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THE COPYRIGHT WORK OF AUTHORSHIP

Thomas Hemnes[*]

The "work of authorship" lies at the heart of the Copyright Act of 1976. It is what copyright protects. Central though the concept is, the Act never defines what a work of authorship might be. According to the Act, it can be perceived in tangible fixations, but is distinct from the fixations. The Act also provides examples: writings, drawings, computer programs, but never describes how these might be distinguished from their fixations. Unlike the Patent Act, where "metes and bounds" of a patentable invention are defined by a patent's claims, the Copyright Act provides no guidance as to what the "metes and bounds" of a copyright work of authorship might be.

Most copyright practitioners and commentators are so inured to the concept that they never pause to consider what the "work of authorship" is, and what it means to say that it exists independently of its fixations. This paper addresses these questions. It will consider when and how the copyright concept of an incorporeal "work of authorship" (which for brevity I will call the copyright Work) arose in federal US law. The paper will compare the concept to Platonic forms, outline the forces that supported its creation, and conclude that the concept is a manifestation of cultural and technological developments in the Nineteenth and Twentieth Centuries that required the range of copyright infringement to expand. The paper will then address the question of how the copyright Work might be defined, concluding that it is not distinct from its fixations, but is instead a set of fixations, defined by the rules of copyright infringement. Building on this definition, the paper then considers whether cultural and technological developments in the current Century, including social media, streaming, open-source licensing, and, most recently, generative artificial intelligence, will shrink the range of copyright infringement, and as a result, diminish the size of the set comprising the copyright Work. Finally, the paper will extrapolate from these copyright developments to suggest some more general conclusions about the nature of law as something that cannot be separated from a particular culture, technology, and time.

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I. THE PHILOSOPHICAL PROBLEM

To anyone with any background in philosophy, the Copyright Act of 1976 has the look of a child playing with a loaded philosophical pistol. Waving the pistol around, the Act blithely asserts that "copyright protection" "subsists" in "original works of authorship" "fixed" in "any tangible medium of expression" from which they can be "perceived, reproduced or otherwise communicated."[1] Thus, the Act posits that there are intangible things called Works that can be perceived in tangible things called media of expression to which the Works are "fixed." Transferring rights in the tangible medium does not transfer rights in the intangible Work, which nevertheless comes along for the ride by reason of its "fixation" in the tangible media. The Work, it seems, is an intangible thing that is nevertheless stuck to tangible things and cannot exist without them. It is created by an author and is, so to speak, the author's captive for the period of time defined in the Act, after which it enters the Public Domain, a kind of heavenly space occupied by emancipated Works, where they live happily ever after.[2]

Whoa! Didn't we see this somewhere else? The philosophical parent in us wants to say, "Watch out! If you're not careful you can hurt somebody with that thing!" From Plato, we have the allegory of the Cave:[3] prisoners, trapped in a cave, see nothing but shadows and echoes cast on or reflected from the cave wall. The shadows and echoes might be the Copyright Act's fixations of the Works.[4] The Works are the eternal Forms that shape and inform the shadows and echoes, but that exist separately from their tangible embodiments.[5]

But there is a difference. The poor souls trapped in Plato's cave didn't create the Forms whose shadows and echoes they see and hear; they are instead the struggling mortals trying to discern the pre-

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[1] 17 U.S.C. § 102(a).

[2] *See id.* at §§ 302–05.

[3] *See* PLATO, REPUBLIC VII 514a, 2–517a, 7 (Benjamin Jowett trans., First Ave. Ed. 2015) (375 B.C.).

[4] To avoid confusion, and following Section 202 of the Copyright Act of 1976, 17 U.S.C. § 202, I will refer to the fixation of a work in a tangible medium as an "embodiment." I will refer to works that have been fixed in a tangible medium for purposes of the 1976 Act as "copyright Works," or simply "Works."

[5] This theory of Works existing separately from their embodiments is quite explicit in the Copyright Act, where, for example, something that is "pictorial, sculptural or graphic" qualifies as a Work only if it is a "feature" that is "capable of existing independently of" the utilitarian "aspects." 17 U.S.C. § 101 (definition of "pictorial, graphic and sculptural works").

existing, eternal Forms from what they dimly see and hear. The Copyright Act's authors create the Works—their Forms—and then project them onto whatever tangible medium—cave wall, paper, cellulose, digital file—that they choose. How wondrous! In copyright, authors are Prospero, and their pens are Ariel: authors create Works, which spring into eternal life. This is Plato, but with a democratic twist. Works are what we want them to be, things that we make. They are not hovering above our heads, but the product of our imaginations. Like the Platonic Forms, they are not confined to particular embodiments, but exist independently of their embodiments. How very marvelous. In copyright, we are the gods, and the eternal Forms are our creations.

And then comes Aristotle, skeptical as always of Platonic poetry,[6] asserting that all things have both form and substrate (i.e., what they are versus what they are made of), but that form cannot exist independently of substrate, nor substrate independently of form.[7] So also the existence of a copyrighted Work depends on the continued existence of at least one copy of a tangible medium through which it is expressed and through which it can be perceived. If all copies are lost, then poof! The copyrighted Work no longer exists. The copyright Work seems to hover between Plato and Aristotle: it exists independently of its fixations, but cannot exist without at least one fixation, and certainly did not exist until its first fixation.[8]

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[6] *See* ARISTOTLE, METAPHYSICS bk. I, ch. 9, at 991a (John H. McMahon trans., Dover Publ'ns 2018) (350 B.C.) ("But, further, all other things cannot come from the Forms in any of the usual senses of 'from.' And to say that they are patterns and the other things share in them is to use empty words and poetical metaphors . . . . And anything can either be, or become, like another without being copied from it . . . .").

[7] *See id.* bk. VII, at 1033b ("Is there, then, a sphere apart from the individual spheres or a house apart from the bricks? Rather we may say that no 'this' would ever have been coming to be, if this had been so, but that the 'form' means the 'such', and is not a 'this'—a definite thing . . . . Obviously, then, the cause which consists of the Forms (taken in the sense in which some maintain the existence of the Forms, i.e., if they are something apart from the individuals) is useless . . . and the Forms need not, for this reason at least, be self-subsistent substances."). To put Aristotle into plainer English: everything (a bronze sphere or a house, for example) is made of something (bronze or bricks), and nothing (the house or the bronze sphere) exists independently of what it is made of (the bronze or bricks).

[8] The Copyright Act thus requires us to distinguish "works of authorship" from copyright "Works." It is certainly fair to say that the *Iliad* and *Odyssey* existed as works for authorship when the ancient Greeks (let's call them Homer) recited them from memory, but they didn't become copyright Works until they were written down. Thus, copyright Works are a subset of all works

II. HOW THE COPYRIGHT WORK EVOLVED[9]

The Copyright Act of 1790 gives no intimation of such philosophical pretense. Its feet are firmly on the ground, protecting maps, charts and books.[10] Period. No funny business there—these are things you can hold in your hand, not some airy-fairy disembodied "work" hanging from the scaffolding of the Act like some Calder mobile casting its shifting Platonic shadows on the wall behind.[11] Its English precursor, the 1710 Statute of Anne, was still more earth-bound, granting to authors the sole right to "print" their "books."[12] In this Eighteenth Century environment, translations and abridgements were not infringing; to the contrary, they were laudable improvements on the original, to be encouraged by the courts.[13]

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of authorship. I will attempt to refine our definition of the set comprising the copyright Work later in this article.

[9] For a different perspective on copyright history, one might consult the diatribe against corporate ownership of copyright in DAVID BELLOS & ALEXANDRE MONTAGU, WHO OWNS THIS SENTENCE (W.H. Norton 2024) [hereinafter BELLOS & MONTAGU].

[10] *See* Copyright Act of 1790, Pub. L. No. 1-15, 1 Stat. 124.

[11] It must be acknowledged that, although the Copyright Act of 1790 did not refer to a copyright "work," four colonial copyright statutes do protect "works." Connecticut and Georgia secured to authors "the profits that may arise from the sale of [their] works" and Massachusetts and New Hampshire protected "all books, treatises, and other literary works." THORVALD SOLBERG, LIBRARY OF CONGRESS COPYRIGHT OFFICE, COPYRIGHT ENACTMENTS 1783-1900, 9, 12, 16, 25 (1900). The Massachusetts and New Hampshire statutes thus lump "literary works" with physical objects such as books and treatises without postulating the inchoate Work of the 1976 Statute. Whether the "works" whose profits were protected in Connecticut and Georgia were understood as something separate from their embodiments is speculative, but it seems reasonable to infer that the "sale" of the works referenced the sale of printed copies. The history of colonial copyright laws, which arose to protect against "piracy," and the "books" and "writings" of luminaries, such as Daniel Webster, strongly supports this inference. *See* William Patry, *Copyright Law and Practice*, ch.1 (2000), available at https://digital-law-online.info/patry/patry3.html.

[12] Statute of Anne 1710, 8 Ann. c. 21 (Gr. Brit.).

[13] *See* B. KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT 9–12 (1967). Bellos and Montagu do not associate the Statute of Anne with the classical ethic, but they are completely in agreement with Kaplan as to what the classical view was: "Imitation was not just a method, but a criterion of artistic worth from the dawn of literature in the West until the modern period." BELLOS & MONTAGU, *supra* note 9, at 27. It is unfortunate that they omit to recognize Kaplan's seminal work, published some sixty years previously.

The 1790 Act and the Statute of Anne reflected the "classical" ethic, which extended well back into the Elizabethan era. Creativity consisted of faithful adherence to classical norms of aesthetic that had been handed down from Aristotle and before.[14] Copying was not something bad; it was something to be admired when done well, like faithfully playing a musical score.[15] I myself was introduced to this tradition while a grad student by the distinguished poet J.V. Cunningham, who taught that Shakespeare relied on the Aristotelian principles of tragedy and comedy: tragedy is a mistake of consequence by great people with inevitable consequence, resolved when it ends in deaths, evoking pity and fear. Comedy is a mistake by littler people that when resolved ends in marriages. And Shakespeare copied liberally from prior authors. *King Lear* combines *True Chronicle History of King Leir and His Three Daughters* with Sidney's *The Countess of Pembroke's Arcadia*; *Macbeth* rests on the story of Macbeth in Holinshed's *Chronicles*; and so on. How diminished our literature would be if Holinshed could have sued Shakespeare for plagiarism!

The Copyright Act was substantially rewritten in 1831. The headline changes were to extend the initial term of copyright from fourteen years in the 1790 Act to twenty-eight years, and to add "musical compositions" to the list of things protected.[16] For our purposes, though, other, more subtle changes are the more interesting. The 1831 Act commences reasonably enough, giving the author of "any book . . . map [or] chart . . . the sole right and liberty of printing, reprinting, publishing and vending such book . . . map [or] chart."[17] Ok. I think I understand what we're talking about here; those are all tangible objects, and it is pretty damned obvious if somebody else prints, reprints, publishes or vends the same thing. But having gotten off on a good, solid footing, the 1831 Act extends the same right to "musical compositions," "designs" and "works," even including those that haven't been "printed or published."[18]

The word "work," missing altogether from the 1790 Act, first enters the 1831 Act surreptitiously as a verb in Section 1, for the

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[14] *See* BELLOS & MONTAGU, *supra* note 9, at 57 ("Until the Eighteenth Century it was held that all ideas and products of the mind came not from mere mortals but from elsewhere.").

[15] *See* KAPLAN, *supra* note 13, at 23–24.

[16] Copyright Act of 1831, ch. 16, 4 Stat. 436 (amended 1870).

[17] *Id.*

[18] One assumes that the "designs" and "compositions" had to be set down somewhere, lest it protect things in composers' heads, although the 1831 Act omits any mention of a tangible medium of expression or the like.

purpose of identifying the persons protected,[19] but then migrates in Section 2 to identify, collectively, the things protected against copying.[20] This departure from the concrete is further refined by the extension of protection to encompass not only copying or printing whole copies, but also parts of the whole.[21] And, finally, the 1831 Act extends "the sole right and liberty of printing, reprinting, publishing, and vending" to an author's "book . . . map, chart, musical composition, print, cut, or engraving, in whole or in part."[22] Teetering at the brink of protection for incorporeal abstractions, the 1831 Act attempts to put a foot on the ground in Section 4, which provides:

> [N]o person shall be entitled to the benefit of this act, unless he shall, before publication, deposit a printed copy of the title of such book, or books, map, chart, musical composition, print, cut, or engraving, in the clerk's office of the district court of the district wherein the author or proprietor shall reside,

followed by deposit of a full copy within three months of publication.[23]

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[19] "[W]ho shall invent, design, etch, engrave, work, or cause to be engraved, etched, or worked from his own design, any print or engraving." Copyright Act, 4 Stat. at 436.

[20] "[I]f, at the expiration of the aforesaid term of years, such author, inventor, designer, engraver, or any of them, where the work had been originally composed and made by more than one person, be still living, and a citizen or citizens of the United States, or resident therein, . . . the same exclusive right shall be continued to such author, designer, or engraver, . . . Provided, That the title of the work so secured shall be a second time recorded." *Id.* at 436-37.

[21] In allowing, for the first time, infringement by parts of the whole, the Act of 1831 stumbles into another philosophical playground: the relation between parts of a thing and the whole thing. There is a whole branch of philosophy—mereology—dedicated to the study of parts and wholes. *See, e.g.*, *Mereology*, STANFORD ENCYCLOPEDIA OF PHIL., https://plato.stanford.edu/entries/mereology/#ParParOrd (last updated Feb. 13, 2016). An exploration of what might constitute "part" of a Work is closely linked to the question of what the Work is in the first place. This inquiry is unfortunately beyond the scope of this paper.

[22] Copyright Act, 4 Stat. at 436.

[23] *Id.* at 437. We might pause to consider how the deposit of a mere title could secure copyright in an unprinted book or composition. How would one know what the contents of the book or composition are to determine whether they had been infringed? The 1831 Act assumes, without saying so, that the title identifies a book, map, chart or composition in existence and "fixed" somewhere during the interval between deposit of the title and deposit of the full work.

In 1831, the ontological departure from the Act of 1790 had begun, but was not yet complete. In 1790, the copyright universe was populated by the tangible: maps, charts and books. In the 1831 Act, copyright still protects books and engravings, but also protects "musical compositions" (not sheet music) and unprinted books, maps, and charts, as long as they have a title.[24] What are these things, and if they exist, where do they reside? One supposes that they initially inhabit the minds of their composers and authors—where else? Could Homer have claimed copyright in the *Iliad* and *Odyssey* because they had titles even though they resided only in his memory?

The Copyright Act of 1870, in its Section 86, ventures further into the ether. It declares that:

> [T]he author, inventor, designer, or proprietor of any book, map, chart, dramatic or musical composition, engraving, cut, print, or photograph or negative thereof, or of a painting, drawing, chromo, statue, statuary, and of models or designs intended to be perfected as works of the fine arts . . . shall, upon complying with the provisions of this act, have the sole liberty of printing, reprinting, publishing, completing, copying, executing, finishing and vending the same; and in the case of a dramatic composition, of publicly performing or representing it, or causing it to be performed or represented by others; and authors may reserve the right to dramatize or translate their own works.[25]

So, the subject of the Act of 1870 is not just a book, a statue, or other tangible thing that might be printed, copied or sold, but includes "models," designs," and "compositions" that might be "completed," "finished," "dramatized," "perfected," or "translated" into something else, be it tangible or intangible.[26]

Let's consider what prompted the law to depart so radically from the concrete into a spirit world of "compositions," "models" and

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[24] *See id.* at 436–37.

[25] Copyright Act of 1870, ch. 230, sec. 86, 16 Stat. 198, 212 (amended 1909).

[26] *Id.*

"designs."[27] Kaplan credits two factors.[28] One is a change in the market, especially for literary works.[29] In prior times, authors depended largely on patronage for their support. As patronage declined, the "professional man of letters" rose, expecting to be recognized and protected by the law. And their protection depended on an expanded right in the productions of their minds. A second factor was the change from the classical to romantic in literary criticism.[30] Whereas the classical tradition had valued inspired imitation of the classical norms, the romantic era exalted the original, creative genius who spun new works out of whole cloth.[31] In this environment, imitation transmuted into plagiarism and would be condemned via a corresponding expansion of rights given to the originator:

> In placing a high value on originality, the new literary criticism, I suggest, tended to justify strong protection

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[27] A commentator like Professor VerSteeg might argue that this was simply the transposition of the Roman concept of a "*res incorporales*"—an intangible right—into modern copyright law. *See, e.g.*, Russ VerSteeg, *The Roman L. Roots of Copyright*, 59 MD. L. REV. 522, 531–33 (2000). This analysis overlooks that the 1976 Act postulates a thing (i.e., the "Work") that is different from rights in the thing (i.e., the copyright). It is not controversial or problematic from an ontological perspective to say that the right exists (it's written right there in the law), but, to me it is much more interesting to speculate whether the intangible thing to which the right attaches exists. A closer analogy might be to a corporation or other legal entity that has no physical embodiment, and the considerations I've expressed here with respect to copyright "Works" could extend to things like corporations, limited liability companies, and trusts. There is a difference, though. Legal entities like corporations do not partake of the Platonic magic in which they are both manifest in tangible objects and incorporeal at the same time. A corporation is never embodied in a thing. It can own or lease a thing, but it cannot be "fixed" in anything. And it can never exist independently of law; it is nothing but a bundle of legal rights and obligations created by legislatures and courts. A copyright Work is something created independently of the law by its author(s). The copyright Work continues to exist (albeit in the public domain) even after copyright in the Work has expired, and Works of the type now covered by copyright were created for thousands of years before the advent of copyright law protecting them.

[28] *See* KAPLAN, *supra* note 13, at 22–25 (discussing a comparable evolution in the English law of copyright).

[29] *See id.*

[30] *See id.*

[31] Exaltation of original genius is a conceit that has embedded itself in intellectual property law generally, creating a misalignment between the law and the practice of invention. *See generally* JESSICA SILBEY, THE EUREKA MYTH (2015).

> of intellectual structures in some respect "new," to encourage a more suspicious search for appropriations even of the less obvious types, and to condemn these more roundly when found.[32]

The Act of 1870 was amended by the "Revised Statutes" in 1873 (with no real change in substance)[33] and then the Chace International Copyright Act of 1891, which for the first time, extended US copyright protection to foreign works.[34] This was a big change, but not pertinent to our inquiry. Further dribbling amendments were enacted year to year thereafter, eventually leading to a sufficiently confused state that a thoroughgoing revision was needed—producing the Copyright Act of 1909, under the tutelage of Thorvald Solberg, the first Register of Copyright and a dedicated advocate for the rights of authors and other copyright owners.[35] The Act of 1909 dispenses with any pretense of attaching copyright to tangible things like books, engravings or charts and instead declares, in its opening salvo, that:

> [A]ny person entitled thereto . . . shall have the exclusive right . . . to print, republish, copy and vend the copyrighted work . . . to translate the copyrighted work . . . or to make any other version thereof . . to dramatize it . . . to arrange or adapt [a musical] work . . . to complete, execute and finish [a model or design] for a work of art . . . to deliver . . . the work in public for profit . . . to perform the work publicly.[36]

And so forth—all very modern and familiar to all current copyright practitioners. As to what the "work" to which these extensive rights attach might be, the 1909 Act declares that they include "all the writings of an author," and then catalogs "classes" of works, including books, periodicals, lectures, dramatic compositions, musical compositions, maps, models or designs for works of art, reproductions of works of art, drawings of a scientific or technical character, photographs and prints and pictorial illustrations.[37]

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[32] KAPLAN, *supra* note 13, at 24.

[33] *See* 18 Stat. 113 (1874).

[34] *See* 26 Stat. 1106 (1891).

[35] I rely here on the meticulous history recounted by Thorvald Solberg, who served as Register of Copyright from 1897 to 1930. *See* Thorvald Solberg, *Copyright L. Reform*, 35 YALE L.J. 48 (1925).

[36] Copyright Act of 1909, Publ. L. No. 60-349 § 1, 35 Stat. 1075 (amended 1976).

[37] *Id.*

In the 1909 Act, the Platonic project approached completion, but there is still some confusion in the 1909 Act as to whether the "works" to which copyright applies are material objects or something else. Herewith Section 41 of the 1909 Act:

> [T]he copyright is distinct from the property in the material object copyrighted, and the sale or conveyance, by gift or otherwise, of the material object shall not of itself constitute a transfer of the copyright, nor shall the assignment of the copyright constitute a transfer of the title to the material object.[38]

Thus, Section 41 persists in attaching "copyrighted" as a verbal adjective to "material object," suggesting that copyright is an attribute of material objects, akin to, but different from, property rights in the same objects.[39] This hedge on the Platonic bet is finally rectified in the next great restating of copyright law, the Act of 1976. Here is Section 202 of the 1976 Act:

> Ownership of a copyright, or of any of the exclusive rights under a copyright, is distinct from ownership of any material object in which the work is embodied. Transfer of ownership of any material object, including the copy or phonorecord in which the work is first fixed, does not of itself convey any rights in the copyrighted work embodied in the object; nor, in the absence of an agreement, does transfer of ownership of a copyright or of any exclusive rights under a copyright convey property rights in any material object.[40]

Wow. A more full-throated expression of Platonism can hardly be imagined. The "Work," the thing to which copyright attaches, can be "embodied" in an object, but is distinct from and not to be confused with the object. Quite to the contrary, it can be manifest in any number of objects, none of which are necessarily identical to the Work. They are but the shadows cast on the wall by the copyrighted Work, i.e., the disembodied Form.

Consider for a moment how this very ancient and peculiar model became a part of copyright law. As far as I know, none of the drafters of the various iterations of U.S. copyright law were committed Platonists. Instead, the separation of a "work" from its "embodiments"

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[38] *Id.* § 41.

[39] *Id.*

[40] 17 U.S.C. § 202 (1976).

developed gradually over time as the solution to a conceptual problem: how do you give authors and other copyright proprietors rights that extend beyond literal duplication of their productions, for example, in different media? It is one thing to say, as the 1831 Act did, that copyright protects works in part and in whole;[41] it is quite another thing to say that copyright in sheet music extends to piano rolls and musical performances. How can you say with a straight face that paper sheets containing musical notation are copies of a piano roll, or of a vinyl disk, of a magnetic tape or a digital file, or vice versa, without postulating something else of which they are all merely embodiments?

To solve this riddle, the modern copyright law postulates that there is another thing—the "Work"—that is "fixed" in these physical objects but is different and separate from them. This other thing is a shapeshifter. It is sometimes visible (in sheet music); sometimes audible (when a piano roll is played); sometimes manifest (in a performance); and sometimes inchoate (a piano roll sitting in a box). But in each case, it's understood to be the same thing. We see, then, that Plato entered copyright through the back door, as a solution to the question of how things that are so different can nevertheless be copies of the same thing. Once in the door, Plato placed himself at the head of the Thanksgiving table, serving up turkey, mashed potatoes, squash, gravy, and cranberry sauce all as part of the same unitary meal, which is the Work.

III. WHAT IS THE COPYRIGHT WORK?

Which leads us back to philosophy, and more specifically, ontology. What are these "Works," and in what sense do they exist independently of their fixations? The Act of 1976 declares in Section 102 that "copyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression . . . from which they can be perceived, reproduced or otherwise communicated," and Section 202 declares that "[t]ransfer of ownership of any material object, including the copy or phonograph in which the work is first fixed, does not itself convey any right in the copyrighted work embodied in the object."[42] Ok: the transfer of the material object does not convey rights in the copyrighted Work, but that doesn't resolve the question of what the "Work" might be, nor whether and in what sense it is different from the material object in which it is "fixed" or "embodied." As we noted at the outset, without a tangible embodiment, the copyright Work goes "poof": it ceases to exist. The copyright

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[41] *See supra* note 21 and accompanying text.

[42] *Id.* §§ 102, 202.

"Work," it seems, cannot exist without an embodiment, but at the same time, it can have multiple embodiments, which can be as different from one another as a piano roll is to the memory in a computer.

The Platonic copyright Work is thus open to Aristotle's complaint about Plato's Forms. Aristotle was a very feet-on-the-ground kind of guy. For him, everything has both some kind of substrate—call it matter—and form, what Aristotle sometimes calls its essence, that provides organization and identity to the substrate. Michelangelo's *David* is made of marble, but its form is that of a man. The two—matter and essence—can be distinguished, but one never exists without the other.[43] Thus, for Aristotle, a sale of the *David* necessarily sells both the marble and the form. He would have been very uncomfortable with any suggestion that the *David*, the Work/Form, can be stripped from the statue and sold separately, apparently leaving a formless lump of marble behind, or, conversely, that the statue can be sold without selling its Work/Form, the *David*. How could this be?

Can we rescue the copyright Work from Aristotle's critique? Well, to begin with, the Copyright Act declares that rights in the Work can be sold separately from an embodiment, not that the Work can be separated from the embodiment.[44] But if we cannot separate the Work from the embodiment, doesn't that collapse rights in the Work to rights in the embodiment? To make the Copyright Act work, we still need to define what the Work is, separately from its embodiment.

In the *David*, the medium, marble, is intrinsic to the Work, making the separation very difficult.[45] Where the means of fixation is

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[43] *See* ARISTOTLE, *supra* notes 6 and 7.

[44] *See* 17 U.S.C. § 202 ("Ownership of a copyright, or any of the exclusive rights under a copyright, is distinct from ownership of any material object in which the work is embodied. Transfer of ownership of any material object, including the copy or phonorecord in which the work is first fixed, does not of itself convey any rights in the copyrighted work embodied in the object; nor, in the absence of an agreement, does transfer of ownership of a copyright or of any exclusive rights under a copyright convey property rights in any material object."). Note that Section 202 governs the transfer of "rights" in the copyrighted Work, not the transfer of the Work itself, which the section assumes continues to be "embodied" in the fixation. This suggests that the Work might not exist independently of its fixations. We will attempt to reconcile this tension in later paragraphs following.

[45] One might imagine capturing the Work/Form of the *David* by creating a plaster cast of the *David* from which copies might be made. Putting aside, for the moment, the question whether a *David* duplicate, perhaps in plastic or some other base material could be fairly considered a stand-in remotely comparable to the *David*, for other sculptures this might be virtually impossible. Consider, for example, Bernini's *Rape of Proserpina*, or *Apollo*

not intrinsic to the Work, the job is easier. Consider musical compositions. We recognize *Rhapsody in Blue* as the same composition, regardless if played by a player piano, off a CD, on the radio, or when performed live on a piano from memory, notwithstanding radically different means of fixation or lack of a fixation altogether. *Rhapsody in Blue* is a series of sounds played in a particular order with a particular rhythm, supported by a definable sequence of harmonies. This series of sounds can be represented in musical notation, or on a physical, vinyl, magnetic or digital means of recordation, but none of these fixations is a sound of any kind.

But, even if we can understand a musical composition as something audible, and therefore different from fixations that are visual, mechanical or digital, this still does not solve the question of what the musical composition Work's scope or dimensions might be.[46] It doesn't resolve, for example, whether George Harrison's "My Sweet Lord" is a copy of Ronald Mack's "He's So Fine."[47] To answer that question, we would need to define what the thing created by Mack, which is the copyright Work, would be, since Harrison's Work is similar, but not identical, to Mack's.

In this task, the challenging problem is that, unlike patent law, in which the "metes and bounds" of the protected invention are defined in a patent claim, the Copyright Act describes the "Works" it protects by category—literary works, musical works, dramatic works,

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and Daphne, in which the mythical figures are dramatically intertwined. I doubt that a cast of those masterpieces would even be possible, and in each case their compelling form is inextricably rendered in Bernini's living marble. A life-sized plastic replica might more fairly be considered a grotesque insult than a copy of Bernini's originals.

[46] Jazz improvisations are harder cases. Most begin with known compositions, often from the American Song Book, following the original melody and harmony reasonably closely for the first eight or sixteen bars, then departing quite radically, to the point where the cover could not be recognized without the introductory bars. Sometimes, as in much be-bop, the improvisation replicates only the harmonic sequence; in other cases, like Tatum, the improvisation retains much of the melody but varies its harmony. Commentators generally assume, and deplore, that the copyright protection for the un-improvised "songbook" engulfs jazz improvisations that otherwise deserve recognition as original "Works." *See, e.g.*, *Jazz Has Got Copyright Law and That Ain't Good*, 118 HARV. L. REV 1940, 1941 (2005) ("By privileging the composers of the simple underlying tunes that comprise the vocabulary of the jazz language, copyright discourages vital reinterpretation.").

[47] *See Bright Tunes Music Corp. v. Harrisongs Music Ltd.*, 420 F.Supp. 177 (S.D.N.Y. 1976).

etcetera—but leaves it to litigation to determine the contours and dimensions of each Work by asking what infringes it.[48] Rather a backward way of doing things, but that's the Copyright Act for you.[49] What this implies is that the dimensions of a copyright Work can only be known incrementally, and the full knowledge of what the Work is will never be achieved: it is always subject to further examination, from another direction or in another medium, in the context of the next litigation.

This leads to the conclusion that a copyright Work can never be known completely, but can be thought of as a set comprised of all possible embodiments that infringe the original embodiment.[50] Whether an embodiment is a copy, and therefore a member of the set, is determined by asking whether it infringes copyright in the original embodiment.

Here, the copyright Work is a potentially infinite set defined by a function, namely, the principles of copyright infringement, that extends a first embodiment to any later embodiment that would be considered an infringement.[51] Things of this kind are ubiquitous in

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[48] The pernicious capacity of copyright law to inundate the public domain was explored in depth in Jeanne C. Fromer and Mark P. McKenna, *Claiming Design*, 167 U. PA. L. REV. 123, 160-69 (2018), with particular reference to the notorious *Star Athletica* case, *Star Athletica, LLC v. Varsity Brands, Inc.*, 580 U.S. 405 (2017). I have ventured my own diagnosis of the *Star Athletica* opinion's weakness as an example of the more widespread disease of textualism in Thomas Hemnes, *Copyright and the Limits of Textualism*, 68 J. COPYRIGHT SOC'Y 483, 494–500 (2022).

[49] Reforms have been proposed in which copyright claimants could identify the portions of their Works in which the claimant asserts rights. *See, e.g.*, Daryl Lim, *Saving Substantial Similarity*, 73 FLA. L. REV. 591, 650–53 (2021). Without a substantive examination process, which Lim concedes is difficult, if not completely unrealistic in the face of some tens of millions of works per year, it is difficult not to imagine that any copyright lawyer worth her salt would find a way to claim rights in "all copyrightable authorship," leaving the question of what that might be to infringement litigation.

[50] We must, of course, accommodate the possibility that one of the future "embodiments" could be a "derivative Work" that includes new copyrightable authorship. But this is easily done by saying that the original copyrighted Work includes all possible infringing embodiments, excluding however new copyrightable authorship contained in the later embodiment (i.e., authorship that does not itself infringe the original embodiment).

[51] We might flatter ourselves that here we have reconciled Aristotle with Plato, at least in the context of copyright. Form, the copyright Work, never exists independently of its embodiments, the fixations, but a given Work can have an infinite number of embodiments.

mathematics. As examples, a parabola or a hyperbola consist of an infinite number of points that result from the application of a function. So, a copyright Work can also consist of an infinite number of embodiments defined by the principles of copyright infringement, with the original Work serving as a constant in the application of the function. A parabola, a hyperbola, or a copyright Work can never be completely known: each is infinite in extent, but each is limited by a function. This no more implies that copyright Works do not exist than the fact that a parabola is defined by $y = ax^2 + bx + c$ implies that parabolas do not exist. But, in fairness to Aristotle, the Work's dimension and contours depend on the application of the function to individual embodiments, and never exist independently of them, any more than that the points along a parabola's Y axis exist independently of points along the X axis.[52]

IV. WHAT CONSTRAINS THE INFRINGEMENT FUNCTION THAT DEFINES THE COPYRIGHT WORK?

If we are right that the copyright Work is a set of embodiments defined by the principles of copyright infringement, we might ask what, if anything, constrains or requires those principles? Are there constraints on what can be a copyright Work that are outside of the Copyright Act itself?

One possible constraint is natural law. The greatest proponent of natural law in the last century was John Rawls, whom I had the privilege to have as a professor when I was an undergraduate. The concepts of natural law had of course arisen much earlier, in the writings and thought of Aquinas, Locke, and Kant, among many others. The principles of natural law were comprehensively and convincingly applied to intellectual property by Robert Merges in *Justifying Intellectual Property*.[53]

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[52] It might be objected that what I have called the copyright "function" lacks the specificity of the functions defining a parabola or hyperbola, since copyright infringement depends on such indeterminate elements as the "ordinary observer test." *See Arnstein v. Porter*, 154 F.2d 464, 473 (2d Cir. 1946); *but see Dawson v. Hinshaw Music Inc.*, 905 F.2d 731, 734 (4th Cir. 1990) (stating that *Arnstein*'s "ordinary observer" test's "reference to 'lay listeners' may have fostered the development of a rule that has come to be stated too broadly"). However, a great many mathematical functions, notably probability theory, are also indeterminate, but nevertheless highly useful predictive and explanatory tools, whether one is playing poker or predicting the position of a quantum particle.

[53] *See* ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY (Harv. Univ. Press 2011).

So, is copyright constrained "out there" by natural law in a way that is analogous to the laws of physics? Put otherwise, is natural law a legal equivalent to the laws of nature? I think not. One of the consistent characteristics of natural law theory is its normative quality: to be just, a law should have certain characteristics. It is not that something with unjust characteristics could not be a law (and we can think of myriad examples of such laws), but that a law lacking those characteristics could not be considered just (or fair, to use Rawls' "justice as fairness"). We see this at play in Merges' concept of "proportionality" in intellectual property law.[54] I do not understand Merges to be saying that an intellectual property law that provided disproportional rewards to an author or inventor—say, by failing to recognize the concept of fair use—would cease to function as a law, as a law of gravity based on the inverse cube rather than the inverse square of the distance between two masses would not function as a law of nature. Instead, I believe he is arguing that a disproportional copyright law would not meet the goals of fair distribution of rewards and other standards for a just law.[55]

Legal positivism is another candidate. Positivism is ordinarily seen in opposition to natural law. For the positivist (and here, of course, I oversimplify), law is whatever the law giver says it is. Law for the positivist is not constrained by justice or fairness; its sole constraint is the writ of the law giver, be that the sovereign or other bodies with the ability to promulgate and enforce their edicts. In copyright, the positivist law giver could at any moment, be it 1776 in England, 1976 in the United States, or for that matter in Augustan Rome, have secured for authors any or none of the rights found in our current statute, and such a definition of rights could have been understood, enforced and followed by the inhabitants of that epoch. The positivist is a close buddy of the textualist or originalist, who feels compelled to hew to the words the law giver, typically the legislature, enacted. For the positivist then, like the natural law theorist, there are no restraints on what can be a law that are "out there" analogously to the laws of physics that are constrained by observation.

A third candidate, also closely associated with positivism, is vested interest. Bellos and Montagu are firmly in this camp. For them, intellectual property law, in general, and copyright, in particular, is

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[54] *See id.* at ch. 6.

[55] It might be argued that an extreme disproportionality in a law can either fail to work or can undermine a legal system generally. The patents issued by the English crown establishing monopolistic trading rights to the likes of the East India Company, which contributed to the American colonists' support for secession, come to mind.

designed to enable powerful interests such as the Stationers in Sixteenth and Seventeenth Century England and the entertainment industry in Twentieth and Twenty-first Century United States to enclose the commons and charge "rent" (used in the pejorative economic sense) for things that ought to be in the public domain.[56] They convincingly assert that the Statute of Anne, often touted as the first statute to protect the interest of authors in their works, in fact restored the Stationers' monopoly, which had been lost in 1695 when the English Licensing and Press Act of 1662 expired. This was achieved, we are told, through the subterfuge of protecting rights of authors "and their assignees"—namely the Stationers—combined with the proposition, unstated in the Statute but enforced in practice, that rights assigned by the author during the period of exclusivity defined by the Statute then extended in perpetuity in the hands of the assignee—namely, a member of the Stationers' Company. For Bellos and Montagu, theories of natural law used to support copyright are nothing more than a tissue of fictions that disguise the reactionary purposes that, according to them, underlie copyright and other forms of intellectual property protection.[57]

The history of copyright law suggests, however, that there may be constraints on law that are neither normative, positive, or reactionary but, so to speak, extrinsic and limiting, just as constraints on the law of gravitation—the gravitational constant, the inverse square principle—are extrinsic to and limit the range of mathematical formulae that could describe and accurately predict gravitational attraction. Consider the modern copyright conception of a "derivative Work." As we have seen, the Statute of Anne granted authors the sole right to "print" their "books." Bearing in mind that, at the time, an abridgement or translation was considered a laudable and non-infringing supplement to, and in some cases improvement on, the original "book," could the Statute of Anne nevertheless have asserted that the author also had the sole right to "print" a "translation," because it was a "copy" of the original? I suppose that such a statute could have been written by a positivist, from the Bellos/Montagu perspective would have better lined the Stationers' pockets, and, from the Merges/Kantian

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[56] BELLOS & MONTAGU, *supra* note 9, at 165 ("The principal function of [the Berne Convention's] successor treaties and organizations today is to regulate a roaring international engine of corporate rent.").

[57] With the wind in their polemical sails, Bellos and Montagu go so far as to compare statements of the Motion Picture Association of America supporting copyright education to Joseph Goebbels' "big lie." BELLOS & MONTAGU, *supra* note 9, at 273. It is one thing to say, as I have often done, that copyright goes too far; quite another to analogize it to Nazi propaganda.

perspective, would have better recognized the intrinsic value of the author's personality, but the Statute of Anne did no such thing. And if it had, it might well have been considered an intolerable deterrent to the laudable activity of translation, or, more fundamentally, could have been found incoherent in the English society of 1710, as a law written in a different language might have seemed. A translation simply was not understood to be the "same" Work and therefore could not have been a copy of the Work.[58]

It isn't so much that the Statute of Anne inadequately rewarded authors, nor that the English Parliament hadn't the power to extend copyright protection to translations and beyond, nor that the Stationers generously exempted translations from their greed; it was more that the Statute of Anne was grounded in the linguistic, conceptual, technical and social matrix of its time. The balance struck in later copyright laws, culminating in the 1976 Act, and extending the author's exclusive rights to derivative Works, would have made no sense to people living in England in 1710; it might have seemed incoherent or incomprehensible. A copyright act founded, as ours is, on the conception of a Platonic abstraction—created by a single author and encompassing and subsuming rights in innumerable later partial copies and "derivative" works, whether now existing or hereafter created—would have seemed preposterous in the Classical era, in which every work worth having was understood to be derived from its predecessors. It would have been downright unintelligible prior to the invention of the printing press, photography, and motion pictures, not to mention digitized reproductions and transformations and all the other technologies that today enable the entire menagerie of derivative works from which an author might derive profit. In short: the meaning of the word "copy" exploded in meaning from, say, 1400 to 2000.

If we push the clock still further back in time we find that in all of Western history, nothing like a copyright existed until the Statute of Anne was passed.[59] In spite of that gaping hole in intellectual

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[58] *See* BELLOS & MONTAGU, *supra* note 9, at 67 (discussing 1721 Chancery Court decision in *Burnet v. Chetwood*, holding that a translation was not the same work as the original).

[59] *See* BELLOS & MONTAGU, *supra* note 9, at 24 (noting that ancient authors such as Plato and Cicero "grumbled" about publication of their works without their consent, their society "had no conception of ownership of the contents of a literary or philosophical work."). Admittedly, there were some rough precursors to copyright prior to the Statute of Anne, such as the stationers' monopoly granted in England in 1557, *see* KAPLAN, *supra* note 13, at 3, and the Venetian grant of exclusive rights to publish Cicero's and Pliny's letters one John of Spira for five years in 1469, *see* VerSteeg, *supra* note 27,

property protection, the Greek bards we call Homer composed the Iliad and Odyssey, Sophocles and Aristophanes their plays, Plato the Dialogues, Aristotle his Metaphysics, Cicero his orations, Caesar his Gallic Wars, Phidias, Michelangelo and Bernini their sculptures, Augustine his Confessions—the list is endless.[60] And the statues of classic Greece were assiduously replicated by the Romans without the slightest concern for sculptors' or the statues' owners' rights of authorship or property, notwithstanding the Romans' keen sensitivity to property rights and their positivist willingness to enact and enforce the most extreme laws and penalties to protect them.[61] And grateful we might be, since most of the original works have survived only in "copies." It would seem that for several thousand years, copyright was not necessary for literary and artistic creation of the highest order.[62]

The decisive factor pushing in favor of some form of copyright protection was not fairness (natural law) or sovereign (positivist) fiat, but the invention of the printing press by Guttenberg in 1436.[63] Caxton founded a printing press in England not long after, in 1476.[64] The press was, quite simply, a copying machine, and the first one at that.

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at 525, but they followed, not preceded, the invention of the printing press, to which Kaplan and VerSteeg trace the origins of copyright law. *See* KAPLAN, *supra* note 13, at 2–9; *see also* VerSteeg, *supra* note 27, at 524–27. Further back, VerSteeg's notable scholarship uncovered no copyright in Roman law. *See* VerSteeg, *supra* note 27. We also know that in the Greco-Roman world, such works as statues were assiduously copied, apparently without any record of legal objection from their creators. *See, e.g.*, M. BEARD, HOW WE LOOK 87 (Mary Beard Publications Limited, 2018) ("[The Aphrodite at Knidos of Praxiteles] was celebrated in the ancient world as a milestone in art . . . . Praxiteles' original has long been lost . . . . But it was so famous that hundreds of versions and replicas of it were made across the ancient world, in full size and miniature."). It is difficult to imagine that this could have been done if anything like a copyright in the Aphrodite had existed.

[60] *See generally* JESSICA SILBEY, THE EUREKA MYTH: CREATORS, INNOVATORS, AND EVERYDAY INTELLECTUAL PROPERTY (2014).

[61] Although Roman conceptions of property rights may have been harbingers of copyright concepts, Roman law had no analog to copyright. *See* VerSteeg, *supra* note 27, at 523 ("[I]t is virtually certain that the ancient Romans did not have a general law of copyright").

[62] It has been observed that Latin writers regularly complained about mangled copies, but never about the fact of copying itself. *See id.* They were perhaps like today's bloggers and influencers: it was far more important to have lots of good copies made and distributed with attribution, contributing to one's fame and fortune, than to try to limit or control distribution.

[63] *See id.* at 525–26.

[64] *See* KAPLAN, *supra* note 13, at 2–3.

Suddenly, anyone with a printing press could appropriate the value of the author's work by making and selling copies. Previously, making a copy of a literary work required hours, weeks, perhaps months of painstaking labor, oftentimes by monks,[65] and in some cases, like the Book of Kells, could produce new works of high art in their own right. So too sculpture, where in ancient times, the copyist's skills, at least as a technical matter, had to approach those of the original, and the difficulty of making a copy created a practical impediment that was high enough that legal protection against copying would have seemed both unnecessary and arguably unwise.[66]

In England, the initial statutory response to what we would now call the "disruptive" technology of the printing press was the Stationers' Monopoly (Royal Charter, 1557), which effectively enforced Crown censorship by making sure that poachers or malcontents could not reproduce texts first registered to a member of the Worshipful Company of Stationers, a successor to the Guild of Stationers that had been formed in 1403.[67] The Stationers' Monopoly regulated copying, seditious and otherwise, by regulating access to the copying machines.[68] Upheavals in England during the Seventeenth Century generated opposition to the Stationers' Company (and Crown) censorship, leading eventually to a substitution of authors' for publishers' rights in the Statute of Anne (1710), perhaps for the political reason that protecting authors had become more attractive politically than protecting printers, notwithstanding that authors would as often as not (as at present) cede their rights to the printers/publishers as the only realistic means of compensation for their labors.[69] Thus,

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[65] Or, in Roman times, by slaves. VerSteeg, *supra* note 27, at 523 n.13.

[66] It is often said that copyright is not intended to reward "the sweat of the brow," but in this history we may see a counter-example. When making a copy is a laborious and skillful undertaking, arguably on a par with the effort required to produce the original, and when there is a high social value in having copies made (consider written works before the printing press), the natural rights of the copyist and the Benthamite interest in the greatest good for the greatest number both tilt in the direction of the copyist.

[67] VerSteeg points to an earlier monopoly granted to printers in Venice, which in 1469, granted one Spira the exclusive right to publish Cicero's and Pliny's letters for five years. VerSteeg, *supra* note 27, at 525.

[68] In Kaplan's memorable words, copyright was "secreted in the interstices of the censorship." KAPLAN, *supra* note 13, at 4. Shades here of the current efforts by authoritarian governments to regulate information by controlling access to social media and the internet.

[69] *See id.* at 22. Bellow and Montagu take a somewhat more jaundiced view of the Statute of Anne. *See supra* text accompanying notes 56-57.

technology, in the form of the printing press (or, previously, the lack thereof), was a necessary factor in the development of copyright law and operated independently of any natural law or positivist influence.

A second independent factor, well recognized by Kaplan, was culture. As we have seen, when the Statute of Anne was passed, the classical conception of creation still held pride of place, making the individual author subject to the forms in which they worked. Imitation, or at least successful and good imitation, was to be prized and rewarded, not denounced as plagiarism. Then came the Romantic era, which exalted the individual creator over his predecessors and demanded, indeed required, compensation for the creator's unheralded genius. In this cultural context, the inherent value of the individual and the individual's labors, extolled by Locke, Kant, and now Merges, reigns supreme. Culture was joined by another factor that Kaplan cites: decline of the patronage system, creating pressure to find other means for authors and artists to support themselves.[70]

We see, then, that there are strictures on what may or may not be subject to copyright that arise independently of the law, of any conception of natural law or even positivist law. Just as the law of gravity must recognize that the strength of gravity diminishes with the square of distance, and not any other power, the law of copyright—what it protects, what its rules of infringement are—must work within facts that are independent of the law itself, notably the technology of copying (or lack thereof), cultural expectations about the value and role of the creator, and the means of supporting creators. A law that is inconsistent with these facts would not function as law—it would be incoherent at best, laughably irrelevant at worst.

V. GENERATIVE ARTIFICIAL INTELLIGENCE AND THE FUTURE OF THE COPYRIGHT WORK

Thus far, we have looked backwards to understand how copyright law and its subject matter first emerged and then evolved. In her book, *Against Progress*, Professor Jessica Silbey looks forward, observing an accelerating disconnect between on the one hand, the principles of intellectual property law, focused on reward to the individual author or inventor, and on the other hand, the more communal equitable, social, political and moral demands of the society at large, as the instruments associated with intellectual property protection have moved to center stage in social interaction and

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[70] Query cause and effect here: did patronage decline as patrons realized authors could profit from the sale of copies churned out by the printers?

discourse.[71] In *Against Progress,* Silbey has taken the highly unusual step, at least for law professors, of actually conducting empirical research, asking creators whether intellectual property law, as currently practiced, achieves the Constitutional goal of promoting the "Progress of Science and the Arts." Her conclusions are not encouraging, and suggest an expanding gulf between the protections of intellectual property law and the progress of the arts. Professor Silbey concludes:

> Trenchant critiques of IP as a dysfunctional system lacking qualities such as proportionality and fairness appear in the accounts from everyday creators and innovators. They depict the current IP system as corrupted by incumbency bias; as profoundly out of balance in terms of contributions, risks, and rewards; and as plagued by a breakdown in civility norms exhibiting dishonest, meanness, and cutthroat behavior. In contrast and by implication, the ideal system would celebrate shared interdependence, punish coercion and threats, disincentivize exclusivity and hierarchy lacking social and shared benefits, reward only truly new and original work to avoid wasted time and money, and enable more freedom to work.[72]

From Silbey's perspective, the expansive copyright Work, augmented by marriage with an avaricious modern breed of capitalism, today throws a heavy wet blanket over the flames of creation, which depend on cooperation and mutuality. [73]

Silbey's insights were presaged by Mark Twain. He wrote this to Helen Keller when she had been accused of plagiarism:

> The kernel, the soul—let us go further and say the substance, the bulk, the actual and valuable material of *all* human utterances—is plagiarism. For substantially all ideas are second-hand, consciously and unconsciously drawn from a million outside sources, and daily used by the garnerer with a pride and satisfaction born of the superstition that he originated them . . . .

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[71] *See* JESSICA SILBEY, AGAINST PROGRESS: INTELLECTUAL PROPERTY AND FUNDAMENTAL VALUES IN THE INTERNET AGE (2022).

[72] *Id.* at 269.

[73] Copyright protection's debilitating effect on creativity has been recognized in fields as diverse as jazz improvisation and product design. *See Jazz Has Got Copyright Law and That Ain't Good*, *supra* note 46, at 1940–41; *see also* Fromer and McKenna, *supra* note 48.

> When a great orator makes a great speech you are listening to ten centuries and ten thousand men—but we call it *his* speech, and really some exceedingly small portion of it *is* his. But not enough to signify. It is merely a Waterloo. It is Wellington's battle, in some degree, and we call it his; but there are others that contributed. It takes a thousand men to invent a telegraph, or a steam engine or a phonograph, or a photograph, or a telephone or any other important thing—and the last man gets the credit and we forget the others. He added a little *mite*—that is all he did. These object lessons should teach us that ninety-nine parts of all things that proceed from the intellect are plagiarisms, pure and simple; and the lesson ought to make us modest.[74]

For both Silbey and Twain, human creation is a collective enterprise, encompassing past and present contributions. Generative artificial intelligence ("GAI") confirms their insight and further explodes the Copyright Act's supposition that a copyright "Work" can exist independently of its predecessors. GAI ingests, digests, and absorbs through its algorithmic intestines millions of outside sources and then, at our command, utters words, sentences, paragraphs, indeed whole papers, that look disturbingly like something we humans might have written. It's all very humbling to any writer. The distance between machine-generated prose and that of humans is small indeed, and works of authorship, the subject of the Copyright Act, may be no more than a tissue of mental recyclables, as Twain had said.

Which leads to the question, what impact will GAI, which casts such a bright light on the imitation inherent in human authorship, have on copyright law? GAI vividly demonstrates that things that look like

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[74] Letter from Mark Twain to Helen Keller (Mar. 17, 1903), *in* 2 MARK TWAIN'S LETTERS 731–32 (Albert Bigelow Paine ed. 2015). We must admit that Twain was writing a supportive letter to his friend Helen Keller, after she had been accused of having copied, as an eleven-year-old, her story "The Frost King" from Margaret Canby's story "Birdie and His Fairy Friends," although she had no memory of having heard the Canby story, much less copied it. *See* Jen Hale & Susanna Coit, *The Frost King Incident*, PERKINS SCH. FOR BLIND ARCHIVES BLOG (Apr. 30, 2021), https://www.perkins.org/the-frost-king-incident/. Twain's outrage at the accusation was vivid: "To think of these solemn donkeys breaking a little child's heart with their ignorant rubbish about plagiarism!" Letter from Mark Twain to Helen Keller, at 732. Hats off to the master slayer of pretense and hypocrisy!

works of human authorship can be generated independently of any human brush or pen by a computer that was "trained" on millions of prior works, and then produces images or text without human control. Or, to use our analysis of what a copyright Work is—a set composed of all the possible infringements of an original Work—the work created by GAI is nothing more than a subset of all the words, images or sounds on which the GAI platform has been trained, chosen and arranged on the basis of inferences the platform derives as it digests the prior works. If the copyright Work is a set comprising all the potentially infringing embodiments of an original Work, an original work in the GAI world is a single embodiment derived from all the other works on which it has been "trained." Which returns us to the question, what impact will GAI have on copyright law?

The two great copyright questions about GAI are whether the training process infringes copyright in the source materials and whether the output of a GAI service is copyrightable.[75] On the first, it is difficult to escape the conclusion that GAI is a veritable infringement carnival. As an example, consider the "diffusion" model, which is widely used in the visual arts. Generating the model begins by scraping—i.e., copying—all the relevant data the GAI platform can find, usually from web pages and other internet sources. The data can be images, it can be text, it can be the text associated with images. Anything digital that is scrapable and relevant. The more the merrier; to ask it to exclude copyrighted sources would be tantamount to asking the wind not to blow. In the next step, or really series of steps, the model camouflages the original data by adding "Gaussian noise"—the equivalent of static in a broadcast TV or radio station—at various levels of intensity.[76] Note that since the parameters of the added noise are known, one can use image processing techniques to filter the camouflaged image from the noise and obtain the original image.

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[75] *See* Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16190, 16191 (Mar. 16, 2023) (to be codified at 37 C.F.R. pt. 202).

[76] After the great German mathematician Karl Friedrich Gauss. *See* Ryan O'Connor, *Introduction to Diffusion Models for Machine Learning*, ASSEMBLY AI BLOG (May 12, 2022), https://www.assemblyai.com/blog/diffusion-models-for-machine-learning-introduction/; *see also* Ramesh, Aditya, et al., *Hierarchical Text-Conditional Image Generation with CLIP Latents*, CORNELL UNIV. (Apr. 13, 2022), https://arxiv.org/abs/2204.06125; Rombach, Robin, et al., *High-Resolution Image Synthesis with Latent Diffusion Models*, CORNELL UNIV. (Dec. 20, 2021), https://arxiv.org/abs/2112.10752.

The training data will also include any text ("captions") associated with the images.[77] Then, in a series of reverse steps, the model disentangles the image data from the noise until all noise is removed.[78] The captions act as guides to condition the noise removal process.[79] Once the diffusion model has mastered this trick, it can generate new images or other data from random data based on a text prompt.[80] Each step in the process is probabilistic, which implies that the data recovered in this way is never exactly identical to the training data.[81]

When this digital do-si-do has been applied to thousands if not millions of works, the result is a huge mass of "noise," including all the statistically camouflaged original bits of data, tagged with a multitude of synonymous captions pointing every which way through the camouflaged maze. As a result, the same prompt can and usually will generate a wide range of outcomes, all of which are derived from, but none of which are identical to, the training data.[82] Each step in the training process involves making a (camouflaged) copy of the training data and each recovery creates a new work derived from the training data.

To no one's surprise, lawsuits have already been filed asserting that the training process infringes copyright and other rights in the training materials. Very recently, the New York Times sued OpenAI and Microsoft, alleging that their use of Times articles to train their

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[77] *See supra* note 76.

[78] The step-wise disentanglement is accomplished through another mathematical process similar to a "Markov chain." *See* O'Connor, *supra* note 76.

[79] For example, if the identified noise level is high, then the model first removes an amount of noise to generate an image with a medium noise level. *See id.* In the next step, it removes another amount of noise from the image with the medium noise level to generate an image with a low noise level, and so on, until all the static has been removed. *See id.*

[80] *See* Rombach, Robin, et al., *High-Resolution Image Synthesis with Latent Diffusion Models*, CORNELL UNIV. (Dec. 20, 2021), https://arxiv.org/abs/2112.10752. Latent diffusion, also called stable diffusion, is described at Robin Rombach, *Stable Diffiusion*, GITHUB, https://github.com/CompVis/stable-diffusion (last visited Feb. 23, 2024).

[81] This accounts for the curious sense that the GAI system is human-like, coming up with its own expression and not merely parroting the training data.

[82] As an example of this process, my colleagues and I gave the following "prompt" to the AI chatbot ChatGPT: "Write an Essay on Ontology of Copyright." We did this twice; the two outputs are included as Appendices A and B to this paper. *See infra* Appendix A; *see also infra* Appendix B.

programs infringed copyright.[83] A class action has been filed by software developers against GitHub, Inc., Microsoft, and various Open AI entities alleging violation of the Digital Millennium Copyright Act and breach of open-source license contracts.[84] Another class-action lawsuit alleges infringement of copyright in the plaintiff class's artwork.[85] And Getty Images claims that Stability AI, Inc. has infringed its copyright and trademark rights.[86] More infringement claims are sure to come, as GAI depends entirely on accessing and reworking literally millions of sources. To require examination of the rights appurtenant to each of these sources and then negotiate a license for their use would stop GAI—or any other AI for that matter—in its tracks.

One cannot help but draw a parallel to the frantic efforts of the music and video publishing industries to stamp out file sharing when it threatened their long-held business models.[87] If our analysis in this paper is correct, efforts to contain and control the AI process through litigation may enjoy some early success, but in the longer term, are doomed. Whether by court decision, perhaps along the fair use lines of *Authors Guild v. Google*,[88] or by the creation of private law solutions such as licensing and the open source movement,[89] rights in the training materials for GAI will inevitably succumb to the fact that GAI cannot

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[83] Michael M. Grynbaum & Ryan Mac, *The Times Sues OpenAI and Microsoft Over A.I. Use of Copyrighted Work*, THE NEW YORK TIMES (Dec. 27, 2023), https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html#:~:text="Defendants%20seek%20to%20free-ride,steal%20audiences%20away%20from%20it.".

[84] *See Doe 1 v. GitHub Inc.*, No. 3:22-cv-06823 (N.D. Cal. Filed Nov. 3, 2022).

[85] *See Andersen v. Stability AI Ltd.*, No. 3:23-cv-00201 (N.D. Cal. Filed Jan. 13, 2023).

[86] *See Getty Images (US), Inc. v. Stability AI, Inc.*, No. 1:23-cv-00135-UNA (D. Del. filed Feb. 3, 2023).

[87] *See infra* notes 143–54 and accompanying text.

[88] *See Authors Guild v. Google, Inc.*, 804 F.3d 202 (2d Cir. 2015); *infra* text accompanying note 167.

[89] It has been reported that OpenAI "partnered" with Shutterstock, Inc. in developing its text-to-image platform, and Getty Images claims that it offers licensing terms for purposes of AI and machine learning. *See Press Release, Shutterstock Partners with OpenAI and Leads the Way to Bring AI-Generated Content to All*, *SHUTTERSTOCK* (Oct. 25, 2022), https://www.shutterstock.com/press/20435; Getty Images claims that it offers licensing terms for purposes of AI and machine learning. *See* Complaint ¶ 5, *Getty Images (US), Inc.*, No. 1:23-CV-00135-UNA.

function without unfettered access to and use of prior works, and GAI is simply too useful to be found to be infringing in its use of the training materials, including copyrighted Works.[90]

As to the second great question, whether the output of GAI is copyrightable, the Copyright Office has already answered with an unequivocal "no."[91] The Copyright Office's definitive ruling began with the attempted copyright registration of a comic book called *Zarya of the Dawn* by its purported human author, Kristina Kashtanova.[92]

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[90] It must be acknowledged that the process of copyright contraction I predict will not avoid reverses and exceptions. While the advent of GAI and other post-internet technologies has greatly expanded the ability of creators to borrow from previous creators and of uncopyrightable works to enter the public domain at faster rates than ever before, copyright protection has recently been bolstered by the Supreme Court's decision in *Andy Warhol Found. for Visual Arts, Inc. v. Goldsmith*, where an artist's photograph was an infringing derivative work, rather than a permitted fair use. *See* 143 S. Ct. 1258 (2023). In that case, the Supreme Court held that a magazine's commercial use of silkscreen images based on an artist's photograph was an infringing derivative work, rather than a permitted fair use. *See id.* at 1272–87. Although many "transformative" uses qualify as fair uses, the Supreme Court was reluctant to allow a magazine to use an altered version of a copyrighted photograph without a license from the photograph's owner. *See id.* The Court's holding expands the copyright owner's protection over their work by capturing a broader range of related works under the umbrella of infringing derivative works. *See id.* While not directly related to GAI, *Warhol* may support the proposition that GAI systems infringe the copyright owner's right to prepare derivative works.

[91] On March 16, 2023 the Copyright Office issued "Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence," 88 Fed. Reg. 16190, declaring, "[i]n the Office's view, it is well established that copyright can protect only material that is the product of human creativity. Most fundamentally, the term 'author,' which is used in both the Constitution and the Copyright Act, excludes non-humans. The Office's registration policies and regulations reflect statutory and judicial guidance on this issue." Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16190, 16191 (Mar. 16, 2023) (to be codified at 37 C.F.R. pt. 202). At the same time, the Copyright Office hedged its bets just a bit, announcing an "initiative" to "examine the copyright law and policy issues raised by artificial intelligence (AI), including the scope of copyright in works generated using AI tools and the use of copyrighted materials in AI training." *Copyright Office Launches New Artificial Intelligence Initiative*, U.S. COPYRIGHT OFF. NEWSNET ARCHIVE (Mar. 16, 2023), https://www.copyright.gov/newsnet/2023/1004.html.

[92] *See* Letter from Robert J. Kasunic, Assoc. Reg. of Copyrights, U.S. Copyright Off., to Kristina Kashtanova (Feb. 21, 2023),

Images in the book had been created using the GAI subscription service Midjourney.[93] On September 15, 2022, Kashtanova registered copyright in the entire book, images, text and all.[94] Kashtanova unwisely boasted in an Instagram post that she was the first to secure copyright in what she referred to as an "AI-assisted" comic book.[95] Alerted to this claim by a reporter, the Copyright Office initiated cancellation proceedings.[96]

On February 21, 2023, the Copyright Office canceled Kashtanova's original registration on the ground that she should have disclaimed the AI-generated content, while permitting a registration limited to "the selection, coordination and arrangement of the Work's written and visual elements."[97] The Office issued to Kashtanova a lengthy letter explaining its reasoning.[98] The letter relies heavily on a case from 1884, *Burrow-Giles Lithographic Co. v. Sarony*, in which the Court held that copyright protected Napoleon Sarony's photograph of Oscar Wilde.[99] The lithographer, Burrow-Giles, contended that a photograph is not a "writing," and the photographer not an "author"; therefore, Congress had not the power to extend copyright to photographs.[100] In reasoning that would affright the "originalist"

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https://copyright.gov/docs/zarya-of-the-dawn.pdf [hereinafter Kasunic Letter].

[93] *See Copyright Office Launches New Artificial Intelligence Initiative*, *supra* note 91.

[94] *See* ZARYA OF THE DAWN, Copyright Registration No. VAu001480196.

[95] *See* Vittoria Benzine, *A New York Artist Claims to Have Set a Precedent by Copyrighting Their AI-Assisted Comic Book. But the Law May not Agree*, ARTNET NEWS (Sept. 27, 2022), https://news.artnet.com/art-world/a-new-york-artist-claims-to-have-set-a-precedent-by-copyrighting-their-a-i-assisted-comic-book-but-the-law-may-not-agree-2182531.

[96] *See* Kasunic Letter, *supra* note 92, at 14 (attaching previous Kasunic letter to Kashtanova of October 28, 2022).

[97] *Id.* at 1.

[98] *See* Kasunic Letter, *supra* note 92.

[99] *See Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 54 (1884); *see also* Napoleon Sarony, photograph of Oscar Wilde *in* John Cooper, *Sarony Photograph 18*, OSCAR WILDE IN AM., https://www.oscarwildeinamerica.org/sarony/sarony-18.html (last visited Feb. 23, 2024).

[100] *See Burrow-Giles*, 111 U.S. at 56. Article I, Section 8, Clause 8 of the Constitution permits Congress "[t]o promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the

members of today's Court, *Burrow-Giles* recounted that the first Congress, which included drafters of the Constitution, had extended copyright not just to books, but to maps and charts, even giving them pride of place over books in the Copyright Act of 1790.[101] Therefore, the Court concluded, "[T]hese statutes certainly answer the objection that books only, or writing, in the limited sense of a book and its author, are within the constitutional provision. Both these words are susceptible of a more enlarged definition."[102] Then, the Court offered its enlarged definition: "By writings in that clause is meant the literary productions of those authors, and Congress very properly has declared these to include all forms of writing, printing, engraving, etchings, etc., by which the ideas in the mind of the author are given visible expression."[103] As to why photographs were not included in the Act of 1802 the Court said:

> The only reason why photographs were not included in the Act of 1802 is probably that they did not exist, as photography, as an art, was then unknown, and the scientific principle on which it rests, and the chemicals and machinery by which it is operated, have all been discovered long since that statute was enacted.[104]

Thence its conclusion as to Constitutional authority: "We entertain no doubt that the Constitution is broad enough to cover an act authorizing copyright of photographs, *so far as they are representatives of original intellectual conceptions of the author.*"[105] A more vivid example of the principle that law follows and reflects technology can hardly be imagined.

The Court next considered whether Sarony's photograph of Oscar Wilde was his "original intellectual conception."[106] The defendant lithographer contended that a photograph "is the mere mechanical reproduction of the physical features or outlines of some object, animate or inanimate, and involves no originality of thought or any novelty in the intellectual operation connected with its visible

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exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8.

[101] *See Burrow-Giles,* 111 U.S. at 57.

[102] *Id.* An originalist might ask, if the Constitutional drafters knew that maps and charts existed, why did they not mention them in Article I, Section 8 of the Constitution?

[103] *Id.* at 58.

[104] *Id.*

[105] *Id.* (emphasis added). So much for originalism in 1884.

[106] *Id.* at 58.

reproduction in shape of a picture."[107] The lower court had found, however, that Sarony's photograph of Oscar Wilde was a:

> useful, new, harmonious, characteristic and graceful picture . . . entirely from his own original mental conception, to which he gave visible form by posing the said Oscar Wilde in front of the camera, selecting and arranging the costume, draperies and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, suggesting and evoking the desired expression, and from such disposition, arrangement, or representation, made entirely by plaintiff, he produced the picture in suit.[108]

Based on this finding, the Court held that "[t]hese findings . . . show this photograph to be an original work of art, the product of plaintiff's intellectual invention, of which plaintiff is the author."[109]

Consider what Sarony's Work was. It turns out that the copyrightable composition in *Burrow-Giles* was not the photograph, but instead the staging and dressing of Oscar Wilde. The photo was, in modern terms, merely the fixation of this compositional Work. The *Burrow-Giles* Court specifically reserved, and did not decide, the question of whether the "manual operation, by the use of [photographic] instruments and preparations, of transferring to the plate the visible representation of some existing object" is copyrightable.[110] In spite of this reservation, the Copyright Office has

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[107] *Burrow-Giles*, 111 U.S. at 59.

[108] *Id.* at 60.

[109] *Id.*

[110] *Id.* at 59. Taken literally, these dicta would exclude Ansel Adams' iconic photographs of El Capitan from copyright protection. *See* Ansel Adams, *El Capitan* (photograph), *in* ANSEL ADAMS' YOSEMITE: THE SPECIAL EDITION PRINTS. But Adams is an artist whose photographic works have won recognition comparable to the best painters. Today, we would say that there was authorship in his choice of subject, angle, lens, film, aperture, exposure, time of day, and weather conditions. *See* Copyright Registration of Photographs, *infra* note 111. All variables were within Adams' control, or at least his choice. But what about a photo taken today with an iPhone? The vast majority of people using their iPhones to take pictures do not give the slightest thought to the difficult artistic issues of lighting, exposure, depth of field, and composition, of which Adams was a master. The authorship of a person taking an iPhone photo has been reduced to deciding where to point the thing and then touching "photo," leaving the iPhone to do all the difficult artistic work regarding exposure, lighting, and the like. Every subtlety in the resulting image that Ansel Adams would have worried over is controlled entirely by the

staked out a much more expansive definition of what a copyrighted Work may be, at least in the context of photography. Circular 42 states:

> Photographs may be registered with the U.S. Copyright Office as visual art works. The copyright in a photograph protects the photographer's artistic choices, such as the selection of the subject matter, any positioning of the subject(s), the selection of camera lens, the placement of the camera, the angle of the image, the lighting, and the timing of the picture.[111]

In the opinion of the Copyright Office, a Work has migrated from Sarony's stage set and costumes to the photograph itself.[112]

Returning to the Kashtanova letter, the Copyright Office refused registration of Kashtanova's AI-generated images on the ground that Kashtonova was not the person "who has actually formed the picture and acted as "the inventive or master mind."[113] The process Kashtanova described involved issuing English-language "prompts" to Midjourney, which issued images in response.[114] The prompts "influence" the resulting images, but do not dictate them.[115] Users like Kashtonava may generate some hundreds of images in this way before hitting on one that is what they want.[116] Because the prompts "function closer to suggestions than to orders," the Copyright Office found the situation "similar to the situation of a client who hires an artist to create an image with general directions to its contents."[117] In that case, the artist would own copyright in the images, not the person hiring the artist.[118] The Copyright Office attempts to distinguish Midjourney from other "tools" used by authors on the ground that users of Midjourney do not "actually form" the generated images and therefore are not, in the language of *Burrow-Giles,* the "mastermind" behind them.[119]

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technology in the iPhone. Is that not the exact question the *Burrow-Giles* Court reserved? But if "point and shoot" is enough authorship to support copyright in a modern photograph, why are not Kashtanova's prompts to Midjourney sufficient to support her claim of copyright in the resulting images?

[111] Copyright Registration of Photographs, Circular 42, U.S. Copyright Office, Mar. 2021, https://www.copyright.gov/circs/circ42.pdf.

[112] Again, the law has followed the technology.

[113] Kasunic letter, *supra* note 92, at 9.

[114] *See id.* at 6.

[115] *See id.* at 9.

[116] *See id.*

[117] *Id.* at 10.

[118] *See id.*

[119] Kasunic letter, *supra* note 92, at 9.

Instead, Midjourney "generates images in an unpredictable way," creating a "significant distance" between the user's prompt and Midjourney's response.[120] But there is no question that the images, if created by a human artist, would be considered copyrightable.[121] The sole basis for denying copyright in the images is that the artist here is a machine, which, in the view of the Copyright Office, is *verboten*. Therefore, the image must not be copyrightable, however original it might be.

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[120] *Id.* These conclusions are consistent with our understanding of how GAI works. *See supra* notes 76-82 and accompanying text. Referring to Appendices A and B, the prompt "Write an Essay on Ontology of Copyright" generated two outputs that are quite remarkably different. *See infra* Appendix A; *see also infra* Appendix B. Could it reasonably be asserted that the prompter was the author of either of these papers by reason of the identical prompt? I would think not: the gap between prompt and output is too large by many orders of magnitude. So are the outputs then uncopyrightable, just from the standpoint of their content (as opposed to their source)? This seems equally implausible—they are certainly original and, had they been written by, say, a sophomore in college, would merit a C+ a least. The same could be said of Kashtanova's AI-generated images.

[121] Kashtanova also claimed copyright in Midjourney-generated images that she had modified using Photoshop. *See* Kasunic Letter, *supra* note 92, at 10–12. The Copyright Office complained that it "cannot determine what expression in the image was contributed through her use of photoshop as opposed to generated by Midjourney," but acknowledged that "substantive edits . . . could provide human authorship and would not be excluded from the new registration certificate." *Id.* at 12. The implicit requirement to separate human and AI contributions places a heavy, if not impossible, burden on the copyright claimant who uses the creative process Kashtanova describes, in which there was repeated back-and-forth between her and Midjourney. If Kashtanova and Midjourney were humans, we would say that their respective contributions are merged, making the images joint works that are fully protected by copyright without any requirement that their contributions be separately identified. *See* 17 U.S.C. §101 (definition of "joint work" as a work "prepared by two or more individuals, with the intent that their contributions be merged into a single work."). But in the view of the Copyright Office, the "individuals" must be human, leading to the Copyright Office's conclusion that the merged images cannot be joint works and therefore are not copyrightable unless Kashtanova can meet the heavy burden of separately identifying her contributions. In practical terms this makes her copyright, understood as a credible claim against an infringer, virtually impossible to protect.

Is the requirement of human authorship as a precondition for copyrightability supported by the Constitution or statute?[122] If the Constitutional word "writings" may be enlarged to encompass the technology of photography, which had not been invented in 1790, shouldn't the word "author" be subject to a comparable enlargement to encompass GAI, a technology inconceivable in 1976, much less 1790? Despite the Copyright Office's assertion,[123] nothing in the Constitution or in the copyright statutes enacted in the last 200 or more years has required an "author" to be a human being. Instead, the Copyright Office and the courts, without clear Constitutional or statutory authority, have maintained that non-humans, be they monkeys,[124] elephants,[125] or computers,[126] are not authors and therefore their output is not copyrightable. This collides with the fact that many of the Works created by such non-humans would easily qualify as copyright Works if considered independently of their provenance. This conclusion is strongly reinforced by the storied copyright principle that copyright will protect works of the most trivial originality, "no matter how crude, humble or obvious it may be."[127] Surely the works of GAI, or those of the monkey in *Naruto,* or for that matter the songs of humpback whales, pass this test with flying colors, and at least as easily as most of the crushingly dull tripe one finds on social media.[128]

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[122] Scholarship on the question whether copyright requires human authorship is very helpfully cataloged in Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 BERKELEY TECH L. J. 343, 350 n.25 (2019).

[123] *See supra* note 91 and accompanying text.

[124] *See Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018).

[125] *See* U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2021).

[126] *See id.*; *see also* Kasunic Letter, *supra* note 92.

[127] U.S. COPYRIGHT OFF., *supra* note 125, § 308.2 (citing *Feist Publ'ns Inc. v. Rural Tel. Serv. Co., Inc.*, 499 U.S. 340, 346 (1991)).

[128] One suspects that the Copyright Office may be discomfited in part by the fear that according copyright protection to non-humans would open a "can of worms" regarding copyright ownership. *See* Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 IDEA: J. FRANKLIN PIERCE CTR. FOR INTELL. PROP. 431, 441 (2017) (arguing rather apocalyptically that recognizing non-human authors would "undermine the current U.S. legal system"). If a monkey or computer program could own copyright, who speaks for the monkey or computer program? But the law, and especially the common law, has resolved similar issues with ease. That a trust holds property for the benefit of its beneficiaries is a principle virtually as old as the common law. Minors cannot own property or enter into binding agreements, but their

Enthusiasts for GAI seek copyright protection for its outputs as a means of encouraging investment and development. As an example, the article "Do Androids Dream of Copyright: Examining AI Copyright Ownership,"[129] builds on U.K. law, which extends copyright protection for a computer-generated work to the programmer who made the "arrangements necessary for the creation of the work."[130] The article proposes a regime in which the AI system is "author-in-fact" and the programmer "author-in-law."[131] This would seem a radical extension of the concept of the copyright Work to include not only things infringing its original embodiment, but also original embodiments that were not authored by the copyright owner itself.

At the other extreme, one finds scholars like Jane Ginsburg and Luke Budiardjo, who dismiss entirely the possibility that GAI-generated works are copyrightable.[132] Jealous of the creative genius of humans, stingy in their recognition of mutuality of the type recognized by Silbey and Twain, and skeptical of the "proximate" ability of machines to match the creative human, Ginsburg and Budiardjo consider the computers the "amanuenses"—the scriveners—of their human creators.[133] Conceding that the term "author" could in principle include non-humans, they assert that as of yet the computers have not achieved that lofty perch of recognition.[134]

It seems likely that by reason of tradition, the weight of authority, the legal and practical challenges posed by recognition of

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guardians can do so on their behalf. With a little legal ingenuity, it is submitted that the common law could overcome such problems in the context of copyrightable works created by non-humans without breaking a sweat.

[129] *See* Gia Jung, *Do Androids Dream of Copyright?: Examining AI Copyright Ownership*, 35 BERKELEY TECH L.J. 1151, 1175 (2020).

[130] Copyright, Designs and Patents Act 1988, c. 1, § 9(3) (Eng.).

[131] *See* Jung, *supra* note 129, at 1176–77.

[132] *See* Ginsburg & Budiardjo, *supra* note 122, at 396–400.

[133] *See id.* at 349. Ginsburg's and Budiardjo's hypothetical examples inevitably postulate an initial human creator, a kind of latter-day Aristotelian Prime Mover, whose creations precede their later implementation by other means, be they AI or a macaque monkey. But what if the GAI output came first? Is the human then GAI's amanuensis?

[134] *See id.* at 349–50. I must confess that as author of this paper I flatter myself that it has more intellectual value than the rather superficial "papers" attached at Appendices A and B. *See infra* Appendix A; *see also infra* Appendix B. But we must recall that copyright does not require genius or anything approaching it for protection. The faintest glimmer of originality will do. *See supra* text accompanying note 127. My paper might be better on some level or other, but that should not deny the others copyright protection.

non-human authorship, and perhaps, most fundamentally, human vanity, the syllogism that a copyright Work's "author" must be a human being, and therefore, if the author is not a human being, the work cannot be a copyright Work, will stick. For one thing, figuring out who owns copyright in the GAI-generated work is not easy. Is it the programmer, the owner of the platform, or the person prompting the platform to generate a work?[135] Another reason stems from the nature of GAI itself. GAI is voracious and undiscriminating. It depends on countless iterations of the same process of examination, distillation, prediction, reexamination, and modification to achieve ever-closer analogues to the logic, structure, sound, and appearance of the training materials. As GAI-generated materials proliferate, they will be vacuumed into other GAI systems, along with everything else. If copyright inhered in the GAI-generated material, it would greatly inhibit the GAI process itself.

Despite, or perhaps because of, the lack of copyright protection for its output, GAI is destined to become a fundamental tool of creativity. Artists and other creators of all stripes, whether verbal, visual, musical, or technical, are seizing its potential.[136] Unless the law is changed to accord copyright protection or something like it to the works created by GAI, the net effect will be dramatically to enlarge the public domain: if the new works generated by GAI are not copyrightable, they enter the public domain immediately upon public disclosure.[137] This need not be surprising or troubling. Nature augments the public domain with each blossom in spring, with each snowflake in winter. Why not GAI as well?

And what of the rights of human creators who assimilate and build on GAI-generated works? In *Kashtanova*, the Copyright Office found that small edits to the GAI-generated image of Zarya of the Dawn were insufficient to sustain a claim of copyright, although edits to another GAI-generated image intended to show aging "could

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[135] *See* Ginsburg & Budiardjo, *supra* note 122, at 417. These conundra are recounted in detail in Ginsburg & Budiardjo in support of their conclusion that it is premature to assign copyright, or anything like it, to AI-generated works.

[136] *See, e.g.*, Kevin Roose, *A.I.-Generated Art is Already Transforming Creative Work*, N.Y. TIMES (Oct. 21, 2022), https://www.nytimes.com/2022/10/21/technology/ai-generated-art-jobs-dall-e-2.html.

[137] This is an ironic twist on the pre-1976 copyright principle that copyright attaches to a work only upon publication, with a copyright notice, or registration. *See* Copyright Act of 1909, Publ. L. No. 60-349 § 1, 35 Stat. 1075, 1075 (amended 1976).

provide human authorship and would not be excluded from the new registration certificate."[138] It is not difficult to imagine many situations in which a human, perhaps inspired by something generated by GAI, adds nuance sufficient to justify copyright protection, much as a nature photographer or painter elaborates nature's creations.[139] The fact that Ansel Adams did not create El Capitan and that Van Gogh did not create a starry night does not diminish in the slightest the power of their works. It does, however, limit what they can claim as their own, and the scope of what they can claim would depend on the outcome of an infringement litigation, if there were one. Again, the metes and bounds of the copyright Work would be defined by the outcome and function of infringement litigation.

In the copyright context, GAI promises to become the new paradigm for authorship, changing our conception of what originality might be. Everything GAI generates is a collaboration with everything that came before and "trained" it, whether copyrighted or not. This model, once it takes hold, will inevitably be extended to human creativity. As Twain said, humans assimilate prior works and generate new works derived, directly or remotely, from what they have learned, in a collaboration with predecessors.[140] The collaboration may be conscious, or may be through the unconscious echoes and shadows of prior works, but the result is never wholly the product of a single author. The use of GAI will necessarily recognize this collaboration. Thanks to AI, all copyright Works begin to be seen as collective Works, with copyright confined to the selection, arrangement, and modest modification of the components and, in Twain's words, the "little mites" provided by the final author. And the rules of infringement, which define the set comprising a copyright Work, will necessarily narrow to reflect this new understanding, both on the input side—when prior works are infringed—and on the output—when a subsequent work infringes. The two must go hand in hand. What can be claimed in copyright is necessarily thinned, but the range of creation is at the same time expanded and enhanced by the GAI-enlarged public domain.

VI. IF COPYRIGHT IS A CREATURE OF CULTURE AND TECHNOLOGY, IS LAW IN GENERAL?

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[138] Kasunic Letter, *supra* note 92, at 11–12; *supra* note 121.

[139] Defenders of human authorship like Ginsburg and Budiardio assume that the initial creative spark must come from a human. *See* Ginsburg & Budiardjo, *supra* note 122 § II(A), at 354. I expect that Ansel Adams or Van Gogh may have had a more modest conception of their role.

[140] *See supra* note 74, and accompanying text.

We have this from no less an authority than Justinian:

> Age-encrusted custom is not undeservedly cherished as having almost statutory force, and this is the kind of law which is said to be established by use and wont. For given that statutes themselves are binding upon us for no other reason than that they have been accepted by the judgment of the populace, certainly it is fitting that what the populace has accepted without any writing shall be binding upon everyone. What does it matter whether the people declares its will by voting or by the very substance of its actions? Accordingly, it is absolutely right to accept the point that statutes may be repealed not only by vote of the legislature but also by the silent agreement of everyone expressed through desuetude.[141]

We might venture to amend Justinian to note that in the modern world, new-born practice has potency equal to age-old custom in effectively repealing portions of the Copyright Act. This principle has played out in dramatic fashion in the digital age. If Gutenberg's invention of the copying machine laid a necessary foundation stone for copyright protection, then digitization and the internet have made prohibitions against copying all but incomprehensible, at least for persons born in the digital age. Thanks to digital technology, it has become trivially easy for anyone to duplicate exactly and distribute widely all manner of copyrighted Works—tweets, blogs, memes, emojis, books, articles, movies, images, musical performances, to name a few. For persons who grew up in this environment, the creation, copying, storage, and dissemination of digital materials is the rule, not the exception, and being told that it is illegal strikes the young as puzzling at best, unworkable at worst, akin to telling people that it is illegal to walk. That is just what computers, the internet, and people do! Computers cannot operate without making copies in RAM. The internet's packet-switched network first atomizes content into little digital packets (shades of mereology here: each a part of the whole?), and then recombines the packets (in copyright terms, makes a copy of the original), which it then displays (17 U.S.C. §106 again!) to the recipient. In the digital era, the copying, display, performance, and dissemination of digitized authorship is effortless, rewarding, natural,

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[141] UNIV. PA. PRESS, THE DIGEST OF JUSTINIAN 13 (Alan Watson, trans., Univ. of Pa. Press 1998).

and ubiquitous. Laws attempting to prevent it seem comically quaint relics, about as effective as religious prohibitions on premarital sex after the invention of the birth control pill.[142]

The initial reaction of the industries with business models built on the sale of copies (publishers, the music recording industry) or the control of copies (movies) was to try to stamp out unlawful digital copying through ever more aggressive litigation and severe punishments for copyright infringement. The Act of 1976 provided statutory damages of not less than $250 nor more than $10,000 for all infringements of a single work, or up to $50,000 in cases of willful infringement.[143] In 1988, the statutory damages for copyright infringement were ratcheted up to $500, $20,000, and $100,000, respectively,[144] and in 1999, they were bumped to $750, $30,000, and $150,000.[145] Then, in 2004, a new subsection 504(c)(3) created a rebuttable presumption of willfulness if the infringer tried to mask its identity.[146] Meanwhile, VCR recordings of copyrighted Works, which were easily if somewhat laboriously copyable, all featured, in their introductory matter, dire warnings of FBI investigations and criminal punishment for copying. Industry groups embarked on a global litigation project to try to stamp out file sharing, which was seen as an

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[142] I well remember when the first photocopying machines appeared in libraries, accompanied by posted warnings against the use of the machines to make unauthorized copies. The struggle to reconcile this early form of facile copying with the Copyright Act's strictures produced such curious and largely irrelevant historical relics as the elaborate comprises in Section 108 of the Copyright Act, 17 U.S.C. § 108 (library photocopying) and the "Agreement on Guidelines for Classroom Copying in Not-for-Profit Educational Institutions," H.R. REP. NO. 94-1476, at 68-74 (1976). These antiquities may have some faithful adherents in libraries or copy centers (to the extent any still exist), but when every person's personal computer has become a copy center, they are about as relevant to modern-day copying as is the canon law regarding the Liturgy of the Hours to all but the most devout modern-day Catholics. *See generally* 1983 CODE c.1173-75.

[143] *See* Copyright Act of 1976, Pub. L. No. 94-553, § 504(c), 90 Stat. 2541, 2585-86 (codified as amended at 17 U.S.C. § 504(c)).

[144] *See* Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, § 10(b), 102 Stat. 2853, 2860 (codified as amended at 17 U.S.C. § 504(c)).

[145] *See* Digital Theft Deterrence and Copyright Damages Improvement Act of 1999, Pub. L. No. 106-160 § 2, 113 Stat. 1774, 1774 (codified as amended at 17 U.S.C. § 504(c)).

[146] *See* Intellectual Property Protection and Courts Amendments Act of 2004, Pub. L. No. 108-482 § 203, 118 Stat. 3912, 3916 (codified as amended at 17 U.S.C. § 504(c)).

existential threat to their members.[147] The International Federation of Phonographic Industry, the Motion Picture Association of America, and Recording Industry Association of America ("RIAA") embarked on a furious, highly publicized, aggressive campaign against peer-to-peer file sharing.[148] Representing its members as named plaintiffs, RIAA alone filed over 20,000 lawsuits against individuals claiming copyright infringement between 1997 and 2007. And the courts responded with vigor, in some cases levying draconian fines against college students who dared to engage in peer-to-peer file sharing,[149] and in the context of computer software, expanding copyright protection into such utilitarian realms as the zeros and ones of object code,[150] the "look and feel" of computer games,[151] and the "user interface" of work-a-day products such as Lotus 1-2-3.[152]

To no avail: by 2008 RIAA, speciously declaring victory, all but abandoned its campaign against peer-to-peer file sharing, claiming that the lawsuits had "outlived their usefulness."[153] Or, as Justinian might have said, RIAA finally acknowledged the reality that the Copyright Act had been amended by "judgment of the populace."

Ultimately, reacting to these extrinsic pressures, industries such as movies and music publishing that had derived substantial

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[147] *See Trade Group Efforts Against File Sharing*, WIKIPEDIA, https://en.wikipedia.org/wiki/Trade_group_efforts_against_file_sharing (last updated Nov. 8, 2023).

[148] *See Id.*

[149] *See Id.*

[150] *See Apple Comput., Inc. v. Franklin Comput. Corp.*, 714 F.2d 1240, 1249 (3d Cir. 1983).

[151] *See generally Atari, Inc. v. N. Am. Philips Consumer Elec. Corp.*, 672 F.2d 607 (7th Cir. 1982).

[152] *See Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F.Supp 37, 79–80 (D. Mass. 1990). I, and many others, notably and prominently Professor Pam Samuelson, tried to raise the alarm against this encroachment of copyright into areas it was ill-equipped to serve. *See* Pamela Samuelson, *CONTU Revisited: The Case against Copyright Protection for Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663 (1984). Professor Samuelson's comprehensive oeuvre on this and related topics is cataloged at Berkeley Law, *Pamela Samuelson: Publications*, https://www.law.berkeley.edu/library/ir/faculty/?id=5476#tab_publications (last visited Nov. 10, 2022). For my much more sparse collection, *see generally* Thomas Hemnes, *The Adaptation of Copyright Law to Video Games*, 131 U. PA. L. REV. 171 (1982) and other articles collected at THOMAS HEMNES, HOW LAW WORKS ch. 3 (Vernon Press 2022).

[153] *Trade Group Efforts Against File Sharing*, *supra* note 147.

revenues from the sale or control of copyrighted "copies" adjusted to the new reality. They ceased trying to enforce copyright against individual copyists, which was futile, and instead adopted subscription-based and "streaming" business models.[154] These models were supplemented, in the case of performing artists, by live performances that did not rely on the elimination of unauthorized copying for their success, but instead made the content widely and easily available for a modest fee that was, for most people, far more convenient than the time and trouble required to download copies.[155] In 1980, the dominant source of income in the music industry was the sale of vinyl records—about $9 billion out of $10 billion total 1980 revenue.[156] By 1990, sales of vinyl had plummeted to near zero, replaced initially by cassettes ($9 billion) and then, by 2000, by CDs ($21 billion). [157] Despite the RIAA's carpet-bombing litigation campaign, which continued until 2008, the

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[154] *See, e.g.*, Dirk Libbey, *How the Movie Theater Business Model Could Change if More Studios Shift to Streaming*, CINEMA BLEND (Dec. 3, 2020), https://www.cinemablend.com/news/2559660/how-the-movie-theater-business-model-could-change-if-more-studios-shift-to-streaming; Ryan Faughnder, *As Streaming Services Get Frugal, Programming Changes Throw Hollywood Creators for a Loop*, L.A. TIMES (Aug. 16, 2022), https://www.latimes.com/entertainment-arts/business/newsletter/2022-08-16/streaming-services-programming-changes-wide-shot-newsletter-the-wide-shot.

[155] *See* Tom Brueggemann, *Digital Entertainment Is More than Triple the Global Box Office, Says MPA's Annual Report*, INDIEWIRE (Mar. 14, 2022, 10:06 AM), https://www.indiewire.com/2022/03/mpa-2021-theme-report-box-office-streaming-1234707572/ (The Motion Picture Association reported that by 2021, its revenues were "completely dominated" by streaming and video-on-demand.).

[156] *See* Felix Richter, *From Tape to Tial: 4 Decades of U.S. Music Sales*, STATISTA (June 24, 2022), https://www.statista.com/chart/17244/us-music-revenue-by-format/ (statistics from Recording Industry of America).

[157] *See id.* Surprisingly, vinyl record sales have risen in recent years. *See* JOSHUA P. FRIEDLANDER & MATTHEW BASS, YEAR-END 2021 RIAA REVENUE STATISTICS (RIAA 2021) ("The resurgence in vinyl records continued for the 15th consecutive year, as revenues grew 61% to $1.0 billion in 2021."). Reports have shown, however, that many vinyl purchasers never listen to those records, and some do not even own a record player. It is more in the nature of a collectible or souvenir and no more functions to play music than a signed Babe Ruth baseball functions to play baseball. Motivations for purchasing vinyl range from financially supporting one's favorite artist to collecting records as an investment opportunity. *See* Mark Savage, *Music Streaming Boosts Sales of Vinyl*, BBCNews (Apr. 14, 2016), https://www.bbc.com/news/entertainment-arts-36027867.

recording industry's revenues slumped to $7.7 billion by 2014.[158] The lawsuits had a "negligible effect" on the availability of copies.[159] The recording industry finally recognized that it needed a new business model, and thanks almost entirely to streaming services, without any visible or invisible support from the Copyright Act, its revenues recovered to $14.9 billion by 2021.[160] By then, the Copyright Act's interdiction of, and mighty penalties for, the making and distribution of unauthorized copies had become a dead letter. The recording industry no longer depended on the enforcement of copyright for its revenues.[161] Today, persons "posting" content on social media *want* the whole world to copy and distribute their postings, generating "followers" and making the posters "influencers," which has far more value than the intrinsic value of the inane postings themselves.[162] In the streaming/social media context it's "going viral" (i.e., widespread copying) that is prized and lack of copying that is despised.[163]

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[158] *See* Richter, *supra* note 156.

[159] *Id.*

[160] *See id.* The Statista website contains an interesting footnote that its revenue total for streaming services, but apparently not for other revenue sources, includes payments to performers and copyright holders. *See id.* This suggests a further shift in music industry revenues, with the recording industry losing some of its iron grip over music revenues in favor of the performers and copyright holders, thanks to the change in business model. Shades here of the Stationers Company's monopoly being supplanted, eventually, by the Statute of Anne. *See* BELLOS & MONTAGU, *supra* note 9, at 97 (discussing House of Lords decision in the 1774 case of *Donaldson v. Becket*).

[161] *See id.*

[162] Ironically, the right of attribution, characterized by the Berne Convention as "moral," as opposed to an "economic" right, has attained a dominant economic value in the social media context. Berne Convention for the Protection of Literary and Artistic Works art. 6bis, Sept. 9, 1886, as revised at Paris July 24, 1971 and amended in 1979, S. Treaty Doc. No. 99-27. Although the United States has adhered to the Berne Convention since 1989, Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853, federal recognition of the "moral" rights of attribution and integrity is limited to works of fine art and does not extend, for example, to "tweets" or other verbal social media posts. Visual Artists Rights Act of 1990, Pub. L. No. 101-650, 104 Stat. 5128. Nor do any state moral rights laws apply to Works other than visual art. U.S. COPYRIGHT OFF., AUTHORS, ATTRIBUTION, AND INTEGRITY: EXAMINING MORAL RIGHTS IN THE UNITED STATES, 122 (2019). In this, private "terms and conditions of use" have again filled the gap in U.S. copyright law.

[163] One is reminded of the Roman authors who complained not about copies of their works being made, but that the copies were not accurate. *See*

In this environment, the law also evolved to reflect the new technological and social reality. Unauthorized transfer of copyrighted materials passing through the systems of the internet service providers ("ISPs") that make the internet possible was an obvious and extreme example of copyright infringement, violating the fundamental prohibition in Section 106(3) of the Copyright Act against unauthorized copying and distribution of copyright Works and comparable provisions in the copyright laws of other countries. But shutting down such file transfers would have been tantamount to shutting down the internet, if every ISP had to determine for every email, email attachment, file transfer protocol or other transmission of digital information who owned copyright in it and whether the owner gave permission for its transfer. Accordingly, copyright gave way to technology, in the form of the Digital Millennium Copyright Act of

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VerSteeg, *supra* note 27, at 523 n.13. The Romans wanted to be read and to be influencers, just like today's bloggers. One could of course argue that when someone posts something on X (formerly Twitter), they are implicitly licensing others to copy and forward it, preserving copyright in the original posting. X's Terms of Service declare that "Content" belongs to the person posting it, but the Terms immediately grant X:

> a worldwide, non-exclusive, royalty-free license (with the right to sublicense) to use, copy, reproduce, process, adapt, modify, publish, transmit, display and distribute such Content in any and all media or distribution methods now known or later developed (for clarity, these rights include, for example, curating, transforming, and translating). This license authorizes us to make your Content available to the rest of the world and to let others do the same.

Terms of Service, X (effective Sept. 29, 2023), https://twitter.com/en/tos.

The Lord X giveth and the Lord X taketh away. Saying the poster holds copyright is at best window dressing on what is really going on: the X posters could care less whether they control copying of their posts, as long as they can be and are widely disseminated with copies that display their names. Other online platforms, such as TikTok and YouTube, have similar terms. TikTok assures users that they "still own the Copyright in User Content," while providing TikTok itself and all its users an extensive license "in any format and on any platform." *Terms of Service*, TIKTOK (last updated Feb. 2019), https://www.tiktok.com/legal/terms-of-service-us?lang=en. YouTube's terms are more restrictive, still allowing users to retain ownership in their content but restricting other users' licenses to use *on the YouTube platform*. *Terms of Service*, YOUTUBE (last visited Jan. 5, 2022), https://www.youtube.com/static?template=terms. So perhaps the moral right of attribution is all that is left of copyright, at least in the context of social media. And the X Terms (and comparable terms in other file sharing media) became a kind of open source for content.

1998 (the "DMCA"),[164] and comparable provisions in the EU,[165] that broadly exempted ISPs from copyright infringement liability as long as they adopted some simple procedures for responding to copyright infringement claims in the form of "Digital Millennium Take-Down Notices."[166]

Another copyright retreat in the Age of the Internet was *Authors Guild v. Google*,[167] in which the Authors' Guild unwisely challenged Google's "Library Project." Google's "Project" made entire copies of some tens of millions of books submitted to Google by libraries and then displayed "snippets" from each book in response to search queries.[168] As a fig leaf, Google magnanimously provided its purloined copies of the books back to the libraries, *gratis*. It might have been thought that copying an entire copyright Work, without alteration, would weigh heavily against fair use, but the Second Circuit, in a unanimous decision led by Judge Laval, himself a redoubtable copyright authority, found all that copying to be a transformative fair use. Indeed it was, but the transformation was not limited to the copied books; it transformed the copyright law itself.[169] In the Age of Google, copyright no longer protected the unauthorized copying of the whole

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[164] *See* Pub. L. No. 105-304, 112 Stat. 2860 (codified as amended in 17 U.S.C. § 512).

[165] *See generally* Directive 2000/31, of the European Communities and of the Council of 8 June 2000 on Electronic Commerce, 2000 O.J. (L 178); Directive 2001/29, of the European Communities and of the Council of 22 May 2001 on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society, 2001 O.J. (L 167).

[166] *See generally Digital Millennium Copyright Act*, WIKIPEDIA, https://en.wikipedia.org/wiki/Digital_Millennium_Copyright_Act#:~:text=The%20Digital%20Millennium%20Copyright%20Act,Intellectual%20Property%20Organization%20(WIPO) (last visited Nov. 2, 2022, 23:55 GMT). The DMCA was an odd duck in that at the same time it exempted the most flagrant internet violation of the rights of copyright owners, it attempted to beef up their protections by implementation of the WIPO Performances and Phonograms Treaties. *See* Wikipedia, *WIPO Copyright and Performances and Phonograms Treaties Implementation Act*, https://en.wikipedia.org/wiki/WIPO_Copyright_and_Performances_and_Phonograms_Treaties_Implementation_Act (last visited June 6, 2022, 21:48 GMT). From my point of view, it is hardly surprising that the copyright-strengthening portions of the DMCA received a far less hospitable reception in the courts and in the internet world than the ISP protection portions. *See id.*

[167] *See Authors Guild v. Google, Inc.*, 804 F.3d 202 (2d Cir. 2015).

[168] *See id.*

[169] *See id.*

texts of tens of thousands of books, as long as the result of such was useful as a research tool in the context of the new technology.[170]

Copyright has also evolved through non-statutory, non-caselaw means, what I have elsewhere called "private law."[171] Perhaps the most vivid example of a private amendment to copyright principles is the open source movement. Almost from the moment that copyright was extended to computer programs there were howls of protest from the programming community.[172] The protests were partly political, partly practical. From the political standpoint, many programmers, notably figures like Richard Stallman, saw the internet and its computer software foundation as a new polity that transcended traditional national and personal property bounds.[173] And so it was, in many ways. From a practical standpoint, programmers immediately realized that they could only work effectively if they could build upon code that had been written before and make their code interact with other code,[174]

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[170] As the footnotes to this article attest, with their many references to internet sources, the internet is a formidable research tool that relies to no small extent on unauthorized copying. There is a suspicion that the Second Circuit, like everyone else, relied heavily on Google searching and did not wish to render a decision requiring its clerks to travel to libraries to thumb through card catalogs to find references.

[171] *See* HEMNES, *supra* note 152, at ch. 4.

[172] *See, e.g.*, Stallman, *Misinterpreting Copyright: A Series of Errors*, GNU OPERATING SYS., https://www.gnu.org/philosophy/misinterpreting-copyright.en.html (last visited Feb. 13, 2024).

[173] I had the privilege of being lobbied, not to say browbeaten, at all hours of the night by Stallman when I was defending Mosaic Software from Lotus' claim of infringement in the user interface of Lotus 1-2-3 in the 1980s, a history discussed in some detail in T. Hemnes, *Copyright and the Limits of Textualism*, 68 J. COPYRIGHT SOC'Y 483, 502-05 (2022). Suffice to say that Stallman is an ideologue, whose passion for free and open access to software code is reflected in the most aggressive GNU licenses of the Open Software Foundation. *See GNU Software*, GNU OPERATING SYS., https://www.gnu.org/software/software.en.html (last visited Nov. 10, 2022). Thanks to Stallman and many others of like mind, the GNU/Linux operating system is ubiquitous in the software industry, having been adopted by players as grand as IBM. *See Enterprise Server Solutions*, IBM, https://www.ibm.com/it-infrastructure/linux-servers (last visited Nov. 10, 2022).

[174] In the European Union, code required for interoperability is actually carved out of copyright. *See* Directive 2009/24, of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs, 2009 O.J. (L 111) 19. Arguably, "fair use" principles achieve a comparable result under U.S. law. *See* M. Lemley and P. Samuelson,

without the huge impediment of negotiating a license for every bit of code they wished to reuse. Writing software was understood (here again the political dimension) as requiring copying. Exclusive rights in an amorphous Platonic Work accorded to a supposed first author was immediately understood as being antithetical to this process.[175]

The solution was to turn copyright on its head through the creation of open-source licenses. Richard Stallman's GNU GPL[176] was an early and enduring version; it has since spawned literally scores of variants—the Creative Commons licenses, the Adobe license, the MIT license, etcetera, etcetera.[177] In each case, and to varying degrees, copyright in the Platonic Copyright Work is used not to define the reach of the original author's rights, but instead to limit the rights of any subsequent author or authors borrowing from the original—as we know, colloquially turning "copyright" into "copyleft." No statutory change or court decision was required to effect this result—it was done purely through the medium of private licensing.[178] The effect, though,

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Interfaces and Interoperability After Google v. Oracle (Stanford L. and Econ. Olin, Working Paper No. 562, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3898154.

[175] "Copying all or parts of a program is as natural to a programmer as breathing, and as productive. It ought to be as free." *See* Ray Wang, *20 Great Quotes from Richard M. Stallman*, CHALLENGE EVERYTHING! (Dec. 29, 2008), https://blogs.gnome.org/raywang/2008/12/29/20-great-quotes-from-richard-m-stallman/ (quoting Richard Stallman).

[176] *See Licenses*, GNU OPERATING SYS., https://www.gnu.org/licenses/licenses.html (last visited Nov. 10, 2022).

[177] *See generally Choose an Open Source License*, CHOOSEALICENSE.COM, https://choosealicense.com/ (last visited Jan. 28, 2024). Some of the more popular ones can be found here.

[178] In an "open source" license, the original copyright proprietor or proprietors grant a license to anyone, in exchange for an agreement to make the software available to anyone else subject to the same license terms. The terms can vary. At one extreme, one finds the GNU General Public License, *see* GNU OPERATING SYS., *supra* note 176, which places no restrictions on use or reproduction but can "infect" other software with which it operates with the same open terms. Creative Commons provides license term options ranging from essentially unrestricted to highly restricted (for example, prohibiting the creation of derivative works). *See About CC Licenses*, CREATIVE COMMONS, https://creativecommons.org/share-your-work/cclicenses/ (last visited Feb. 23, 2024). The Apache license, *see Software for the Public Good*, APACHE, https://www.apache.org (last visited Feb. 23, 2024), is considered to be at the opposite end of the scale from the GNU GPL in terms of risk to a user. *See generally Guide to Open Source Licenses*, SYNOPSIS (Oct. 5, 2016),

was the same—bringing copyright law into closer alignment with the underlying social and technological landscape. The moral: where copyright law conflicts with new, useful, and transformative technology, and one that is ubiquitous in the modern world, the law must give way.[179]

Another example of amendment of copyright by private law and practice, but this one pointing in the opposite direction, is found in the "terms and conditions of use" that purport to attach to and to bind people who purchase, download, or use computer software or access websites.[180] After a period of evolutionary development, these terms and conditions coalesced around a fairly standard set of provisions, all of which were designed to extend the software vendor's rights well beyond copyright and protect the vendor against all manner of liability: purported limits to "internal" or "non-commercial" use (whatever those are), interdictions on "reverse engineering" (whatever that is), indemnity against infringement conditioned so as to be useless to the indemnitee, disclaimers of virtually all warranties, draconian limits on liability, mandatory arbitration of disputes, etcetera. Valiant efforts were made to codify licensing, first as Article 2B of the Uniform Commercial Code, subsequently rebranded the Uniform Commercial Information Transactions Act ("UCITA"), but they failed.[181] One suspects that one of the reasons was that legislation was unnecessary: the private law of terms and conditions sufficed. They were sufficiently solicitous of the software vendors to satisfy their investors[182] and

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https://www.synopsys.com/blogs/software-security/open-source-licenses.html#.

[179] Another example in the patent realm is the development of standards-setting bodies, all of which have the characteristic of cross-licensing patented technology among members and often extending the members' licenses to third parties under "fair, reasonable and non-discriminatory" ("FRAND") terms, thus avoiding patent litigation that can hobble technology development. Unfortunately, standards-setting bodies can have the deleterious effect of creating exclusionary consortia of big players who can afford the price of admission.

[180] For more details on this evolution, *see generally* Thomas M. Hemnes, *Restraints on Alienation, Equitable Servitudes, and the Feudal Nature of Computer Software Licensing*, 71 DENV. U. L. REV 577 (1994).

[181] Article 2B was never enacted anywhere; UCITA was enacted only in Virginia and Maryland. *See Uniform Computer Information Transactions Act*, WIKIPEDIA, https://en.wikipedia.org/wiki/Uniform_Computer_Information_Transactions_Act (last visited June 18, 2021, 01:27 GMT).

[182] One of the fundamental parts of "due diligence" in any "M&A" transaction involving a software company is to review its license agreements

sufficiently irrelevant to software users to satisfy their technology subsistence needs.[183]

The court that matters here is the court of expectations and acceptance. Today, computer software and websites have taken on the character of a utility, much like the electricity that powers them. If the lights stay on and the price is tolerable, how many consumers bother to consider the laws and regulations governing access to electricity, notwithstanding the keen attention power companies pay to such laws and regulations? Likewise, software vendors and their investors pay keen attention to the same terms and conditions of use that are universally disregarded by their customers, so long as they do not interfere with access to and use of the software and websites they need. All that matters is reliability of the utility and an acceptable price. Electric utility companies are highly regulated by the government, and computer software and the internet by private arrangements,[184] but in practice, there is little difference. Where written law is sparse, political considerations, market forces, private law agreements, and most importantly, adherence to standard practice, fill the gap.

In this light, the rise and fall of copyright protection suggests that we need to expand our conception of what "law" is. In the halls of the "strict constructionists," there is a near-universal assumption that law consists solely of things written down—constitutions and

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for consistency with their now-standard requirements. Failure to adhere to these standards is bound, at best, to impact the acquisition price; at worst, it can easily "tank" the deal.

[183] The "privacy policies" associated with websites are yet another example. Unlike licensing, which was never effectively codified, privacy has been and continues to be over-codified, with every legislative body in the world clamoring to get into the act. The result has been such a welter of law and regulation that it is impossible, even for the largest and most amply represented corporations, to achieve 100% compliance. Again, private law has come to the rescue in the form of increasingly standardized privacy policies and practices that usually suffice, at least in the United States, as long as they are not too much at odds with public expectations. Europe is, of course, another matter, where a history of totalitarianism has bred a much stronger expectation of privacy and compliance with the GDPR, at least against US companies, zealously monitored by Maximilian Schrems and an army of determined regulators. Surely, however, this is another example of the intimate connection between social expectations and legal norms.

[184] Except for privacy issues, the internet and World Wide Web are governed to a very large extent by private consortia. *See Standards*, WORLD WIDE WEB CONSORTIUM, https://www.w3.org/standards/ (last visited Nov. 10, 2022).

statutes.[185] The less strict among us might include judicial opinions, but the universe is still quite limited and essentially self-referential. I submit that this is a fundamental error. As Justinian pointed out, written laws can be overturned by society; as we have observed, society can also impose its own law via practice, custom, private agreement, and expectation. Law, as I see it, comprises all the express, implied, habitual, and cultural influences that inform and regulate behavior in a society.[186]

This perspective has something in common with "legal realism," subject, however, to a couple of points of departure. First, "law," understood as general rules for behavior, is not confined to constitutions, statutes, and decisions of judges. As vividly evidenced by the printing press, the internet, the open-source movement, and the terms and conditions for the use of computer software and websites, large swaths of rule-making occur outside the realms of legislation and litigation, sometimes via technology, sometimes via private contract; other times via practice and habit. These may be reflected in statutes or in judicial decisions, but always in accepted standards of behavior. Second, law, as broadly understood, is never static. It evolves with the society, language, and culture[187] of which it forms a part. None of these can be understood without reference to the others.[188] I leave to the

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[185] Here, and in many other ways, I am indebted to Professor Merges' insight. *See, e.g.*, Robert P. Merges, *Forward to* THOMAS HEMNES, HOW LAW WORKS, at xii–xiv (Vernon Press 2020); *see generally* HEMNES, *supra* note 152, at ch. 4.

[186] Here, as elsewhere, I part ways with Messrs. Bellos and Montagu. Concluding their chapter "Copyright Overreach," in which they catalog the various predations of the "cooked-up culture of fear of infringement" on the creative process, they nevertheless conclude that "no reformation of copyright seems likely at all at present." BELLOS & MONTAGU, *supra* note 9, at 304. Quite to the contrary: copyright has been reformed, and continues to be reformed, if not by statute, then by private law, culture and practice

[187] I use the term "culture" in its anthropological sense, as one would use it to identify the Magdelenian or Aurignacian "cultures" of the Upper Paleolithic. Those cultures, like other prehistoric cultures, are defined as much by their tool kits as by their art. So also our culture can be defined by our tool kit, but in our case, the tools are linguistic and conceptual, as well as physical.

[188] It must be acknowledged that this view has troubling corollaries. Accepted standards in one culture or at one time can be inconsistent with, and can seem unjust or immoral in the light of, another culture or time. And if the shared standards, expectations, and language that define a culture disintegrate, then law does, as well. One fears that we may be witnessing such a disintegration in the United States at present, evidenced by the inability of

reader to consider whether these lessons reach beyond the narrow confines of copyright, on which we have focused.

VII. CONCLUSION

As we have seen, humans created works of the highest caliber for thousands of years without the benefit of anything like copyright law. The instigation for such a law was technological: the invention of the printing press in the Fifteenth Century, leading in England first to the Stationers' Monopoly, then to the Statute of Anne in 1710, followed by the first United States copyright act in 1790. These early legal structures regulated what the printing press could do—the making of copies. Nothing more seemed needed at the time. Certainly no Platonic abstraction like a copyright Work, disembodied from printed copies.

Then, culture stepped in. The Romantic era of the Nineteenth Century celebrated the unheralded genius unbound and uninfluenced by what came before. Combined with the decline of the system of patronage for artists, this demanded an expansion of the rights of creators, both to recognize their achievements and to provide adequate compensation for their efforts. So, copyright expanded incrementally during the Nineteenth and Twentieth Centuries to increase the rights and income of the individual, post-Classical creator. To do this, it needed to solve the riddle of how embodiments as disparate as piano rolls and digital files could be considered embodiments of the same thing. The solution was the Platonic copyright Work, something never seen in its entirety but manifest in copies—shadows on the wall—and, if we are right, defined by a function—the rules of infringement—creating in principle an infinite number of embodiments.

Today, the forces of culture and technology push in the opposite direction. Social media celebrates and encourages copying as the highest form of personal recognition. And the most useful technologies—Google searching and artificial intelligence training—depend on unbridled access to existing works. The expansive Romantic concept of a copyright Work will be seen as standing in the way of progress.

If our, Professor Silbey's and Mark Twain's analyses are correct, and if as Justinian observed, the law must bend to the will of the community and its technology and culture, then in coming decades, developments like social media, open source licensing, and GAI will

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opposing parties to effectively communicate even their differences to one another. As in any diseased but living organism, there remain some parts that continue to function, while others do not, but the longer term survival of the cultural organism depends on rejuvenation of the most vital parts, something that cannot be assured in advance.

expand the public domain and open ever-larger gaps in the infinite set that defines the copyright Work.[189] The expansive copyright Work, a linguistic and conceptual tool that emerged in the Nineteenth Century and peaked in the Twentieth, will have outlived its value. The great Thanksgiving feast served up by the Platonic Work will be reduced to a few plates, leaving room for more cooks in the kitchen of creativity. The copyright Work might survive, but as a vestige of an earlier time.

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[189] The set that we have defined as the copyright Work could still be infinite in principle, but the spaces between its members could grow larger and larger, leaving room in between for other creators. Some infinities are larger than others. *See* CALVIN. CLAWSON, MATHEMATICAL MYSTERIES 90–93 (1996).

VIII. APPENDIX A

Prompt: Write an essay on "Ontology of Copyright"

Email on March 15

Introduction: Copyright is a legal concept that protects the creative works of authors, artists, and other creators. It gives them exclusive rights to control the use and distribution of their works, ensuring that they receive appropriate compensation for their efforts. The ontology of copyright is the philosophical and conceptual basis for this legal concept. This essay will explore the ontology of copyright, its historical development, and its contemporary application.

Historical Development: The origins of copyright can be traced back to the early days of printing, when books and other printed materials were first produced on a large scale. Publishers began to recognize the value of protecting their works from unauthorized copying and distribution, and various legal frameworks were developed to provide this protection. In the early modern era, copyright law emerged as a distinct legal concept, with the Statute of Anne in 1710 often cited as the first copyright law.

Philosophical Basis: The ontology of copyright is grounded in the belief that creative expression is a form of personal property, and that creators have the right to control how their works are used and distributed. This belief is based on the idea that creative works are the product of the labor and skill of their creators, and that they have a natural right to control the use and distribution of their works. This natural right is recognized by various legal frameworks, including copyright law, which seeks to provide creators with the legal tools to protect their works and control their use.

Incentivizing Creativity: Another key aspect of the ontology of copyright is the recognition of the importance of incentivizing creativity and innovation. By providing creators with the ability to control the use and distribution of their works, copyright law encourages them to continue producing new and original works. This benefits society as a whole by promoting cultural diversity, creativity, and progress. It also helps to ensure that creators are able to earn a living from their work, which allows them to continue producing new works and contributing to the cultural and intellectual life of society.

Limitations and Exceptions: The ontology of copyright also recognizes that the protection of creative works is not absolute. Copyright law includes limitations and exceptions that allow for the fair use of copyrighted material for purposes such as criticism, comment, news reporting, teaching, scholarship, and research. These limitations and exceptions strike a balance between protecting the rights of creators and promoting the public interest in access to information and cultural expression. They also help to ensure that copyright law does not become overly restrictive, and that it continues to serve its intended purpose of promoting creativity and innovation.

Conclusion: In conclusion, the ontology of copyright is a complex and multifaceted concept that encompasses a range of philosophical and legal ideas. At its core, copyright is based on the idea that creators have a natural right to control the use and distribution of their works. This right is recognized by various legal frameworks, including copyright law, which seeks to provide creators with the legal tools to protect their works and control their use. The ontology of copyright also recognizes the importance of incentivizing creativity and innovation, while balancing the rights of creators with the public interest in access to information and cultural expression. Overall, the ontology of copyright reflects a complex interplay of legal, philosophical, and societal factors, and will continue to evolve and develop in response to changing social, technological, and cultural contexts.

IX. APPENDIX B

Email on March 27

Copyright is a legal and ethical concept that gives creators the exclusive right to control how their original works are used and distributed. The ontology of copyright is the study of the fundamental nature of copyright, including its essence, properties, and relationships to other legal and ethical concepts.

At its core, copyright is a form of property. Just as we can own physical objects like cars or houses, creators can own the intellectual property of their original works. Copyright grants creators the exclusive right to control how their works are reproduced, distributed, performed, and displayed. This right is meant to give creators the opportunity to profit from their works and to incentivize the creation of new works.

One of the key properties of copyright is that it is limited in duration. In most countries, copyright lasts for a fixed period of time after the creator's death. This means that copyright eventually expires, and works enter the public domain where they can be freely used by anyone. This is an important aspect of copyright ontology because it reflects a balance between the interests of creators and the interests of society as a whole.

Another important aspect of copyright ontology is the distinction between copyright and related concepts such as patents and trademarks. While all of these concepts deal with forms of intellectual property, they have different scopes and purposes. Patents, for example, are meant to protect inventions and processes, while trademarks are meant to protect branding and corporate identity. Copyright, on the other hand, is specifically designed to protect creative works such as literature, music, and art.

The ontology of copyright also includes ethical considerations. While copyright law grants creators exclusive rights over their works, it also recognizes certain limitations and exceptions that allow for broader use in certain circumstances. For example, the doctrine of fair use in the United States allows for limited use of copyrighted works for purposes such as criticism, commentary, news reporting, teaching, scholarship, and research. These exceptions reflect the importance of balancing the interests of creators with the interests of society as a whole.

In addition to legal and ethical considerations, the ontology of copyright also includes cultural and historical perspectives. Copyright law has evolved over time in response to changing technologies, social norms, and economic conditions. For example, the rise of digital media and the internet has challenged traditional notions of copyright and forced lawmakers to grapple with new forms of infringement and piracy. Understanding the historical and cultural context of copyright law is therefore an important part of its ontology.

In conclusion, the ontology of copyright is a complex and multifaceted subject that encompasses legal, ethical, cultural, and historical perspectives. Understanding the fundamental nature of copyright is important for creators, policymakers, and society as a whole, as it provides a framework for balancing the interests of creators with the broader public interest in the free exchange of ideas and culture.