of Prince's own appropriation art, with only the addition of an Instagram comment saying "true art" in order to shame Prince. *Id.* at 318-24; Jeanne Fromer & Amy Adler, *Taking Intellectual Property into Their Own Hands*, 107 CAL. L. REV. 1455, 1466 (2019). Though the resulting artworks did not have as much market value as Prince's own, the reappropriation of Prince's expression then imbued with that of the Suicide Girls did ultimately have more market value — retailing for $90 each — than if the Suicide Girls had tried to directly sell their own Instagram posts without any of Prince's expression having been imbued. All profits from their sales went to the Electronic Frontier Foundation, a nonprofit organization defending digital privacy, free speech, and innovation.

[79] *Id.* Note that, in the case of *visual* art in particular, the author-individuation thesis actually goes a step even further. In this domain, authorial source of the artistic work matters not only at the level of abstract objects — and such that a poster of Warhol's brillo boxes versus a poster of Pettibone's embody distinct works of art — but also at the level of the particular physical object in which the work has been embodied, as exemplified by the value of *authenticity*. In other words, in visual art, it not only matters who created the abstracta but even who created the particular physical piece. As Adler explains:

> Authenticity is the bedrock of the art market. There are two overlapping dimensions of the concept of authenticity. . . First, authenticity signals

2. Author-Individuation and Transformability

In the above examples, we saw two distinct types of artistic works (and authorial acts) that motivate the author-individuation thesis and illustrate that structural properties do not wholly define them. The first were works resulting from *independent authorship*, whereby two independently acting authors happen to create works that are structurally identical (e.g., the case of *A Gloomy Sunset* and *Impression of a Kickball*).[80] But the second were works resulting from *transformative authorship*,[81] whereby a subsequent, non-independent author uses the work of an earlier one as a raw material for creating her own work, imbuing it with her expression, and thereby transforming it into something distinct (e.g., the works of Pettibone and Prince).[82] Often, in such cases, the authorial act occurs precisely *because* the subsequent author was influenced by — and is consciously responding to — the earlier author's work. Indeed, with respect Pettibone's and Prince's examples, the very point of these works is to replicate the structural properties of the earlier works, and to thereby react or respond to the earlier author's expression with their own (Warhol in the case of Pettibone, and the Instagram posters in the case of Prince).[83]

Taking a moment to reflect on this latter class of artistic works, it is noteworthy that — by their very nature — artistic works are even *amenable* to such transformation: in other words, that it is possible for a subsequent author to use another's work as a raw material in their own, imbuing it with their own expression and thereby creating something new. And I

> originality, usually but not exclusively in the sense of uniqueness — an authentic work is not a copy. Second, authenticity signals authorship—an authentic work is "by" an artist and can be attributed to him.

It is a separate and interesting question *why,* in the domain of visual art, we not only care about (and distinguish works on the basis of) who created the abstracta but also who created the physical object that the abstracta has been embodied within, and such that author-individuation thesis is taken to a further level. I set aside this question for now, since ultimately the focus of the present Article is on abstract intellectual objects specifically. For now, suffice it to say that a theorist who *accepts* Nelson Goodman's distinction between autographic and allographic works at the level of physical objects nonetheless can also accept the normative author-individuation thesis at the level of *all* abstract artistic works, which (we saw above) Anthony Savile compellingly defended (and notwithstanding the fact that he, in my view mistakenly, took himself to be disagreeing with Goodman).

80 *See* Part I.A.i. *supra*

81 In existing U.S. copyright law, note that the word "transformative" has a particular legal understanding in the context of the fair use doctrine. I will argue in Part III that this existing doctrinal understanding falls short of capturing the actual full range of actual transformative authorship, such that — according to the defended account — this aspect of fair use law needs to be revised.

82 *Id.*

83 *Id.*

submit that the most natural story to tell about this transformable nature of expression is the author-individuation thesis itself: in other words, author-individuation and transformability are two sides of the same coin. Completing the picture, then, what distinguishes a transformative author from a mere copier is that she is using another's work while engaging in her *own* act of authorship — rather than mere copying — and thus also making a distinct, author-individuated work; and it is only *because* each authors' expression is so uniquely tied to them that they can even transform — and by transformed by — the expression of others in this way. Returning to our examples, we can see that the author-individuated nature of expression explains how Pettibone can imbue Warhol's with his own and transform it into something new, or how Richard Prince's authorial act of selecting and printing my Instagram post could proliferate something that is ultimately his expression rather than mine.[84] At the most general level, then, author-individuation and transformability are what enables authors to make expressive uses of others' expression at all, not just in the context of appropriation art but also for criticism, parody, tribute, and more; and thus, these two sides of the same coin are also — perhaps equivalently — the most striking aspect of expression itself.

Though I have put forth a basic picture of authorial transformation — wherein one utilizes the work of another as a raw material in her act of authorship, and thereby creates her own author-individuated work — an important part of this picture remains a black box: namely, what does it *take* for something to be an act of authorship rather than mere copying? The easiest cases of expression transformation might be criticisms and par-

[84] Note that there actually are two forms that of authorship that one might be tempted to call transformative, and which are important to distinguish for our purposes. The first is what we might call *idea-transforming authorship,* which involves taking a high-level idea captured in or evoked by another's artistic work and re-expressing it in one's own way. Examples of this include the many post-1968 science fiction films that were influenced by and used ideas from *2001: A Space Odyssey* without actually copying any of its concrete structural elements. But the second and (for our purposes) more interesting type is *expression-transforming authorship,* which involves copying the literal expression of another's artistic work — indeed, the precise subject matter of copyright protection — and using it in a way that is itself expressive. Again, examples of this include the Pettibone and Prince cases, along with works from music sampling artists like DJ Shadow and collage artists like Jeff Koons. I distinguish them now to clarify that it is specifically expression-transforming authorship which, I claim, is made sense of by the author-individuation thesis; for it results from the fact that one author's expression can itself by imbued with (and transformed by) that of another. I also note this distinction so the reader will keep it in mind as we turn to inventions and the contrasting structure-individuation thesis, as I will argue there that inventions are not transformable in this same way, and that structure-individuation and this non-transformability are also two sides of the same coin.

odies, whereas Richard Prince's infamous *New Portraits* series is certainly a harder (and more controversial) one. Many other puzzling examples lie along the authorial spectrum. But the implication of the author-individuation thesis is that acts of authorship — and the artistic works they result in — are not wholly distinguished by the work's structural properties but instead by *whose expression* they constitute. Thus, we are left with the question of what makes something the expression of one author rather than another, or how to distinguish the transformative author from the simple pirate making unexpressive copies. Put differently, it calls for a theory of authorship itself.

Of course, the task of providing this theory is a project in its own right, and one I intend to pursue develop in future work; but perhaps it is still worth briefly sketching a tentative framework of such a theory here. We have seen the author-individuation thesis illuminate that whether two artistic works are distinct authors' expression *does* turn on something about the purportedly transformative author. Specifically, it turns in part on whether she has expressive or *authorial intent,* as the presence of such intent is part of what distinguishes genuinely authorial acts — which result in genuine expression, *saying* something beyond what has already been said — from non-authorial acts of copying. This distinguishes the appropriation artist from the mere pirate, for example, as the former acts with the authorial intent to imbue the resulting work with her expression. But still, although the presence of authorial intent is *necessary* for creating a transformative work, I want to emphasize that this *does* not entail leaving it wholly up to the author whether she *has* that requisite intent or not, nor is it sufficient for the artistic work successfully *manifesting* that intent in her work. This is all to say, then, that authorial intent is still just one piece of this picture of authorship. Artistic works are expressive and communicative and the processes by which we communicate are themselves complex functions, not merely of the expresser's intent but also the context and conventions of expression that surround us. Thus, I propose that works of genuine authorship must not only be made with authorial intent, but must also *manifest* that intent in virtue of those surrounding *context and conventions* — e.g., the norms of the practice or form in which the author operates, the other works made by the author, or the other relevant

works of others[85] — such that the work can result in a *communicative effect.*[86]

Beyond elaborating upon the distinction between the transformative author and the mere pirate, this picture of authorship captures several important features of artistic works worth underscoring. First, it captures why — due to these ever-changing contexts and conventions surrounding our modes of expression — the *category* artistic works and what all it includes is also ever-changing. For example, perhaps the use of expressive copying might not have been a common or recognized expressive practice in visual art at an earlier point in art history, but this does not undermine the fact that it has now become a central way of producing distinct and genuine expression in the world of contemporary visual art.

Second, this picture of authorship can reflect the fact that not all instances of purported appropriation art or transformative expression are necessarily equal, even if they *do* involve genuine authorial intent. Instead, it might be that one is a credible and felicitous manifestation of this authorial intent in virtue of the surrounding context and conventions — the nature of what has been appropriated, the norms of expression in the works' media, or the cultural and artistic context in which it is made — while the other is not. As an example, we might distinguish the works of Richard Prince's *New Portrait* series — again, made in a cultural context where expressive copying is embraced as a legitimate way of producing new expression in the world of visual art — from his *Catcher in the Rye* piece, which involved him printing and selling books identical in all ways to the *Catcher in the Rye* novel, but with the name "J.D. Salinger" replaced by "Richard Prince" on the cover, along with a note added to the copyright page disclaiming: "This is an artwork by Richard Prince. Any similarity to a book is coincidental and not intended by the artist." Considering these examples, one might make the colorable argument that the *New Portraits*

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[85] This idea is closely connected to the popular view put forth by Arthur Danto with respect to the question of what counts as art, according to which it turns on conventions rather than particular formal properties. *See generally* ARTHUR DANTO, THE TRANSFIGURATION OF THE COMMON PLACE (1981); Arthur Danto, *The Artworld,* 61 J. PHIL. 571 (1964) (defending a conventional approach to art, wherein a work of art is something which (i) has content or meaning and (ii) embodies that meaning in some appropriate manner).

[86] The defended theory shares important similarities with Chris Buccafusco's theory of authorship, according to which authorship involves the intentional creation of mental effects in an audience. Buccafusco, *supra* note 2. My ideas might be regarded as an elaboration upon Buccafusco's theory, adding that the artistic work need not be structurally different from the work of authors in order to be genuinely distinct, so long as 1) the author has authorial intent and 2) the intent is credibly and felicitously manifested in the work itself in virtue of the work's surrounding context and conventions, such that 3) it *can* produce a communicative effect. I intend to expand on and defend this theory in a future project.

series credibly manifests authorial intent, given the norms of contemporary visual art and the expressive significance of Prince's selections plucked from a nearly infinite abyss of images; however, the norms of literary art are — at least for now — substantially different, and minimally require at least some engagement with the work's semantic content in order to expressively transform it (to say nothing of the possible relevance of the fact that the *Catcher in the Rye* is itself a work of immense significance, rather than a curated selection from an infinite online abyss).[87]

Finally, though this picture of authorship embraces author-individuation and the necessity of authorial intent in the act of creating distinct works of authorship, it does *not* entail that authorial intent wholly constrains the *meaning* of a work or how it might or ought to be interpreted. This is an important clarification in light of the influence of anti-Romantic conceptions of authorship in the spirit of New Criticism[88] and following French literary theorist Rolande Barthes' *The Death of the Author,* according to which artistic works "leave" the author and have a life wholly of their own.[89] To clarify, then, while this Article does straightforwardly reject — and hopes to have persuaded the reader against — ideas of twentieth-century American literary theory according to which authorial identity (or even historical context and conventions) ought not make *any* difference to our understanding or evaluation of a work at all, the author-individuation thesis still does *not* entail that the author's *intended* content or meaning itself controls or determines what the work says or how it is to be understood.[90]

Though I intend to develop this theory of authorship more extensively in future work, we will return to these issues — and what they mean for the law's conceptions of authorship and infringement — in Part III's

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87 Similarly, we might also distinguish Prince's *Catcher in the Rye* from Menard's *Don Quixote* on this basis. Unlike Prince, who (I presume) merely had the text of the *Catcher in the Rye* re-printed and enveloped in jackets bearing his name (jackets which themselves plausibly are credible instances of appropriative visual art), Borges' Menard consciously sat down to immerse himself in the world of *Don Quixote* in order to generate the right kind of mental content that resulted in the *semantic* activity of writing a verbally identical work by his hand, such that the aesthetic properties of the resulting work meaningfully differ from those of Cervantes'.

88 *See, e.g.*, Garrick Davis, Praising it New: The Best of the New Criticism (2008).

89 Rolande Barthes, *The Death of the Author,* 5+6 Aspen: Mag. Box (Richard Howard, trans., 1967), http://www.ubu.com/aspen/aspen5and6/index.html. In contrast, *see* Michel Foucault, *What Is an Author?* in The Foucault Reader 101 (Paul Rabinow ed., 1984) (1969) (arguing that our culture invariably relies on the concept of the author to control a work's meaning).

90 I elaborate further on the relationship between author-individuation and authorial romanticism in Part III.A.ii below.

discussion of how the individuation theses either vindicate or yield implications for refining doctrine. But for our present purposes, the important takeaway is that the nature of an artistic work is a matter of *more* than simply its structural properties. And with that in mind, we can now turn to the contrasting case of inventions, seeing — more swiftly, due to the negative thesis — that they *really are* reducible to their structures.

B. Inventions and Structure-Individuation

1. Inventions as Tools: Structure and Function

I argued in the prior Section that artistic works are differentiated from other intellectual objects in virtue of being expressive.[91] In contrast, as our starting point for exploring the nature of inventions, I propose that inventions are best understood as *tools.* In more words, inventions are only *instrumentally* valuable for some *specified end*, the functions they are designed to perform. Consider Collingwood's helpful words on this relevantly analogous distinction between art and craft:

> "Is a poem means to the production of a certain state of mind in an audience? Suppose a poet had read his verses to an audience, hoping that they would produce a certain result; and suppose the result were different; would that in itself prove the poem a bad one? It is a difficult question; some would say yes, others no. But if poetry were obviously a *craft*, the answer would be a prompt and unhesitating yes."[92]

Though Collingwood's intended use of the terms art and craft are not identical to the abstract categories we are exploring, we can still substitute "poetry" with "artistic work" and "craft" with "invention" and glean a fundamental difference between the two kinds of intellectual objects. Specifically, if some artistic work does not produce the authors' precisely intended effects in those who consume it — instead producing an effect that the author had not aimed for — we would not regard the work as defective for this reason. Indeed, we might even regard the multidimensional nature of such a work — that it is not merely a means to some single, specific end in all those who consume it — to be a virtue. However, an invention that does not perform its intended function would be, undoubtedly, thereby defective; and this is because inventions *just are* what they do and how they do it. Considering the contrast against artistic works: a painting that fails to produce the authors' intended function of "producing a sense of melancholy" does not thereby fail to be a painting, but a computer which fails to perform its inventors intended function of "performing computations" does thereby fail to be a computer. It follows that an in-

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[91] *See* Part I.A.i *supra.*

[92] COLLINGWOOD, *supra* note 67, at 21.

vention, if it were not able to achieve the end it is designed to achieve, would fail to be what it is meant to be.

This conception of inventions is the starting point for the structure-individuation thesis. For although we saw above that authorial identity can make a difference to the nature and aesthetic properties of an artistic work, this was due to the expressive nature of artistic works themselves, combined with the fact that expression is a kind of thing for which where it comes from can make a difference to what it is. In contrast, however, the fact that inventions are tools — a means for performing some specified ends — entails that *only* structural properties define and individuate them. The is because only the structural properties of an invention make a difference to its functionality — its ability to be a means to the specified end in question — rather than the identity of its inventor. Thus, unlike artistic works, inventions are wholly individuated by their structure.

In understanding the structure-individuation thesis, consider first again a simple metaphysical picture. In my metaphysical explication of author-individuation, I argued that it is because artistic works are made with the expression of their author — and because expression is dependent on the source from which it came — it is not the case that artistic works could have been made by anyone other than their actual author.[93] However, inventions are not like this.[94] They do not contain some raw material — like authorial expression — that only that inventor could have used, and which thereby distinguishes one inventor's invention from any possible invention of another. Instead, since inventions are tools defined by what they do and how they do it, if the very same structure was made by the hands of two distinct inventors, it would indeed be the same invention. To put the thought differently: with respect to the raw materials used, inventions are more like apple piles, which simply is to say that someone else could have gathered up those very same apples.[95]

This conception of inventions as tools — only instrumentally valuable to perform a certain specified end — also entails that inventor identity does not *matter* to a tool's value, as it does not impact its ability to perform its intended aim. I argued above that the expressive nature of artistic works entails that where they come from makes a difference to what they are in a way that bears on the artistic works' defining (aesthetic) proper-

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[93] See Part III.C *supra*.

[94] At least, so long as they are not inventions while *also* being artistic works. I return to this question of works with expressive-functional overlap in the final Part.

[95] This is not to say anything about the relative ingenuity of authors or inventors, nor that of artistic works versus that of inventions; rather, it is specifically a metaphysical claim about the materials from which they are constructed. I further explain this clarification in the following Section.

ties. But the same is not the case for functionality. To the contrary, whether a certain tool will successfully achieve its intended aim — a computer successfully performing computations, for example, or a medication successfully curing a specified ailment — wholly is a matter of its structural properties, rather than anything about from where it originated. Inventor-identity just does not make a difference to the nature or value of inventions in the way that author-identity does for artistic works. And thus, two inventions which perform the very same function in the very same way really are same invention in all ways that matter, even if devised by distinct, independently acting inventors.

Next, that inventions are structure-individuated (rather than individuated by the identity of their inventor) also coheres with our practices in talking about them. For instance, it has been said that history is littered with examples of two inventors independently arriving at the "same" inventive idea around the same time. In fact, as Mark Lemley has shown, the majority of inventions — including so-called "pioneering" ones — actually were invented simultaneously (or nearly simultaneously) by two or more teams working independently of each other.[96] As others have noted, this is due to the fact that inventors are both driven by the challenges raised by current technological limitations and constrained by the laws of physics and chemistry (as well as the available scientific knowledge).[97] Donald Campbell has compared simultaneous inventors to rats in a maze, each independently discovering the same path because it is the path that is there to be discovered.[98] Another reason for this is that invention is not a discontinuity, but rather, an incremental step in an ongoing process,[99] as

[96] Mark Lemley, *The Myth of the Sole Inventor*, 110 MICHIGAN L. REV. 709 (2012) (identifying a number of examples of inventions famously associated with one particular inventor that in fact were being explored on similar by a number of independently acting people at a particular time, or ones making equally incrementally important contributions, including the steam engine, steamboats, the cotton gin, the telegraph, the telephone, the sewing machine, the lightbulb, the movie projector, the automobile, the airplane, the radio, television, the computer, lasers, and more).

[97] Robert K. Merton, *Singletons and Multiples in Scientific Discovery: A Chapter in the Sociology of Science*, 105 PROC. AM. PHIL. SOC'Y 470, 473 (1961) (arguing that inventions largely occur, not because an individual inventor did something particularly creative or surprising, but because the time and conditions were right for the particular invention); Lemley *supra* note 81 at 712.

[98] Donald T. Campbell, *Evolutionary Epistemology*, in 1 THE PHILOSOPHY OF KARL POPPER 413, 435 (Paul Arthur Schilpp ed., 1974), reprinted in REVOLUTIONARY EPISTEMOLOGY, THEORY OF RATIONALITY, AND THE SOCIOLOGY OF KNOWLEDGE 47, 71 (Gerard Radnitzky & W.W. Bartley, III eds., 1987); Lemley, *supra* note 81 at 715.

[99] It has been noted that this incremental nature of invention entails that the assignment of a patent sometimes involves arbitrary decisions. *See, e.g.,* CHRISTO-

inventors work with the tools they are given and try to improve those tools or use them to make something new.[100] In contrast, it would be odd to hear a suggestion that two independent authors made the *same* work. In part, this is undoubtedly because it seems wildly improbable that two authors would independently (say) write plays that are structurally identical, especially since artistic works are not so constrained by the knowledge and laws of the actual world and instead enable us to explore *other* possible words. But even this fact of improbability, while not an argument alone, adds intuitive pull of the idea that artistic works are tied to their authors in a specific way that inventions are not tied to their inventors.

Similarly, as noted in the prior Section, the fact that inventions are not themselves imbued with something uniquely tied to their inventor explains why — despite the ongoing debate about whether an artist's expression can be wholly separated from the artist — an analogous debate does not exist in the domain of inventions. Of course, there are many instances of individuals or groups refusing to use inventions produced by inventors or in contexts that they deem objectionable. For instance, some members of the Jewish community might refuse to purchase German vehicles, while some Americans (particularly right after World War II) have refused to purchase Japanese ones. But I submit that the motivation in doing so is not the belief that the vehicle's German or Japanese origin makes a difference to the vehicle *itself* (e.g., makes it defective), or that a vehicle with identical structural properties made in a different nation would be meaningfully different (e.g., with different functionality). It is instead the desire to not own something made by (or give money to) German or Japanese individuals. In other words, while these would be traditional boycotting arguments against certain inventions based on whether their inventors or the circumstances of their origin should be financially or symbolically supported, no one seriously suggests that the *invention itself* is imbued with something — like expression — to which the inventor's identity (and morality) alone makes a real difference.

One might push back on the picture of inventions as structure-individuated with examples of certain inventions that indeed *are* often picked out by reference to the invention's inventor, or alternatively by the trade-

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PHER BEAUCHAMP, INVENTED BY LAW: ALEXANDER GRAHAM BELL AND THE PATENT THAT CHANGED AMERICA (2015) (challenging the popular myth that Bell was the telephone's sole inventor and argues that American courts, more than anything, were the ones to anoint Bell the father of the telephone). If anything, this fact further brings to light the inessential relationship between any particular inventor and the structure they have created.

[100] Wilfred Schoenmakers & Geert Duysters, *The Technological Origins of Radical Inventions*, 39 RES. POL'Y 1051 (2010) (studying 157 different inventions and concluding that they were all largely based on incremental extensions of existing knowledge); Lemley, *supra* note 81 at 715.

marks or brands attached to them indicating their origin. For example, consider the case of the telephone, which essentially is composed of a receiver and a transmitter that converts sounds to electrical signals that can be reproduced as sounds at a distant location. Although Alexander Graham Bell was the first to be awarded a patent for a telephone by the USPTO in 1876 — an invention which he described as an "Improvement[ ] in Telegraphy"[101]Bell's version of the telephone might be distinguished from a number of very similar devices invented by others around the same time, such as Elisha Gray's telephone (for which he filed a patent caveat on the same day as Bell's application, their inventions ultimately put into interference) or Thomas Edison's telephone (involving a carbon transmitter and for which he filed a patent for in 1877). However, I submit that one distinguishing between Bell's telephone and Gray's telephone by reference to their respective inventors would not be doing so because inventor's identity makes a difference to the *invention itself*, in the way that authorial identity and expression makes a difference to the aesthetic properties of Warhol's versus Pettibone's brillo boxes. Rather, this distinction between Bell's and Gray's telephones might be made because, e.g., it is noteworthy that both invented telephonic devices at around the same time, or because their own versions of the telephone in fact had some noteworthy *structural* differences, ones thus conveniently picked out by reference to the originating inventor.

Relatedly, consider the case of named and branded inventions. While we might say that "a phone with a touchscreen which is utilized to operate mobile applications and browse the internet. . ." (and so on) is a structure-individuated invention, surely *iPhones* are inventor-individuated; and only Apple (or its constitutive inventors) could have made iPhones. In this way, the argument goes, iPhones are like artistic works, which (we saw earlier) are also referred to by their names, or at least by origin-referencing definite descriptions like "Mala's third novel" or "Erick's fifth musical composition". Similarly, it might matter to some individuals — such as devoted Apple product aficionados — that their phones, laptops, and tablets really do originate with Apple. But still, if anything, these examples of named, branded, or trademarked inventions only make clearer this important difference between inventions and artistic works in their (for lack of a better word) *raw* states. In other words, whereas artistic works are *naturally* individuated by author — naturally and uniformly referred to by name — inventions only become inventor-individuated upon the creation of a brand or trademark distinguishing them and gaining a cultural (perhaps even authorial) following. Indeed, this goal of individuation precisely is why such trademarks exist. In contrast, no such brand or trademark

[101] U.S. Patent No. 174,465 col. 1 11. 4-5 (filed Feb. 14, 1876).

needs to be introduced for an author to distinguish her artistic work from that of another: it is already, by its very nature, individuated. Thus, the distinction between artistic works and inventions survives.

It is important to emphasize the individuation theses assume or imply nothing about the relative skill, talent, or ingenuity required to produce artistic works versus inventions. To the contrary, though I am identifying a difference between the natures of artistic works and inventions — one in virtue of a difference between expression and functionality — the individuation theses wholly are agnostic about the nature of inventors or authors themselves (or as compared to each other). Instead, there of course is a wide range of artistic works and inventions varying in creativity and complexity, as well as the levels of skill and talent required to make them. To say that both Isaac Newton and Gottfried Wilhelm Leibniz independently invented calculus, for example, is not to say that just *anyone* has the ingenuity required of them to do so, nor does it take anything away from the brilliance of either or their profound differences as thinkers.[102] But it *is* to say that calculus is calculus, despite *A Gloomy Sunset* not being *Impressions of a Kickball*, as the identity of calculus's inventor does not make a difference to the nature of calculus itself.

Moreover, this clarification speaks to those who criticize "romantic" pictures of authorship (and comparatively "unromantic" pictures of invention) for envisioning authors as unique, isolated geniuses, creating works worthy of greater admiration than any other sort of artifact; for again, the individuation theses say nothing about authors or inventors *as such*, only about the nature of their works.[103] If anything, the author-individuation thesis entails that expression is, in some sense, easier to come by than invention, for the simple reason that *any* expressive being has the capacity to imbue even the work of another with their own expression. Thus, though I have argued that *authorship* is a special activity and that expression is itself something special, what I am not suggesting is that *authors* are special, in the sense that they constitute some genius subset of humans generally. Indeed, for an inventor to invent something that has not already been invented, she must make something structurally distinct from those inventions that already exist, and which plausibly gets harder to do over time as inventions accumulate. But the same is not required of an author, who — regardless of what artistic works already happen to exist — simply

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[102] It is worth noting that calculus — the mathematical analysis of continuous change — is perhaps more naturally described as a *discovery* rather than an invention. And there is a separate philosophical question of how inventions and discoveries are to really be distinguished (if at all). But the example nevertheless serves for present purposes, in virtue of mathematical ideas also being individuated by their structural properties.

[103] I return to considering authorial romanticism in Part III.a.

must produce genuine expression, something which any author always can produce.

2. Structure-Individuation and Non-Transformability

Picking up on this last line of thought, recall the argument that the author-individuation thesis and the transformable nature of expression are two sides of the same coin: or, that it is because each authors' expression is uniquely their own that subsequent authors can take the others' expression and imbue it with their own, something non-structural but nonetheless new, and which results in something distinct.[104] We can now see that inventions — in virtue of being wholly constituted by their structure — are not like artistic works in this way. I propose that this non-transformability and the structure -individuation thesis are also two sides of the same coin. Putting the idea bluntly, there is no analogous, transformable *special sauce* tied to an inventor's identity that a subsequent inventor can sprinkle onto the invention of a prior inventor — like how a subsequent author can imbue expression into the expression of another — in order to transform that invention without any structural modifications.[105] Rather, if the invention I am using shares the very same structural properties as one used by another, then we are simply and straightforwardly using the very same invention.[106]

To fully understand this argument, consider two possible phenomena that one might be tempted to call the transformation of inventions, but which still fall short of a true analog to expression-transformation and do not undermine the structure-individuation thesis. The first is the phenomenon of *improving* inventions. By way of example, imagine that you have made some invention with modules 1, 2, and 3, which permits you to perform X task. I may then subsequently improve your invention by making something with modules 1, 2, 3, and an additional module 4, where the conjunction of 1, 2, 3, and 4 is able to perform X task faster. One might be tempted to argue that this case of improving another's invention is relevantly analogous to expression-transformation: or, that just as authors can transform another's expression by using it in their own expressive work, inventors can transform an invention of another by improving upon it.

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104 See Part III.E *supra* .

105 We will see the important doctrinal and theoretical implications of this fact for intellectual property law in the following Part.

106 Note that a question arises at this point regarding "compiling" inventions: in other words, taking another's invention and, without changing its structural properties, simply adding it onto other inventions with other structural properties. I return to the further questions raised around individuating such "compiled" inventions in the final Part.

Nonetheless, this analogy would be misguided. For the takeaway from our exploration of expression-transformation was that an author can transform the expression of another *without* having to change structural properties, and while imbuing the initial author's expression *itself* with that of her own. In contrast, in the case of improvements on inventions, something structural has always been added or modified, and this addition still does not change the *underlying* invention added upon. Indeed, we will see below that this nature of inventions is reflected in existing patent law, as subsequent inventors can obtain patents on improvements of others' inventions but still can only utilize the *improvement specifically, not* the conjunction of the improvement and underlying invention's structure.[107] This is all to say that, though I might add module 4 to your modules 1, 2, and 3, I cannot use this improved invention without also using your original invention itself, in virtue of the latter *just being* the conjunction of modules 1, 2, and 3. To construct a better analogy, improving an invention is like merely adding a new chapter to *Catcher in the Rye* without any authorial intent as to the work itself — thereby creating what we might call *Catcher in the Rye+* — but *not* like creating a *Catcher in the Rye* parody or appropriation art, which would require a credible manifestation of authorial intent as to the original work's expression itself. One *can* take a story and genuinely transform it into their own by (say) critiquing or parodying it, but if one takes the invention of (say) a wheel and attaches it to a seat to create a bicycle, that which they have built upon is still, straightforwardly, a wheel.

A second, related phenomenon to consider is that of devising *new uses* for inventions.[108] As an example, an inventor might discover that a particular pharmaceutical drug composition — devised by another for the purpose of treating eczema — turns out to also be extremely useful for treating the entirely different ailment anemia, without having to make any structural changes to the drug composition at all. Thus, one might be tempted to describe this as a case of an inventor genuinely transforming another's invention, as she has devised a new function for the invention while nonetheless keeping all its structural properties the same. However, this is still importantly different from the sort of transformation we identified in the case of expression, for it is not anything about or tied to the *inventor's identity* that would be transforming the drug. Rather, it is that a wholly new function for its existing and unmodified structure has been discovered. Put differently, it is not the inventor but rather the *new use*

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[107] Lemley, *supra* note 177 (explaining this phenomenon of "blocking patents").
[108] We return to examining the individuation theses and their relationship with patent doctrine surrounding new uses of existing inventions Part III.c.ii below.

that the particular structure happens to have that transforms it.[109] In contrast, we saw that expression is always transformable by all authors simply in virtue of their status as expressive beings, and so long as they engage in an authorial act. And it is specifically this infinite and universal kind of transformability that I argued follows from — and is explained by — author-individuation.

At this point, it is worth restating that the individuation theses — and their starting points — have explicitly concerned the *paradigmatically* expressive and functional subject matters: artistic works and inventions. The final Sections of this Article will identify a number of further complications that the individuation theses might face, particularly once we do move beyond these paradigm examples that have so far been our focus. But even with these limitations and complications in mind, note that a skeptical reader might nonetheless resist the very premise that these arguments have presupposed. Specifically, such a skeptic might wonder whether this mysterious thing "expression" — allegedly present in artistic works but not inventions — is an implausible postulate, or alternatively whether it is naïve to think inventions are not just as expressive as well. But I want to emphasize that this skeptical critique ultimately targets, not the defended conceptions of artistic works and inventions or the individuation theses, but the fundamental categories and bifurcation itself. In other words, the real charge of the skeptic is that the "functional" versus "expressive" distinction of intellectual property law *itself* cannot really be substantiated or defended. The stated aim of this Article is to *attempt* vindicating this undertheorized bifurcation, and to do so by constructing — and independently defending — a theory of artistic works and inventions that also coheres with the core differences between copyrights and patents. Given this aim, then, I do not purport here to decisively undermine the skeptical challenge, but rather to offer what I think is the best available response to it. Thus, this skeptical challenge can largely be set aside here, although we will briefly return to it in the Conclusion.

In sum, this Part has defended that artistic works are author-individuated while inventions are structure-individuated, in virtue of the natures of expression and functionality themselves. With this conception of copyright and patent law's paradigmatic subject matter now in the background, our attention can return to intellectual property theory and law. In the following Part, we will use these individuation theses as frameworks to evaluate and vindicate copyright and patent laws' most defining structures and standards, and — in so doing — the very bifurcation of intellectual property law.

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[109] I examine other implications of the phenomenon of new uses for the structure-individuation thesis and existing patent law in Part III.c.ii below.

III. VINDICATING, REFINING, AND COMPLICATING INTELLECTUAL PROPERTY

This Part applies the individuation theses to intellectual property theory and doctrine. It begins by exploring their implications for the dominant normative theories of intellectual property rights' justifications, as well as for the existing scholarly debate about "romanticism" about authorship. It then explicates how the individuation theses cohere with the most defining features of — and differences between — copyrights and patents, thereby vindicating the fundamental bifurcation of intellectual property law. Next, this Part identifies aspects of existing doctrine that might conflict with the individuation theses, such that — if the individuation theses *have* correctly illuminated the nature of artistic works inventions, and thus ought to be fully incorporated by the law — these aspects of doctrine might need to be revised. Finally, the Part explores questions and complications raised by the subject matter of copyrights and patents falling *outside* of the explored paradigms, as well as by works with both expressive and functional properties.

A. The Individuation Theses and Intellectual Property Theory

1. The Individuation Theses & Consequentialist vs. Deontic Theories

As noted in Part I, most existing philosophical scholarship on intellectual property has focused on defending *normative* theories of intellectual property rights, typically whilst borrowing from existing theories of physical property. But the answer to the question of how a legal system should look is a function of *both* the normative aims of the system *and* the nature of the entities and activities that it governs. These normative and conceptual inquiries are in an important sense independent of each other, in that independent arguments must be made in order to defend them; but the answer to the conceptual question — once plugged into the favored normative picture — is liable to yield implications for how exactly the legal system in question ought to look. The individuation theses — which specifically regard the *nature* of artistic works and inventions themselves — thus seek to fill a gap in the existing theoretical scholarship surrounding intellectual property.

Prior to examining their implications for vindicating and refining existing doctrine, then, note that the individuation theses *also* have implications for the dominant normative theories of intellectual property. At the most general level, this is because the individuation theses entail that there is an important difference — metaphysically and normatively — between what exactly a copyright owner versus a patent owner really owns. Among other things, whereas copyright owners with rights in their artistic works

thereby own something that only they could have created, patent owners own something that itself could have been invented by someone else (whether or not someone actually does so, although we have seen that independent invention in fact does frequently occur). This itself is a normatively significant difference, as rights of ownership fundamentally are restrictions on the liberty of others.[110] In other words, to own something is to exclusively possess certain rights in it (whatever the nature of those rights might be), which precludes the possession of those rights by other individuals. Thus, the nature of the thing subject to an exclusive right undeniably bears on the justifiability of the right itself, and we should expect that these differential conceptions of artistic works and inventions — when plugged into theories of what justifies exclusive rights in either — could yield differential implications as well.

First, consider again the most widely embraced view of intellectual property law's justifications in the U.S.: that both copyrights and patents have a purely consequentialist justification, in that they are granted only to incentivize the development of valuable intellectual objects.[111] As noted above, according to this picture, intellectual property rights are necessary in order to provide authors and inventors the economic incentive to make the investments necessary to bring about these valuable artistic works and inventions.[112] But the individuation theses illuminate something important about the respective nature of these works, and — resultantly — their value to the world of consumers, users, and subsequent authors and inventors. Specifically, they tell us that the value of an invention is wholly determined by its structural properties, whereas the value of an artistic work is not. In more words, because the distinct authors' works have distinct aesthetic properties even if they are structurally identical, the value of an artistic work cannot be reduced to its structure. In contrast, the value of an invention — a tool performing some specified end — is reducible to its structure that wholly enables the performance of that end. In light of the individuation theses, then, a legal system aimed to incentivize the production of valuable artistic works and inventions must account for this important difference in what determines their respective value. In the following Section's examination of existing doctrine, we will see numerous ways in which it already does exactly this, while uncovering other ways in which it might fall short and need to be revised.

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110 *See, e.g.*, Jeremy Waldron, *From Authors to Copiers: Individual Rights and Social Values in Intellectual Property*, 68 CHI.-KENT L. REV. 841 (1993) (arguing that intellectual property rights, in virtue of limiting the liberty of all those other than the rights-holders, require compelling justification).

111 *See, e.g.*, Landes & Posner, *supra* note 13.

112 *Id.*

Next, note that the individuation theses also have potentially significant implications for the *relative plausibility* of deontic theories of copyright versus patent law. To see this, consider the most popular deontic account noted above, which takes inspiration from Lockean labor theories of property.[113] In the case of physical property, the basic Lockean idea is that a laborer is entitled to the fruits of her labor because she labored to produce them. But author-individuation entails that a Lockean theory of copyright is on *prima facie* firmer positive grounds than Locke's theory of property, for an author's work is not merely something she made, but in fact something *only she could have* made. In other words, whereas someone else could have put in the labor to cultivate the field or gather the apples,[114] it is not the case that another's authorial activity could have resulted in the very same work as an author's, giving each a distinctly strong claim in the fruits of her work. Of course, another author could have made something looking very much like another's as a matter of structural properties, perhaps even indistinguishably so: but again, the implication of the author-individuation thesis is that such a work would have nonetheless been different. This is to say that the connection between authorial work and its creative fruits is arguably more intimate than the one between the work of labor and its physical fruits: an artistic work is *from* or even *part of* the author's person, the author's identity in part making the work what it is.

On the other hand, given the structure-individuation thesis, the same cannot be said of invention. In contrast to the relationship between an author and her creative fruits, the relationship between an inventor and her invention is *not* one of necessity but rather contingent actuality; for the inventor's identity does not make the invention what it is. Just as another laborer could have gathered the pile of apples I have gathered if I had not, an inventor could have produced the very same invention — with the very same structural properties — as another. Putting these ideas differently, granting an author an exclusive right in her artistic work does not *take anything away* from possible future authors,[115] in virtue of it being something only she could have made. But exclusive rights in inventions (or physical property) do take something away from possible future inventors (and laborers) that could have made them, thereby implicating their competing claims.[116] Thus, in virtue of the individuation theses, a Lockean

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113 *See supra* note 48.

114 On the assumption that the field and apple pile are not expressive — such as living art or performance art — as then they of course would be artistic works.

115 Assuming that the right is rightly and narrowly tailored to her work.

116 For in-depth defense of this argument on the comparative plausibility of Lockean copyrights versus Lockean patents as a matter of existing intellectual property

theory of copyright seems to be on prima facie stronger ground than a Lockean theory of patents, or even Locke's theory of property itself.[117]

Though I have only analyzed the implications of the individuation theses within the Lockean framework, a structurally analogous point can be made regarding Kantian or Hegelian theories of copyright and patent law respectively. In other words, *whatever* the normative basis of an individuals' right in the fruits of their work — whether it is their labor, their autonomy, or their personality — the case is only stronger when the fruits in question could only have come from *that* individual, as it follows that the link between the individual and her work is distinctly intimate and that possible competing claims of others are not so implicated. Thus, the individuation theses entail that the case for a deontic system of copyright is more compelling than for such a system of patent law (or even property), a conclusion that bears on subsequent normative theorizing generally. Indeed, given the sociological fact that scholars more frequently defend deontic theories of copyrights than of patents, the individuation theses offer a vindication of what might be an already latent intuition among them.

2. The Individuation Theses vs. Authorial Romanticism

At this point, it is worth noting that the dominant American position that *both* copyrights and patents have a purely consequentialist justification — more specifically, an economic justification — is almost distinctly American. In holding it, American scholars and courts have departed from the many other copyright systems — such as those in the United Kingdom, France, Germany, Canada, China, and more — that take authors' non-economic or "moral" interests in their work far more seriously. More generally, American scholars increasingly criticize what they take to be unduly romantic pictures of authorship, often justifying American law's underemphasis on authorial moral rights on this basis. Thus, it is worth speaking to the relationship between the author-individuation thesis and authorial romanticism, both as a theory of authorship and as it manifests in international copyright systems.[118]

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law, see Mala Chatterjee, *Intellectual Property, Independent Creation, and the Lockean Commons,* 12 U.C. IRVINE L. REV. 747 (2022).

[117] There are further important implications of the identified differences between artistic works, inventions, and physical property and, in particular, the *transformability* of artistic works — with respect to the relative plausibility of Lockean theories of rights in each. In particular, I argue elsewhere that the transformability of artistic works allows a Lockean theory of copyright to avoid the most devastating objections that Lockean theories of property have been faced with, and which are similarly damning for Lockean theories of patent law. Mala Chatterjee, *Lockean Copyright versus Lockean Property*, 12 J. LEGAL ANALYSIS 136 (2020).

[118] See, e.g., MARTHA WOODMANSEE, THE AUTHOR, ART, AND THE MARKET 35–55 (1994) (discussing the role of the figure of the inspired author in the emer-

There is an important way in which the author-individuation thesis constitutes a rehabilitation of a *kind* of romanticism about authorship, in virtue of recognizing a distinct connection between authors and artistic works and a special status of authorial activity. But as noted above, there is another important way in which I take the author-individuation thesis to be distinctly unromantic. Again, author-individuation does not entail that *authors* are special — and certainly not that they are geniuses — for *anyone* has the capacity to use their expressive special sauce and engage in authorship. Put differently, an author need only engage in a genuine act of expression; but this does not require her to make a novel or non-obvious *structure* for her work. Defending a similar idea while constructing an American conception of authorial romanticism — and distinguishing it from the more familiar European romanticism — Barton Beebe explains:

> What has been strangely missing from the debate over the romantic authorship thesis. . .is any appreciation of the crucial differences between English and other strains of European romanticism, on the one hand, and American romanticism, on the other . . . a specifically American romantic conception of the author that is altogether different from any stereotyped notion of heroic daemonic genius that legal scholars have associated with literary romanticism in general . . . Holmes's invocation of personality resulted not in a "restrictive and technical" originality requirement but rather in one that was broadly inclusive and emphatically liberal, egalitarian, and humanistic — and American. Holmes's statement that "a very modest grade of art has in it something irreducible, which is one man's alone," calls to mind Ralph Waldo Emerson's insistence on "the infinitude of the private man"; "every man has within him some[thing] really divine.". . . Much of the commentary both advocating and criticizing the romantic-authorship school of copyright commentary proceeds from a stock notion of the romantic "genius" as a revolutionary prodigy, a Promethean "creator ex nihilo of utterly new things." . . . But Holmes's formulation of the originality requirement in *Bleistein* invoked a different, distinctively American and distinctively democratic — and more particularly, Emersonian — image of everyday, common genius.[119]

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gence of German copyright laws); Martha Woodmansee, *On the Author Effect: Recovering Collectivity*, 10 CARDOZO ARTS & ENT. L.J. 227, 281–82, 289 (1992) (discussing the persistence of collaborative modes of writing in European literature notwithstanding the rise of the myth of the author as a solitary genius); MARK ROSE, AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT 4–8 (1993) (tracing the invention of the author and the development of copyright law in eighteenth century Britain); Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 1008–12 (1990) (discussing the "romantic model of authorship"); Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of "Authorship,"* 1991 DUKE L.J. 455 (tracing the impact of the romantic conception of authorship on American copyright law).

[119] Barton Beebe, *Bleistein, the Problem of Aesthetic Progress, and the Making of American Copyright Law*, 117 COLUM. L. REV. 320, 366-71 (2017).

In sum, the author-individuation thesis does depart from the dominant American picture in recognizing a special status of expressive works. But it also departs from the European romanticism underlying many other nations' copyright systems rights by embracing a permissive and egalitarian picture of expression itself, one wherein a subsequent author can imbue an earlier author's work with her expression to create something new even without any substantial structural modifications, as she would be no less *authorial* than the original author in doing so. Thus, the author-individuation thesis embraces a picture of authorship importantly different from both dominant narratives, one which will yield implications for legal systems grounded in either. Indeed, in the following Section's examination of possible refinements for existing U.S. doctrine from the author-individuation thesis, we will see ways in which American law's current treatment of transformative authorship — itself more permissive than most other nations — nonetheless *still* falls short of fully protecting it.

B. Copyright Law

1. Vindicating Doctrine: Originality (Not Novelty), Independent Creation, & Transformative Fair Use

Turning now toward the individuation theses' implications for vindicating and refining existing doctrine, consider again copyright law's central and defining structure, first with respect to *independent authorship*. As noted in Part I, copyright protection i) extends to original rather than novel expression[120], and ii) prohibits *copying*[121] rather than independently creating. In more words, copyright law does not require that an author's work look structurally different from all existing works — that it constitutes a "new" composition of structural properties — in order for it to be copyrightable; instead, it only requires that the artistic work come from or originate in the author herself. Moreover, if an author's independently created work does turn out to share all (or may) of the same structural properties as an already existing and protected work, then it still does not violate that existing work's copyright, in virtue of the fact that it was independently created. These features of copyright — ones which might be understood as two sides of the same coin — are *definitional* of copyright itself; and although different existing and possible systems of copyright law

120 S*ee* Part I *supra*.

121 At least, *non-expressive* copying, which is properly understood as a subset of all copying. I say more about this below.

might differ on various other specific rules or details, they nonetheless share in this fundamental structure.[122]

This basic structure coheres with — and is made sense of by — the picture of artistic works as author-individuated. By requiring originality rather than novelty for protection, copyright law suggests — I have argued, correctly — that a work originating in one author is distinct from those originating in others in virtue of being *that* author's expression, no matter how much it might otherwise resemble others' works. Similarly, in treating independent creation as a complete defense to claims of infringement, copyright's structure reflects the fact that a subsequent author's independently made work always is distinct from the works of others irrespective of structural similarities, such that it should not infringe on an earlier author's right.[123] This is not to say that the author-individuation thesis dissolves all of the conceptual puzzles embedded in this structure of copyright, as we saw above that it still requires a theory of what precisely an act of original authorship (as opposed to infringement) looks like, or what it takes for an author to really *create* something.[124] But I return to this question in the following Section, wherein I explicate how the author-individuation thesis might require refinements of existing doctrine.

Next, consider copyright's conception of *transformative authorship*, involving a subsequent author taking the expression of an earlier author and then imbuing it with her own, thereby resulting in something new. We have seen that it is in virtue of the unique, author-individuated nature of expression that this second kind of transformation is possible: that I can, not merely re-express the ideas an earlier author has expressed, but in fact use her expression itself as a raw material for my own author-individuated work.[125] In U.S. copyright law, the doctrine of fair use in part seeks to exempt such "transformative" uses of protected expression from liability.[126] In particular, 17 U.S.C. § 107 states the following:

> Notwithstanding the provisions of sections 17 U.S.C. § 106 and 17 U.S.C. § 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by

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122 This is not to say that every system of copyright has perfectly *implemented* this defining limitation. To the contrary, I identify ways in which U.S. doctrine falls short in the following Section, calling for these aspects of doctrine to be revised.

123 However, note that as a matter of existing law, actual copying can be *inferred* from structural similarity in order to establish a *prima facie* case of copyright infringement. I return to this aspect of doctrine — and how the author-individuation thesis might call for it to be revised — in the following Section.

124 *Infra* Part II.A.i.

125 *See* Part III.E *supra*.

126 Albeit imperfectly: the following Section will argue that the notion of "transformativeness" in existing fair use doctrine perhaps is too narrow to protect *all* transformative authorship and in need of refinement.

> that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include:
>
> 1. the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
> 2. the nature of the copyrighted work;
> 3. the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
> 4. the effect of the use upon the potential for or value of the copyrighted work.[127]

In essence, fair uses are uses of copyrighted material that are permissible in virtue of the way in which the material is being used. And an important function of the doctrine is to protect expression-transforming authorship resulting in distinct works. Indeed, in his seminal Article *Toward a Fair Use Standard,* Judge Pierre Leval introduced the concept of "transformativeness" into fair use law, arguing that it should promote free speech and creativity by giving non-independent creators the freedom to build on preexisting works.[128] Thus, one way of describing the doctrine is that it recognizes (among other things) that a subsequent author expressively using an earlier author's expression has created a distinct and author-individuated work of her own, and such that she should not be liable for infringement. As a simple example, while it would be infringing for me to simply copy and reproduce protected materials from an author's book and sell them as my own work, it would be fair use for me to utilize said protected materials as a quotation in the context of producing a criticism of the book itself. Similarly, although simply copying the defining guitar riff of another musician's song into one of my own would constitute infringement, using the riff in order to make a parody of that earlier song — imbuing it with my own, parodic expression — would transform it into something new and also be fair use.[129] Thus — though we will see in the following Section that the current doctrinal conception of transformative-

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127 17 U.S.C. § 107.

128 Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105 (1990).

129 Indeed, the landmark example of expression-transformation in U.S. law — which called the "transformativeness" inquiry the heart of the fair use doctrine — is the Supreme Court's case *Campbell v. Acuff-Rose Music, Inc.*, which regarded the rap group 2 Live Crew's parody of Roy Orbinson's "Oh, Pretty Woman." 510 U.S. 569 (1994). Therein, the Court emphasized the importance of permitting others to build on copyrighted material and create new works, and it held that the parody in question — though copied the heart of the original song (its first line and opening bass riff), "the heart is what most readily conjures up the song for parody," and is therefore necessary to be copied (and imbued with parodic expression). *Id.* at 1167.

ness might fall short — it nonetheless constitutes an important recognition of (and permission for) this distinct and important creative phenomenon.

2. *Refining Doctrine: Rethinking Independent Creation and Infringement vs. Transformation*

With this vindication of copyright law's core structure in the background, we now turn toward the author-individuation thesis' implications for refining aspects of existing doctrine, specifically with respect to copyright law's understanding of authorship and infringement. To reiterate, the author-individuation thesis entails that the identity conditions of artistic works are not wholly a matter of their structural properties, but rather, also of their authorial origins; for two structurally identical works originating from distinct authors would nonetheless be distinct. In Part II, I further explained that the question of authorial origin itself turns in part on whether the author has *genuine authorial intent,* as authorial intent is necessary for an action to authorship rather than infringement, creating a distinctly expressive and author-individuated work. But I also argued that authorial intent is not *sufficient* for something to be a distinctly created work, as — due to the communicative nature of expression — the surrounding *context* and *conventions* must entail that the work also credibly *manifests* that authorial intent, such that it can have a *communicative effect.* More simply, though an artistic work is individuated by its author, *whether it counts* as the author's work is not wholly up to her own whims; it is also a matter of context, convention, and communicative effect. And while the basic structure of copyright law recognizes and coheres with the author-individuation thesis as explained in the prior Part, this full range of its implications are not yet wholly reflected in existing doctrine.

Consider first a possibly revisionary implication for current doctrine around *independent authorship.* As noted above, copyright law's independent creation defense coheres with the conception of artistic works as author-individuated, seemingly recognizing that two independently acting authors' works are distinct regardless of any structural similarity. But although the independent creation defense is a defining feature of copyright law — bluntly, a right only against copying — the question of how it should be doctrinally operationalized raises several theoretical complexities. For example, consider a wrinkle offered by the doctrine of *subconscious copying,* according to which one can infringe on another's copyright by producing a substantially similar work while lacking any conscious awareness that they have copied.[130] Subconscious copying still requires prior access to the work infringed upon, but it does not require any knowledge or awareness of a causal dependence between the work observed and

[130] Three Boys Music Corp. v. Bolton, 212 F.3d 477, 482 (9th Cir. 2000).

the work produced.[131] The doctrine of subconscious copying was embraced by Learned Hand in a 1924 music infringement case, wherein he explained:

> Everything registers somewhere in our memories, and no one can tell what may evoke it. . . . Once it appears that another has in fact used the copyright as the source of this production, he has invaded the author's rights. It is no excuse that in so doing his memory has played him a trick.[132]

Arguably the most prominent case in which a court embraced the theory of subconscious copying is *ABKCO Music, Inc. v. Harrisongs Music, Ltd*.[133] Therein, the Second Circuit affirmed a jury's verdict that former Beatle George Harrison subconsciously copied The Chiffons' "He's So Fine" in writing the song "My Sweet Lord" released six years later.[134] Harrison admitted to hearing "He's So Fine" in 1963, when it was number one on the Billboard charts in the United States for five weeks and one of the top thirty hits in England for seven weeks; and the court found that "the similarity was so striking and where access was found, the [temporal] remoteness of that access provides no basis for reversal."[135] The court further emphasized that, when a defendant's work is copied from the plaintiff's, but the defendant in good faith has forgotten that the plaintiff's work was the source of his own, such "innocent copying" can nevertheless constitute an infringement.[136]

Many scholars have debated whether subconscious copying ought to constitute copyright infringement.[137] But for our purposes, the doctrine brings to light an important question about what exactly even *constitutes* independent creation, or what it takes for an author to independently create an author-individuated work. In particular, it raises the question of whether independent creation wholly turns on questions of *causation* (i.e., whether a copyrighted work has caused, in some sufficiently close respect, the subsequent work), or instead questions of something like *intention* (i.e., whether a copyrighted work has been intentionally appropriated in

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131 *Id.*

132 Fred Fisher, Inc. v. Dillingham, 298 F. 145, 147–48 (S.D.N.Y. 1924).

133 722 F.2d 988 (2d Cir.1983).

134 *Id.* at 990.

135 *Id.* at 998.

136 *Id.*

137 *See, e.g.*, Mala Chatterjee & Jeanne Fromer, *Minds, Machines, and the Law: the Case of Volition in Copyright Law,* 119 COLUM. L. REV. 1887, 1912 (2019); Shyamkrishna Balganesh, *Copyright as Market Prospect*, 166 U. PA. L. REV. 443, 492-96 (2018); Robin Feldman, *The Role of the Subconscious in Intellectual Property Law*, 2 HASTINGS SCI. & TECH. L.J. 1, 4-10 (2010); Wendy J. Gordon, *Toward a Jurisprudence of Benefits: The Norms of Copyright and the Problem of Private Censorship*, 57 U. CHI. L. REV. 1009, 1028-32 (1990).

creating the subsequent work).[138] And thus, under the presently favored conception of authorship, it is possible that the doctrine of subconscious copying might need to be abolished.[139] If an artistic work was only subconsciously copied, the argument would go, then this would seem to entail that the conscious intentions leading to the proliferation of the work were genuinely authorial, such that a "subconscious copier" is still engaging in act of authorship and creating a distinctly author-individuated work.[140] I intend to explore and defend this understanding of the nature of authorship — and its implications for the doctrine of subconscious copying — more extensively in future work. But the dialectic illustrates a way in which the author-individuation thesis might call for refinements existing doctrine in order to adequately protect the full range of independent creators, depending on further theorizing about the nature of independent creation itself.

Relatedly, consider challenges surrounding the question of how to *prove* independent creation (or the lack thereof). While plaintiffs alleging copyright infringement are required to establish "actual copying," existing law allows an inference of actual copying from circumstantial evidence in cases where the works are substantially similar[141] and the allegedly infringed work is popular, or where the two works share striking similarities.[142] Thus, in such cases, actual copying is inferred using the work's *structural* properties, functionally constraining the independent creation defense. In *Three Boys Music Corp. v. Michael Bolton*, for example, the Ninth Circuit found Michael Bolton's 1991 pop hit "Love Is a Wonderful Thing" to be infringing on the popular rhythm and blues group the Isley Brothers' 1964 song of the same name.[143] Therein, the court explained that — absent direct evidence that the defendant copied the protected work — a plaintiff can use circumstantial facts to prove infringement by showing the defendant had access to the protected work and that the two works are substantially similar.[144] Moreover, the court said, the plaintiff

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138 Another way of putting this idea: is independent creation a matter of "independence" (causal independence) or "creation" (creative intent)? I aim to explore this question in future work.

139 I say "might" because I have not addressed here the possibility of subconscious intentions (rather than merely conscious ones) making a difference to whether something is an authorial act. I set this aside for future work on the nature of authorship.

140 *But see* Shyamkrishna Balganesh, *Causing Copyright*, 117 COLUM. L. REV. 1 (2017) (arguing that copyright law's conception of authorship ultimately seeks to track who is casually responsible for the creation and fixation of the work).

141 We return to general problems with the substantial similarity standard below.

142 *See infra* notes 143–132 and accompanying text.

143 212 F.3d 477, 480 (9th Cir. 2000).

144 *Id.* at 481.

might establish access through circumstances linking the two artists specifically, or instead by simply showing that the protected work was widely available, such that the defendant was likely to have heard it.[145] The Isley Brothers based its access argument on the dissemination and popularity of their song upon its release, in combination with the fact that Bolton grew up listening to rhythm and blues groups.[146] In contrast, Bolton did not admit to hearing the song, noting that it never made the Billboard 100 and was not released in an album or compact disc until 1991, a year after his allegedly infringing song was written.[147] He further argued that the mere possibility that he heard it on the radio while a teenager was not sufficient to establish that he actually copied it twenty-five years later.[148] Nonetheless, the court upheld the jury's determination of access, arguing that teenagers are avid music listeners and that it is "entirely plausible" that one obsessed with rhythm and blues music "could remember an Isley Brothers' song that was played on the radio and television for a few weeks, and subconsciously copy it twenty years later."[149] And this finding of access — in combination with the similarities between the two songs — was enough to support an inference of actual copying, and an ultimate finding of copyright infringement.

Consider next a case involving "strikingly" similar works. In *Ronald H. Selle v. Barry Gibb*, the Bee Gees were sued on the allegation that their hit song "How Deep is Your Love" had infringed on the copyright of Selle's song "Let it End." Selle presented evidence that the Bee Gees' song and his were strikingly similar, including a professor of music testifying that, in his opinion, the similarities were explained by actual copying. The Seventh Circuit agreed with the plaintiffs' theory that, absent direct evidence, access can be inferred from the similarity between the two works if it is "so striking that the possibilities of independent creation, coincidence and prior common source are, as a practical matter, precluded." But the court noted that there must still be some evidence establishing a reasonable possibility that the plaintiff's work was available to the defendant, as access could not be inferred from striking similarity if the plaintiff admitted to keeping her creation under lock and key. With respect to this case, the Seventh Circuit found that Selle failed to present evidence of even the minimal possibility of access, as his song was only distributed to fourteen music publishers (eleven of whom returned it unopened, and three of whom never responded) and performed publicly two or three times (with no evidence that the Bee Gees or their associates were in at-

145 *Id.* at 482.
146 *Id.* at 483.
147 *Id.* at 484.
148 *Id.*
149 *Id.*

tendance). But the implication of the court's articulated rule is that, in all cases where there is some threshold level of evidence that the plaintiff's work was available the defendant, striking similarity would indeed be sufficient for an inference of actual copying.

In sum, these existing aspects of doctrine permit an inference of actual copying based on the works' structural properties alone, and soften copyright's most central and defining safeguard in so doing. For if substantial similarity with popularity is sufficient for establishing copying, then all independently created works which *do* happen to be structurally similar to popular ones are effectively unprotected; and similarly, if striking similarity and the mere possibility of access is also sufficient, then — particularly in the internet age, where all disseminated works are so widely and easily available — any independently created works strikingly similar to existing ones are unprotected unless the latter are essentially inaccessible or "under lock in key." Put differently, these doctrines effectively eliminate protections for two possible classes of independently created authorial works. Instead, the author-individuation thesis seems to suggest that — absent overriding reasons to the contrary — perhaps courts should rethink how to balance copyright's defining limitation with these evidentiary challenges, such as by raising the standard for permissible inferences of copying, and instead erring on the side of protecting independent authorship.

Consider next the author-individuation thesis's implications for refining existing doctrine around *transformative authorship*. Beyond establishing that the defendant actually copied from the plaintiff rather than creating independently, a plaintiff must establish that this copying constituted an *improper appropriation* (rather than only of, say, de minimis elements or unprotected ones like ideas or facts) in order to succeed in an infringement claim.[150] Moreover, while the copyright statute itself surprisingly is silent as to the question of how to evaluate improper appropriation, the judicially created *substantial similarity* standard has filled that gap.[151] Specifically, courts have developed a number of related tests for evaluating whether an allegedly infringing work is substantially — and thereby impermissibly — similar, and which essentially ask juries to determine whether an ordinary observer of the works in question would consider them as such.[152] If the jury does so determine, then the *prima facie* case for copyright infringement has been established.

The substantial similarity standard for infringement has been criticized by scholars on a number of grounds, including that it is unacceptably vague, that it produces inconsistent and unpredictable results, and that the

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150 Arnstein v. Porter, 154 F.2d 464, 468 (2d Cir. 1946).
151 *Id.*
152 *Id.*

ordinary observer is ill-equipped to filter out the works' unprotected aspects (e.g. ideas, facts, and common stock elements) and assess only the similarity of the protected expression, such that the standard will result in findings of infringement more often than it should.[153] But the standard also is objectionable from the perspective of the author-individuation thesis and its implications, in virtue of deeming substantial *structural* similarity alone to be *sufficient* for infringement by the subsequent author. In other words, the standard fails to fully reflect the fact that a work is not wholly constituted by the structural properties, or that a subsequent author's work — despite sharing structural similarities with an existing one — might still be importantly distinct, perhaps in virtue of non-structural properties tied to authorial intent, context/conventions, and communicative effect.

By way of background, the substantial similarity standard was fashioned in order to assure both that a *de minimis* copier (e.g., one who copies a word from a book) is not than liable for infringement, and that a plagiarist who makes immaterial variations (e.g., one who copies another's work in its entirety while sprinkling in a few minor additions or changes) does not thereby escape infringement liability.[154] But that a plagiarist should not be able to escape liability solely through immaterial variations does not itself entail that anyone who encounters a work and then produces something with substantial structural similarities should be liable. Rather, it simply reflects the fact that immaterial structural variations are not sufficient (or perhaps even necessary!) for the creation of a new work. Put differently, the problem with a plagiarist who makes immaterial variations— merely stapling a page onto the back of the *Catcher in the Rye*, for example — is that this page simply does not make the entirety of what she has produced genuinely *hers,* her expression, her author-individuated work. And this is because she has not engaged in an authorial act—one with authorial intent, in accordance with context and convention, and resulting in a distinct communicative effect — as to the text of the *Catcher in the Rye*.[155]

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153 *See, e.g.*, Amy B. Cohen, *Masking Copyright Decisionmaking: The Meaninglessness of Substantial Similarity*, 20 U.C. Davis L. Rev. 719 (1987); Mark A. Lemley, *Our Bizarre System for Proving Copyright Infringement,* 57 J. Copyright Soc'y 719 (2010); Zahr K. Said, *A Transactional Theory of the Reader in Copyright Law*, 102 Iowa L. Rev. 605 (2017); Shyamkrishna Balganesh, *The Normativity of Copying in Copyright Law*, 62 Duke L.J. 203 (2012).

154 Nichols v. Universal Pictures Corp., 45 F.2d 119, 121 (2d Cir.1930) (L. Hand, J.).

155 *But see* our discussion of Richard Prince's *Catcher in the Rye,* which (in my view) stimulates compelling arguments both for and against a finding of transformative authorship. *See supra* notes 84-88 and accompanying text.

Thus, an infringement standard according with the implications of the author-individuation thesis would require, not merely substantial structural similarity, but also the absence of authorial intent that is credibly manifested in the follow-on work. In more words, such an inquiry would first ask about substantial structural similarity, and *then* whether any similarities nonetheless constitute the subsequent author's expression, looking broadly for evidence of authorial intent and its manifestation. One way of crystallizing such a standard that should be palatable for the courts might be the question of whether the work could be *reasonably regarded as transformative* or *the subsequent author's expression*, and which would thus call for a holistic analysis considering — beyond just its structural properties — the work's surrounding context and conventions, the medium and its practices, the reception of the work by others, and of course the author — and what she says and does — herself.

As an example, this modified infringement standard would entail that the Second Circuit's infamous decision in *The Andy Warhol Foundation for the Visual Arts, Inc. vs. Lynn Goldsmith* — recently affirmed by the U.S. Supreme Court — erred in its finding of copyright infringement.[156] Therein, the Second Circuit overturned the district court's finding that Andy Warhol's use of photographer Lynn Goldsmith's image of iconic musician Prince in creating his *Prince Series* — a series of portraits in Warhol's characteristic pop art style — constituted fair use, instead holding that Warhol's works were substantially similar to and infringing upon Goldsmith's photograph.[157] In so finding, Judge Gerard E. Lynch wrote that the judge "should not assume the role of art critic and seek to ascertain the intent behind or meaning of the works at issue," despite also acknowledging the clearly intentional and immediately recognizable imposition of Warhol's iconic expressive style, and even supposing an obvious difference in the manner in which both artists intended to depict Prince himself (e.g., as a "vulnerable human being" in Goldsmith's photograph and an "iconic, larger-than life figure" in Warhol's).[158] Contrary to this conclusion, if copyright's infringement standard is to correctly track what the author-individuation thesis illuminates about the nature of authorship, such a clear case of distinct authorial intent (through Warhol's style in the particular work), cohering with context/convention (through Warhol's style in his other works and the conventions of contemporary art) and having a communicative effect (through the viewer's recognition of Warhol's style and recasting of Prince) ought not be deemed infringement at all. Rather, the fact the work is — by the Second Circuit's own

156 992 F.23d. 99.

157 *Id.* at 124.

158 *Id.* at 113.

admission — reasonably regarded as Warhol's expression (even while depicting Prince in a different light!) should have resulted in a finding that that the work as something new rather than a mere infringement.[159]

Left: Lynn Goldsmith's photograph of Prince; Right: Images from Warhol's series on Prince

In the Supreme Court's recent opinion affirming this decision, copyright law's infringement standard is not addressed. Instead, the Court takes the Second Circuit's substantial similarity finding as given and focuses its analysis on the first fair use factor — namely, the "purpose and character" of Warhol's use of Goldsmith's photographs — finding this factor to favor Goldsmith in virtue of Warhol's commercial purposes in licensing his Orange Prince portrait to Condé Nast. This is to say that the Supreme Court majority does not grapple with the question of whether Warhol's portraits are, notwithstanding structural similarities to Goldsmith's photograph, nonetheless *his own* works of authorship, and which

[159] It is worth underscoring that this proposed *reasonableness* standard is likely to face far more skepticism than it (in my view) should, in virtue of reasonableness inquiries otherwise serving courts as a useful standard across countless areas of law. Moreover, while the proposal does in part require evaluating what was likely going on in the defending author's mind (in particular, whether it included authorial intent), this alone should not be alarming, for it is often illuminated vividly by the evidence (as in *Warhol v. Goldsmith*) and otherwise also something legal systems are routinely called to do. For a discussion of the role of mental states in legal liability in a number of contexts, see Mala Chatterjee and Jeanne Fromer, *Minds, Machines, and the Law: The Case of Volition in Copyright Law*, 119 COLUM. L. REV. 1887 (2019).

thus ought to fall outside the scope of Goldsmith's copyright. This question is conceptually prior to the question of fair use; and if the answer is yes — as it ought to be here, for reasons including those explicitly mentioned by Judge Lynch — then whether that transformative work is being put to a commercial purpose is irrelevant, as the work itself ought not be deemed infringing at all.

If copyright law's infringement standard itself adequately protected transformative authorship, then the affirmative defense of fair use would no longer be tasked — overwhelmingly and inconsistently — with doing so. Instead, the doctrine could focus the *non-authorial* unauthorized uses of copyrighted works that we deem permissible, such as ones with educational or non-expressive purposes. But the absence of something like the proposed infringement standard, copyright doctrine minimally requires a revised understanding of transformative fair use, as the present tests also do not capture the full range of transformative authorship. As it stands, we find a variety of distinct (and inconsistent) tests across cases, ranging from whether the subsequent work has a new meaning or message, has substantively different aesthetic (by which they mean *structural*) properties, or produces a different impression on viewers.[160] But scholars have already challenged these existing tests for failing to capture — and safeguard — the full range of transformative authorship. Most notably, Amy Adler has criticized existing fair use law for being out of step with contemporary creative practices, and the present significance of expressive copying as a technique for making new works of art.[161] The author-individuation thesis — and its conception of expression — entails that these criticisms are entirely well-founded. Even if a distinct meaning or message, substantially different aesthetic properties, or a different impression on viewers might often be *evidence* that a work is transformative rather than merely copied, it is not the case that any one of these should always be necessary or dispositive. Instead, the picture of artistic works and authorships that I have sketched — and the interconnected roles of intent, conventions and context, and (of course) structure in constituting the work — calls for a more holistic and permissive inquiry to determine if a work's expression is something distinct.

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[160] For an explication of these distinct tests for transformativeness and their problems, see Amy Adler, *Fair Use and the Future of Art*, 91 N.Y.U. L. Rev. 559 (2016).

[161] *Id.* at 561 (discussing and defending the copying-based artwork of Richard Prince).

C. *Patent Law*

1. *Vindicating Doctrine: Utility, Novelty (Not Originality), Claims, and Improvements*

Consider now the structure-individuation thesis and patent law's core features. The first and most obvious way in which patent law's conception of inventions coheres with the thesis is its utility requirement.[162] As noted above, an intellectual object is only eligible for patent protection in the U.S. if it is demonstrably a "useful" artifact, which is to say that it is a tool for performing some specified function.[163] Specifically, a patentable invention must have both *credible* or *operable* utility — or, that it is capable of doing what it says it does[164] — and *practical* utility — or, that it has a specific and substantial use.[165] The utility requirement thus reflects the most natural and defining feature of an invention identified above, and from which the structure-individuation thesis was derived: that inventions

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[162] 35 U.S.C. § 101.

[163] Note also that aesthetic or ornamental effects do not constitute uses for the purpose of satisfying patent law's utility requirement. Instead, if an inventor desires intellectual property protection over the ornamental features of an invention, they must seek *design* patent protection under 35 U.S.C. § 171 ("Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title.") *See, e.g.*, Levi Strauss & Co. v. Golden Trade, S.r.L., Nos. 92 Civ. 1667 (RPP), 90 Civ. 6291 (RPP), 90 Civ. 6292 (RPP), 1995 WL 710822 (S.D.N.Y. Dec. 1, 1995) ("since the patent in question is a utility patent, claims 5, 14, and 20 are invalid for claiming nonpatentable subject matter. The products with the random faded effects in these claims do not meet the requirements for patentable subject matter of a utility patent but are more akin to those envisioned in a design patent."

[164] The bar for credible utility is very low. The Federal Circuit has held that invalidity requires the claimed invention must be "totally incapable of achieving a useful result," Brooktree Corp.v. Advanced Micro Devices, Inc., 977 F.2d 1555, 1571 (Fed. Cir. 1992).

[165] Brenner v. Manson 383 U.S. 519 (1966) (holding that that a novel process for making a known steroid did not satisfy the utility requirement because the patent applicants did not show that the steroid served any practical function). Note that the 1817 patent law case *Lowell vs. Lewis* established that patentable inventions are also required to have *beneficial* utility, as Justice Joseph Story wrote that a patentable invention must "not be frivolous or injurious to the well-being, good policy, or sound morals of society." 15 F. Cas. 1018 (C.C.D. Mass. 1817). However, in the 1999 case *Juicy Whip, Inc. vs. Orange Bang, Inc.*, the Court of Appeals for the Federal Circuit put an end to the beneficial utility requirement, explaining that "Congress never intended that patent laws should displace the police powers of the States, meaning by that term those powers by which the health, good order, peace and general welfare of the community are promoted . . . we find no basis in section 101 to hold that inventions can be ruled unpatentable for lack of utility simply because they have the capacity to fool some members of the public." 185 F.3d 1364, 1367-68 (Fed. Cir. 1999).

are tools with some intended aims, and that they are defined by this nature. And again, since inventor-identity does not make a difference to a tool's ability to perform its intended function — to its *usefulness*, in the relevant language — inventions are wholly constituted by their structural properties.

The next feature of patent law to note is that, when one owns a patent, they own what is claimed.[166] A patent claim is a linguistic description of the invention that establishes the boundaries of the invention in question, characterizing what exactly it does and how it does so.[167] By way of example, consider the following possible patent claim:

> *A self-propelled vehicle, comprising:*
> *(a) a body carriage having rotatable wheels mounted thereunder for enabling said body carriage to roll along a surface*
> *(b) an engine mounted in said carriage for producing rotational energy, and*
> *(c) means for controllably coupling rotational energy from said engine to at least one of said wheels,*
> *whereby said carriage can be self-propelled along said surface.*

The invention owned by the patentee in this case is, simply, the abstract entity possessing these enumerated structural properties, performing the aforementioned task with these elements in the aforementioned way. This is not to suggest that it will always be easy or even possible to perfectly define what exactly some invention's structure is, or what function it performs.[168] After all, it is one thing for an invention to have some structure and another thing entirely for this structure to be explicable via language, something which is itself imprecise. This is why a number of existing patent systems — including those of the United States, United Kingdom, Germany, Ireland, Switzerland, and Japan — have what is known as the "doctrine of equivalents".[169] According to this doctrine, an invention which does not literally fall within the claim of a patent but which nonetheless is equivalent to what is claimed, in virtue of perfming "substantially the same function in substantially the same way to produce

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166 *See* Datascope Corp. v. SMEC, Inc., 879 F.2d 820 (Fed. Cir. 1989) ("it is *claims*, not commercial embodiments, that are infringed.").

167 35 U.S.C. § 112 ("[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.").

168 I return to a number of challenges raised by this task below.

169 *See, e.g.,* Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 692 (2d Cir. 1948) (describing the purpose of the doctrine of equivalents "to temper unsparing logic and prevent an infringer from stealing the benefit of the invention."); Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605 (1950) (describing the justifications of the doctrine of equivalents).

the same result," is ultimately the "same" invention as the one claimed and thereby infringes on the patent in question.[170]

The notion that inventors (unlike copyright owners) own what is claimed — the claims themselves being descriptions of the structural properties of the invention — is, I suggest, correctly tracking the deeper nature of inventions.[171] Unlike artistic works such as *A Gloomy Sunset* vs. *Impression of a Kickball*, which would both be incompletely described and inappropriately equated by the description "an orange background with a pink orb at the very center." inventions are *wholly constituted* by these structural properties. Thus, in contrast to copyright — where no such explicit claiming system exists, and where the artistic work's origin does the work of individuating it, as exemplified by the independent creation defense — patent law rightly assumes that an invention is in principle reducible to (and individuated by) its structure, even if the imprecision of language makes these properties difficult to define.[172]

Next, recall that the standard for patentability requires an invention to be novel rather than merely original.[173] In more words, it is not sufficient that the invention originated in a distinct inventor. Rather, it must be the case that no invention with identical structural properties already exists. Relatedly, we have seen that patent law — *unlike* copyright law — lacks an independent invention defense.[174] An inventor's ownership of a patent in some invention indeed *does* prevent subsequent inventors from using or selling any invention with the structural properties described therein, even if they re-invent it entirely on their own.[175] As the reader might see, these two features of patent law's structure — also two sides of the same coin — are in alignment with claim that inventions are structure- rather than inventor-individuated. By requiring novelty rather than originality, patent law recognizes that an invention is not different from that which exists simply in virtue of being the work of a distinct inventor, and instead must have a novel structure that performs either a novel function

170 *Id.*

171 *But see* Dan L. Burke & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PENN. L. REV. 1743 (2009) (exploring a shift from patent's system of "peripheral claiming" to a system of "central claiming" like copyright law in order to avoid the practical challenges raised by peripheral claiming and claim construction due to the indeterminate nature of language).

172 For an extended exploration of this difference between copyright and patent law's claiming systems, see Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHICAGO L. REV. 719 (2009).

173 35 U.S.C. § 101).

174 *See supra* note 8 and accompanying text.

175 *Id.*

or an existing function in a novel way.[176] And similarly, the lack of an independent creation defense presupposes that an independent inventor's invention really can be the very same as another's so long as it shares its structural properties, identical (or equivalent) to what the other inventor has descriptively claimed.

Finally, we saw above that the structure-individuation thesis and the non-transformability of inventions are two sides of the same coins: while inventions might be improved upon or even put to new uses (the latter which we return to below), they are still not intrinsically transformable by the hands of all inventors in the way that artistic works can always be transformed by subsequent authors. Instead, transforming an invention into something new by improving it requires making some structural modification to the invention itself, as two inventions sharing the very same structural properties simply are the same.

This nature of inventions also is reflected in existing patent law. As noted above, it is possible to obtain what are called *improvement patents* for improving upon an existing, even patented invention, so long as the improvement itself meets the patentability requirements of novelty, utility, and non-obviousness.[177] But when a subsequent inventor does obtain a patent on her improvement, she is able to utilize only the *improvement specifically* — an improvement which, without the underlying invention it improves, cannot actually be used — not the conjunction of the improvement and underlying invention.[178] The point is perhaps best illustrated by the case *Marconi Wireless Tel. Co. v. DeForest Radio Tel. & Tel. Co.*,[179] which held that a triode (or, a container having three electrodes) improved on but nonetheless infringed a prior patent on a diode (indeed, a container having two electrodes) since the triode necessarily contained two electrodes in a container. Thus, when an invention is patented by its inventor while an improvement upon it is patented by a subsequent inventor, neither of the two are permitted to utilize the entirety of the improved invention, at least without authorization from the other.[180] And this constitutes another instance of patent law implicitly assuming the structure-individuation thesis, since the improved invention — in part constituted by

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176 *But see* Nicholson Price, *The Cost of Novelty* 120 COLUM. L. REV. 769 (2020) (challenging the novelty standard in patent law for solely promoting "differentiating innovation," or inventions that are "new for the sake of new," while insufficiently promoting "deepening innovation" that tells us more about existing technology).

177 Mark Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989 (1996) (analyzing the way that improvement patents work and contrasting them against the way improvements are treated by copyright law).

178 Lemley, *supra* note 177 (explaining this phenomenon of "blocking patents").

179 236 F. 942 (S.D.N.Y. 1916), *aff'd*, 243 F. 560 (2d Cir. 1917).

180 Blake v. Robertson, 94 U.S. 728 (1876).

something with the very same structural properties of the original — thereby contains the very invention that the earlier inventor already owns.

2. Refining Doctrine: Rethinking Inventorship and New Uses

Notwithstanding the aforementioned alignment between existing patent doctrine and the structure-individuation thesis, there are ways in which U.S. law does elevate inventor identity that perhaps ought to be revised, if the individuation theses are getting things right. As noted above, other scholars have pointed out that patent doctrine as it stands seems to presuppose a picture of invention as the product of a sole inventor, when the reality is that it often occurs at the hands of simultaneous independent inventors at once. We saw that this is ultimately unsurprising, as inventors are driven by the challenges that current technological limitations have raised and are constrained by the laws of physics and chemistry (and the available scientific knowledge) at the moment of invention. We also noted scholars' observation that invention is not a discontinuity but rather an incremental step in an ongoing process, such that attributing inventorship to an individual for an invention that is ultimately a step in this incremental process obscures the fact that many other inventors contributed to reaching that step.

However, the structure-individuation thesis raises further questions for the ways in which patent doctrine elevates inventorship in virtue of illuminating the irrelevance of inventor identity to functionality of the invention itself. Specifically, as a matter of U.S. patent doctrine, patent applications are required to include the name of the inventor for any invention claimed in the application. Moreover, patent doctrine understands the inventor as the individual who initially conceives of the "definite and permanent idea" of the claimed invention, and they need not be the individual who thereafter reduces the idea to practice. Each individual who is identified as inventor or joint inventor of a claimed invention in an application for patent also is required to execute an oath or declaration in connection with the application. In particular, they are required to state that 1) the patent application was made or authorized to be made by them, and 2) they believe themselves to be the original or a joint original inventor of a claimed invention in the application. Thus, not only must inventorship be identified by U.S. patent doctrine but this identification must be paired with an oath, despite neither of these requirements existing with respect to authorship and the question of copyrightability.

It is not obvious what the precise theoretical basis is for U.S. requirement of naming inventorship in patent applications, especially because the requirement is not generally as stringent in other countries. For example, while the European Patent Convention (EPC) theoretically emphasizes identifying the inventor of a given invention, ince "[t]he right to a Euro-

pean patent (. . .) belong[s] to the inventor or his successor in title," in practice, the European Patent Office (EPO) never actually investigates whether the proposed inventor is the true inventor. Indeed, it is said that, "[f]or the purposes of proceedings before the [EPO], the applicant shall be deemed to be entitled to exercise the right to the European patent." In contrast, in the U.S., patents have been invalided on the basis of failing to state the true inventor or all joint inventors of the patent in the application. But if the individuation theses are correct with respect to the irrelevance of inventor identity to the nature or functionality of the invention itself, it is surprising that the requirement to name inventorship exists in U.S. patent law when no analogous stringent requirements for naming authorship exist in copyright. If anything, the fact that authorial identity is or can be a part of the artistic work itself in a way that is not the case for an invention might have caused one to expect the opposite, if these requirements are at all meant to be tracking the nature of the works and what matters to defining and distinguishing them. Thus, perhaps the individuation theses give reason for U.S. patent doctrine to abandon this emphasis on inventorship, bringing it more in line with the approach of the EPC.

Next, while the remaining core features of existing patent doctrine largely cohere with the structure-individuation thesis, it is worth returning to our earlier discussion about the phenomenon of subsequent inventors devising *new uses* for existing inventions. We considered the example of an inventor who discovers that a particular pharmaceutical drug for treating eczema turns out also to be useful for treating anemia without any structural modifications. As a matter of existing law, such inventors can obtain *new use patents* so long as the new use meets the additional patentability standard of being non-obvious.[181] Particularly in the domain of pharmaceuticals, where drug companies frequently obtain new-use patents to repurpose old drugs, new use patents constitute a significant portion of the overall patent landscape.[182] Sean Seymore explains:

> Over two-thirds of the value of worldwide patents accrues to chemical and pharmaceutical firms, and more than half accrues to a small number of large pharmaceutical firms. The cost of new drug development has led these firms to pursue drug repurposing — the quest to find new uses for

[181] *See* 35 U.S.C. § 100(b) (defining "process" in § 101 to "include[ ] a new use of a known process, machine, manufacture, composition of matter, or material"); Pericone v. Medicis Pharm. Corp., 432 F.3d 1368, 1378 (Fed. Cir. 2005) ("New uses of old products or processes are indeed patentable subject matter."); P.J. Federico, *Commentary on the New Patent Act*, 75 J. PAT. & TRADEMARK OFF. SOC'Y 161, 177 (1993) (explaining that a method claiming a new use for a known device, product, or composition of matter may be patentable if the conditions of patentability are satisfied).

[182] Sean B. Seymore, *Patenting New Uses for Old Inventions*, 73 VANDERBILT L. REV. 479 (2020).

> old drugs. Since older drugs have already been tested in humans, much is known about their pharmacology and toxicity. The U.S. Food and Drug Administration ("FDA") approves drugs that have been shown to be safe and effective for the manufacturer's intended use; however, it also permits doctors to prescribe approved drugs for "off-label" indications. This allows repurposed drugs to bypass much clinical testing and reach the market more cheaply, more quickly, and with less risk than new drug candidates. Revenues generated from repurposed drugs can be substantial — eclipsing those from the drug's original indication and those from new drugs developed from scratch. Repurposed drugs can also provide remarkable health outcomes for neglected diseases or for patients who otherwise have limited treatment options.[183]

From the perspective of the structure-individuation thesis, the phenomenon of new use patents might give the reader pause. On the one hand, devising a new use constitutes devising a new *function* for an existing *structure,* such that — if inventions are tools — then is there is an important sense in which a new invention has been made.[184] On the other hand, though, a novel structure has not been constructed. If inventions just are their structures, then what exactly are we to say about the inventive structures that ultimately can perform multiple functions, including ones not initially foreseen by their inventor? One possible view is that such inventive structures are *multiple inventions* co-inhabiting in one structure, depending on the number of functions the structure could ultimately perform. In other words, inventions are not *just* structure-individuated, but rather *structure-and-function* individuated, a modification of the original thesis of this Article (but nonetheless still importantly different from author-individuation, for reasons discussed above).[185] On the other hand, an alternative view is that new uses do not constitute genuinely distinct inventions — despite heretofore being *undiscovered* functions — in virtue of the existing structures having had the capacity to perform those functions all along.

In my view, adjudicating between these metaphysical conceptions of new uses likely is not of theoretical import for patent law. Specifically, I am skeptical that any plausible *normative* theory of patent law's aims — from incentivizing useful innovation to recognizing rights grounded in the work of invention — would give good reason for treating the invention of new, useful structures versus new uses for existing structures in meaningfully different ways. In other words, despite their *prima facie* tension with the structure-individuation thesis and any conceptual questions about inventions they might, I suspect that the availability of new use patents is *normatively* getting things right *regardless* of how those questions ulti-

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183 *Id.* at 483.

184 *Id.*

185 *Infra* Part II.B.iii.

mately answered. This discussion of new use patents thus constitutes another reminder of how the individuation theses don't *alone* tell us everything; rather, they must be paired with independent normative theories of the legal systems' aims, in order for us to determine how intellectual property law should look.

D. The Copyright/Patent Division & Its Complications

Finally, consider now more general possible implications from the individuation theses for the copyright/patent division of labor itself. Specifically, this Section outlines possible lessons from the individuation theses for copyrightable and patentable subject matter, and then addresses the questions they raise for works with expressive and functional overlap.

1. Copyrightable vs. Patentable Subject Matter

In Part I, we saw that existing copyright and patent doctrine does not provide — at least, not in any easily gleaned or unified form — an analysis of artistic works and inventions, their necessary features, or their defining differences.[186] Instead, what we see is an ever-growing list of copyrightable and patentable subject matter in both statutes and caselaw, one which spans far beyond the paradigm cases of artistic works and inventions that have been the primary focus of this Article's inquiry. Under present law, patents are being provided not just for things like pharmaceutical drugs and machinery but also ones like toys,[187] games,[188] and recipes,[189]; and copyright extends not merely to artworks, literary works, and musical works but also textbooks,[190] arrangements of data,[191] and software.[192] But the further away we get from the paradigm cases of artistic works and inventions, the less compelling the defended individuation theses become. In other words, even if it is true that pharmaceuticals and machines are structure-individuated, is the same true of toys and games? (Or are toys and games simply cases of expressive and functional overlap, discussed in the following Section?). Even more compellingly, though author-individuation is persuasive when we consider undoubtedly expressive works like poems and paintings, it is — in my view — much less clear that two dis-

186 *See* Part I *supra*.
187 *See, e.g.*, Magnetically Coupled Toy Assembly, U.S. Patent No. US3660926A (issued May 9, 1972).
188 *See, e.g.*, Board Game Apparatus, U.S. Patent No. US2026082A (issued Dec. 31, 1935)
189 *See, e.g.*, Process for Preparing Low Calorie French Fry Product, U.S. Patent No. US4542030A (issued Sept. 17, 1985).
190 *See supra* note 31.
191 *Id.*
192 *See supra* note 32.

tinct "authors" could not have made very same software, compilation of data, or work of scientific scholarship, all of which currently fall in copyright's domain.

This existing state of copyrightable and patentable subject matter, and its seemingly imperfect fit with the individuation theses, could lead us to a number of conclusions. Of course, one possible conclusion is rejecting this Article's arguments: or, that the existence of presently copyrightable/patentable subject matter that do not fit nicely and cleanly into this picture entails that we should not accept the individuation these *even with respect* to the paradigm cases of expressive works and inventions. But I find this conclusion to be implausible. Instead, considering (what I take to be) the persuasive force of the individuation theses at least with respect to the sorts of paradigmatic works considered (and even if, again, there might be disagreement regarding what all falls within that paradigm), it seems far more plausible to think that the current scopes of copyright and patent law include but go beyond the kinds of works the individuation theses are most plausible for.

Thus, a second possible view is that the individuation theses should only be understood as making sense of the *paradigm cases* of expressive works and inventions, but that copyright and patent law nonetheless *rightly* deviate from this paradigm. In other words, the story would go, copyrights and patents are perhaps most naturally associated with paradigmatically expressive or functional objects — ones that are most plausibly understood in accordance with the individuation theses — but the law has had good reason to embrace a more pluralistic conception of the domain of intellectual property law. If this is so, then such pluralism should also be explicitly articulated, analyzed, and defended within the context of one's endorsed normative theory of intellectual property; for, in light of the prior Part's illustration that the individuation theses yield implications for different theories *at least* with respect to copyright and patent law's paradigmatic domains, it might also turn out that intellectual objects within the domain of copyright and patent but outside the paradigmatic scope of this Article's thesis should be regarded, from the eyes of the law, in importantly different ways than those within the paradigm.

A final possible conclusion is more radical. It is that author-individuation versus structure-individuation are not solely accounts of the paradigm cases of artistic works and inventions but, in fact, of the appropriate scope of copyright and patent law. To put it differently, perhaps the individuation theses should be understood as *reverse-engineered tests* for which intellectual objects are genuinely artistic works or inventions, and which should thereby be protectable under copyright or patent law respectively. After all, this story would go, the arguments of this Article have established that it is *because* of the nature of expression — that where it comes

from makes a difference to what it is — that artistic works are author-individuated, as well as that the nature of non-expressive functionality does not yield the same. And if it is true that copyright law should aim to protect principally expressive works while patent law should not, then it would seem to follow that if some work is not author-individuated, it is not expressive and should not be within copyright's domain. Thus, consider the case of software, which holds a long-debated position within copyright law's domain.[193] One might argue that if software is not author-individuated, it is not expressive (or at least not *principally* expressive), and that it thus should not constitute copyrightable subject matter. In future work, I hope to explore this argument and the implications of the individuation theses for rights in software. But for now, this discussion illuminates how these theses — once combined with further normative arguments on intellectual property law's aims — could yield significant prescriptions regarding the domains of intellectual property law.

2. Expressive-Functional Overlap

A final, related question that the individuation theses raise — and which especially emerges from the prior discussion — is that of works *both* expressive and functional. The most obvious examples of such works include fashion and industrial designs, which often contain elements with both aesthetic and functional properties: for instance, a dress's bold zipper detail might both decorate and fasten it, or a car's sleek hood might be both stylish and aerodynamic.[194] Consider also the art of furniture making, or artisanal work more broadly, wherein the fruit of the artisan is something useful but also expressive of their distinctive artistry. Indeed, though the starting point of the individuation theses was a basic picture of artistic works' and inventions' defining properties and paradigm cases, upon stepping back, we can see that there is nothing conceptually preventing a certain creative act from being both authorship and invention, or from its resulting fruit being both functional and expressive. And, indeed, reasonable parties might disagree wildly about where the lines around this category of overlap ought to be drawn.

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193 Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form*, DUKE L.J. 663 (1984); Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs,* 41 STAN. L. REV. 1045, 1066-69 (1989); Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU*?, 106 HARV. L. REV. 977 (1993); Pamela Samuelson, *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308 (1994).

194 17 U.S.C. § 101 (defining "useful article" as an article "having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information").

As noted in Part I, intellectual property law already grapples with the question of how to understand or treat works with both expressive and functional properties. For example, as a matter of existing law, "Useful Articles" are defined by copyright law's useful articles doctrine as such, which roughly says that the copyrightability of such articles (and their elements) turns on the question of whether the expressive versus functional elements are physically or conceptually *separable* from each other.[195] As the reader might expect, the question of what it takes for such an article's expressive elements to be "conceptually separable" from its functional ones itself also has proven to be difficult to satisfyingly answer.[196] But in light of the individuation theses — and the particular claim that a defining difference between expressive and functional objects is the way in which their individuated — we are left with the further question of how works with expressive and functional overlap are individuated as well.

A natural response to this question is that, at least in cases where the expressive and functional aspects of the work really are separable, such works in fact encode *two* abstract intellectual objects simultaneously: an artistic work on the one hand, and an invention on the other, each individuated in accordance with the present Article's theses. Under this picture, then, the useful articles doctrine would seem to have correctly glommed onto the reality of things, then allowing the separable artistic work to fall within copyright law's domain while leaving aside the functional invention for evaluation for the requirements of patentability. However, this still leaves us with the more difficult question of what to say about useful articles where the expressive and functional elements are inextricably intertwined. After all, in such cases, it is impossible to break apart the work into distinct and differently individuated abstracta.

My own inclination is to say of such works that, if they really are inseparably imbued with their creators' expression, then they are author-individuated regardless of the functionality they also have. However, again, this conceptual point alone does *not* entail that all such works should be eligible for copyright protection. Instead, as mentioned in the prior Section, it might be that the right normative theory of copyright law entails that there are overriding reasons — either consequentialist or deontic in nature — for limiting copyright protection to works that are wholly (or at least separably) expressive but not functional, or ones where the

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[195] *Id.* (stating that copyright law only protects the pictorial, graphic, or sculptural features of a useful article to the extent that these features "can be identified separately from, and are capable of existing independently of, the *utilitarian* aspects of the article").

[196] For a summary of these challenges an attempt at resolving them, see Mala Chatterjee, Note, *Conceptual Separability as Conceivability: A Philosophical Analysis of the Useful Articles Doctrine*, 93 N.Y.U. L. Rev. 558, 579 (2018).

expressiveness of the work is (something like) more *central* to its nature or purpose than its functionality; and the individuation theses are entirely agnostic as to that question. More generally, the reflection of this Section again reminds us that, although I have defended a basic picture of copyright and patent law's central subject matter, we still cannot determine the design of our legal systems in the absence of a normative theory of these systems' aims. Still, as noted previously, the answer to the question of how legal systems should look is a function of *both* the normative theory that grounds them *and* the nature of the entities and events that they govern. And thus, upon being paired with such a theory, the individuation theses — heretofore missing from our theoretical picture — undoubtedly will help us in getting the answer right.

CONCLUSION

In motivating the individuation theses, this Article began with the paradigmatic subject matters of copyright and patent law in order to construct a theory of what differentiates expressive and functional works. But this methodology — and the individuation theses themselves — surface a number of further questions about the practices and fruits of both authorship and invention. Moreover, in focusing specifically on the task of vindicating the copyright/patent division or labor, this Article has not addressed all the intellectual artifacts and objects falling *outside* the subject matter of either, nor has it grappled thoroughly with the skeptical challenge flagged towards the end of Part II. Thus, this Article will conclude by briefly canvas some these many surfaced further questions, to be explored in future work.

First, reacting to the author-individuation thesis, one might observe that authorship often does not take the form of an *individual* acting alone, imbuing her work with only her expression. Since inventions are wholly individuated by their structure, two inventions with identical structures are thereby the same invention regardless of whether they were invented — not merely by different particular inventors — but different types of inventors, such as a single individual versus a collective, corporation, or artificial (mechanical) inventor. But what are we to say about collective, corporate, or artificial authorship? Even if two structurally identical works created by distinct individual authors would be importantly distinct — in virtue of containing each authors' expression — what about ones produced at the hands of distinct "authors" where neither is an individual at all? This question could turn out to be practically pressing for copyright law, as overwhelming number of works enjoying copyright protection today — including many of those with the most economic value — are not produced by an individual acting in isolation but by collections, corporations, or even (if not now, then perhaps soon) artificial intelligences. In-

deed, this state of contemporary creativity likely has further motivated recent intellectual property scholars to disparage "romanticism" about authorship, understood as conception of authorial activity as something that specifically a solitary genius acting in isolation engages in.[197] Thus, such romanticism-skeptics might again raise the question of whether my conception of authorship is also unduly romantic.

An easy response to this challenge is to say that, even as authors themselves become more complex, author-individuation straightforwardly remains. In the case of collective or corporate authorship, the response would go, every individual involved in the act of authorship is an essential contributor of expressive content, such that a work created by even a partially different collective or corporation would still be importantly distinct. And in the case of artificial authorship — if it is genuine authorship at all — perhaps distinct artificial authors are no different than human ones. However, it seems to me that the force of the intuition underlying author-individuation thesis is weaker when we imagine structurally identical works produced by (say) Disney vs. 21st Century Fox, or AI # 1 vs. A1 # 2, than when we imagine (say) Warhol vs. Pettibone or Cervantes vs. Menard. And my own view is that this weakening of the intuition is explained by unanswered questions surrounding what it takes for something to be an *expressive being* in the first place, capable of creating a work with genuine expressive rather than perhaps only "pseudo-expressive" content, and which is raised (for different reasons) by collective, corporate, and artificial authorship. These questions thus are also to be explored in future work on the nature of authorship, along with how — if any of these sorts of authorship do result only in "pseudo-expressive" works — copyright law should treat them.

Next, consider further questions raised by the structure-individuation thesis on the functional works. First, how are we to individuate *compilations of inventions,* inventions that constitute functional combinations of others? A straightforward example of such a compilation is the Swiss Army Knife,[198] which conveniently combines the more fundamental inventions of (e.g.) a knife, a nail file, a screwdriver, and scissors. In this

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[197] For scholarship on "romantic" conceptions of authorship and their influence on intellectual property law, see MARK ROSE, AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT (1993); Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of "Authorship,"* 1991 DUKE L.J. 455 (1991); Martha Woodmansee, *The Genius and Copyright: Economic and Legal Conditions of the Emergence of 'Author,'* 17 EIGHTEENTH-CENTURY STUD. 425 (1984); James D.A. Boyle, *The Search for an Author: Shakespeare and the Framers*, 37 AM. U.L. REV. 625 (1988); Amy Adler, *What's Left? Hate Speech, Pornography and the Problem for Artistic Expression*, 84 CAL. L. REV. 1499 (1996); Amy Adler, *Against Moral Rights*, 97 CAL. L. REV. 263 (2009).

[198] Thanks to Jeanne Fromer for suggesting this example.

case, it is easy to grant that the Swiss Army Knife really did constitute a new and distinct invention; but reflecting on it brings to light the fact that many other cases may not be so easy, such that we might wonder whether distinct, individuated inventions can always be proliferated by simply combining two or more pre-existing others.

As a matter of U.S. patent law, this question is in part addressed by the doctrine of "non-obviousness."[199] It is not the case that an inventor can obtain a patent on an "invention" that is merely a combination of two or more existing inventions *unless* this it satisfies the heightened "non-obviousness" requirement, which — under the test articulated in *KSR Int'l Co. v. Teleflex Inc.*,[200] — would require that the combination in question was not "obvious to try" for a person having ordinary skill in the art. One way of understanding this standard might be that an invention which is simply an obvious combination of preexisting inventions is not really something distinct in its own right. But the question remains: is "non-obviousness" really a defining property of inventions as a category and the question of how they are individuated, or is it instead merely a matter of policy, e.g., the product of patent law's purported aim of incentivizing genuinely *valuable* inventions in combination with the assumption that something obvious is simply not (as) valuable?

Next (and relatedly), even if we accept that inventions just *are* what they *do*, the question of what precisely constitutes the structure or function of an invention itself poses challenges. This is because both structure and function can be specified at different levels of *generality* or with more or less *fineness of grain.*[201] Put differently, we might understand the form and function of an invention in many ways, ranging from narrow to broad in their level of specificity, which is to say that there is never one unique or obviously "correct" way of understanding or characterizing them. Indeed, this malleability of characterization is concretely reflected in the ways in which inventors routinely make *strategic* choices in how narrowly or broadly to write their patent claims. Broader claims (which may reflect more course-grained or general conceptions of the invention) are known to be stronger but less likely to be deemed valid (in virtue of being more likely to be preempted by the prior art), whereas narrower claims (perhaps reflecting a more fine-grained conception of the invention) are weaker but

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[199] 35 U.S.C. § 103 (providing that a patentable invention must not have been obvious to a "person having ordinary skill in the art" in view of the appropriate prior art).

[200] 550 U.S. § 398 (2007).

[201] For a closer examination of the challenge posed by functionality and levels of abstraction, see Mala Chatterjee, Note, *Conceptual Separability as Conceivability: A Philosophical Analysis of the Useful Articles Doctrine*, 93 N.Y.U. L. Rev. 558, 579 (2018).

more likely to be validly enforceable.[202] One possible way to understand this malleability is that — although something is not an invention unless it is a structure-individuated tool — for every particular invention, there is a *set* of permissible conceptions of its structure that range from course- to fine-grained in specificity, rather than some fact of the matter as to *which one* rightly characterizes the invention. From this view, it would follow that the question of how exactly a patent-seeking inventor should write their claim is *rightfully* a question of pragmatic considerations. In any case, though exploring this possible view is also set aside for now, reflecting on it brings to light the fact that — while the structure-individuation thesis tells us something important about the nature of inventions, as well as how they defer from artistic works — it still does not tell us the whole story.

As a final observation, note that there are many intellectual artifacts and objects not addressed by this discussion: all those *beyond* either copyright and patent law. Among these — as noted in Part I — are "abstract ideas" like mathematical proofs, algorithms, and philosophical arguments, and even data itself (not arrangements of data, which we have seen presently enjoy copyright).[203] I flag a few examples of this wide-ranging and ever-evolving class of objects only to remind us that copyrightable and patentable subject matter is far from exhaustive of all the intellectual artifacts existing within and beyond the structures of legal systems, and which likely raise philosophical questions of their own that are untouched by present analysis. Similarly, consider also the information objects at issue in other legal systems, including "brands" at issue in trademark law, "secrets" of trade secret law, "public personas" of rights of publicity, "private personas" at issue with privacy laws, and "reputations" at stake with defamation law. All of these raise further questions and puzzles surrounding their individuation and its implications for law, and I intend to explore them in future work.

Finally, it is worth briefly returning to a version of the skeptical challenge flagged at the end of Part II: that this Article is misguided for seemingly presupposing some reality or coherence behind our copyright and patent systems, or alternatively for suggesting that the categories "artistic works" and "inventions" glom onto any real or natural joints in the world.[204] I return to this challenge in closing so that I may reiterate how

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[202] Lemley, *supra* note 177 at 14 (discussing the costs and benefits of wide vs. narrow claiming).

[203] *See* Part I *supra* (discussing the limitations on copyright and patent law's subject matter).

[204] For an exploration and defense of this skeptical challenge in the context of copyright law, see Shyamkrishna Balganesh, *The Immanent Rationality of Copyright Law*, 155 MICHIGAN L. REV. 1047 (2017) (reviewing Abraham Drassinower's *What's Wrong with Copying*?)

seriously I take it, even if I do not fully grapple with it here. But it seems to me that first step in following that skeptical instinct setting out to find the best available version of a vindicatory story, which is what this Article attempts to do. The individuation theses can start to make coherent — and, I think, plausible — sense of the core rules and intuitions underpinning intellectual property's bifurcation, although I have noted a number of places where the theory has with ample room for skeptical or pluralistic pushback. But if the skeptic steps away from reading this Article with the view that my attempt to vindicate any aspect of these categories or legal systems has not succeeded, then the real takeaway for them should be an invitation to reconsider the legal systems themselves.