A Unitary Progress Clause

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A Thesis submitted to
The Faculty of
The George Washington University
Law School
in partial satisfaction of the requirements
for the degree of Master of Laws
May 15, 2011

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Acknowledgements

The author wishes to thank his thesis advisor, John Duffy, for his advice and assistance throughout the writing process. The final product has been significantly improved as a result of his contributions and suggestions. I would also like to thank Michael Madison for his comments on the first full manuscript of this thesis.

Abstract

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Since around 1950, the Progress Clause of the Constitution has been read in a distributive manner. That is to say, it is read as granting two separate powers: the power to promote the progress of science through copyright, and the power to promote the progress of useful arts through patent. This dichotomy has led to some confusion in certain subject matter areas that span the two regimes, like architectural works, computer programs, and design patents. In addition, because the distributive reading effectively separates copyright and patent, this reading may undermine certain doctrines, such as copyright's secondary liability doctrine or the copyright misuse doctrine, that have evolved based on the presumed relationship between the regimes.

Rather than a distributed power, I suggest that the Progress Clause should be read as a unified power intended to promote the progress of science *and* useful arts. I arrive at this conclusion by applying two mechanisms of constitutional interpretation. First, I observe that the purely historical basis for the current reading does not convincingly support the distributive reading, but it is in fact very ambiguous. I argue that this ambiguity supports the unitary reading. Second, I suggest that the Supreme Court's recent analysis of the Second Amendment conclusively requires a unitary reading for the Progress Clause based on the structural similarities of the two constitutional provisions.

The unitary reading presents a more cohesive view of intellectual property law. It removes the foundations of criticism for mongrel subject matter and legitimizes the application of patent doctrine to copyright law. Importantly, it also helps clarify murky questions in patent law like subject matter eligibility.

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I. Introduction

The Progress Clause[1] grants Congress the power "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[2] The Progress Clause is the source of Congress's power to enact the patent and copyright laws. These laws are subject to the limitations of the Progress Clause.[3] For example, the Supreme Court has looked to the Clause to answer questions of patent eligibility,[4] copyright eligibility,[5] and copyright term extensions.[6] These issues are determined in large part by how the Progress Clause is read.

In 1949, Karl Lutz published an influential article arguing that the Progress Clause should be given a distributive reading.[7] Since that publication, the distributive reading has been embraced by scholars,[8] the legislature,[9] and the courts.[10]

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[1] The Progress Clause is known by several other names. *See* Dotan Oliar, *Making Sense of the Intellectual Property Clause: Promotion of Progress as a Limitation on Congress's Intellectual Property Power*, 94 GEO. L.J. 1771 (2006) (referring to the Progress Clause as the "Intellectual Property Clause"); John Tehranian, *Parchment, Pixels, & Personhood: User Rights and the IP (Identity Politics) of IP (Intellectual Property)*, 82 U. COLO. L. REV. 1, 9 (2011) ("copyright clause"); Karl B. Lutz, *Patents and Science: A Clarification of the Patent Clause of the U.S. Constitution*, 18 GEO. WASH. L. REV. 50 (1949) ("Patent Clause") [hereinafter, Lutz, *Patents and Science*]; Tyler T. Ochoa and Mark Rose, *The Anti-Monopoly Origins of the Patent and Copyright Clause*, 49 J. COPYRIGHT SOC'Y U.S.A. 675 (2002) ("Patent and Copyright Clause") [hereinafter, Ochoa & Rose]. Of these other names, only the "Patent and Copyright Clause" is technically correct as the Clause addresses patent *and* copyright, but not other forms of intellectual property. This article will therefore refer to the Progress Clause.

[2] U.S. CONST. Art. I, § 8, cl. 8.

[3] *See, e.g.*, Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 5-6 (1966).

[4] Bilski v. Kappos, 130 S.Ct. 3218, 3231-57 (2010) (Stevens, J., concurring) (discussing the "constitutional moorings" of patent law in assessing patent eligibility).

[5] Feist Publications, Inc. v. Rural Telephone Service Co., Inc., 499 U.S. 340, 347 (1991) (noting that originality is a constitutionally-mandated requirement in copyright law).

[6] Eldred v. Ashcroft, 537 U.S. 186 (2003) (addressing the constitutionality of copyright term).

[7] Lutz, *Patent and Science*, *supra* note 1, at 51; *see also* Karl B. Lutz, *Are the Courts Carrying Out Constitutional Public Policy on Patents?*, 34 J. PAT. OFF. SOC'Y 766, 789 (1952) ("This is indeed a perversion of the Constitution....If they were really interested in ascertaining the original meaning of the Constitutional clause why did they not take a serious look into history? Had they done so they would have

Accord to Lutz, the Progress Clause should be given a distributive reading. This reading extracts two separate clauses or powers from the Progress Clause. The first is the copyright power: to promote the progress of science by securing for limited times to authors the exclusive right to their respective writings. The second is the patent power: to promote the progress of the useful arts by securing for limited times to inventors the exclusive right to their discoveries.

This article presents a long overdue response to Lutz's arguments. Through historical and constitutional examination, this article concludes that the distributive reading may not be entirely correct. The article does not argue that the distributive reading is incorrect, *per se*. Instead, it argues that historical evidence and constitutional analysis better support a modified reading of the Progress Clause – a reading which this article will refer to as the "unitary" reading.

The unitary reading regards the Progress Clause as a single clause, intended to promote the progress of science *and* useful arts. The unitary clause contains two "branches," one that allows Congress to secure writings to authors (through copyright)

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found that the word 'science' belongs with the copyright clause....") [hereinafter, Lutz, *Public Policy*].

[8] *See, e.g.*, 1 DONALD S. CHISUM, CHISUM ON PATENTS § 2 (Matthew Bender & Co. ed., 2004) ("The clause intermixes copyright and patent concepts. The patent concepts are 'useful arts', 'inventors' and 'discoveries.'"); 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 1.03 (generally associating "science", "authors" and "writings"); Kenneth J. Burchfiel, *The Constitutional Intellectual Property Power: Progress of Useful Arts and the Legal Protection of Semiconductor Technology*, 28 SANTA CLARA L. REV. 473, 501 (1988); Giles S. Rich, *Principles of Patentability*, 28 GEO. WASH. L. REV. 393 (1960).

[9] *See, e.g.*, H. Comm. on the Judiciary, 82d Cong., Revision of Title 35, United States Code "Patents" 4 (Comm. Print 1952); S. Comm. on the Judiciary, 82d Cong., Revision of Title 35, United States Code, 3 (Comm. Print 1952).

[10] *See, e.g.*, Eldred v. Ashcroft, 537 U.S. 186, 192-93 (2003) ("The [Progress Clause] provides as to copyrights: 'Congress shall have Power…[t]o promote the Progress of Science…by securing [to Authors] for limited Times…the exclusive Right to their…Writings."); *In re* Comiskey, 554 F.3d 967, 976 (Fed. Cir. 2009) ("[The Progress Clause] limit[s] the subject matter eligible for patent protection to the 'useful Arts.'").

and one that allows Congress to secure discoveries to inventors (through patent). The result of this reading is that patent and copyright remain conceptually independent but operate together to promote the progress of science and the useful arts. The unitary reading represents only a slight theoretical shift from the currently accepted scheme, but its implications better explain the evolution of modern intellectual property law and provide clear answers to some of intellectual property's murkier questions.

This article proceeds as follows. Part II presents the history of, and reasoning behind, the distributive reading. Based on the justifications offered to support the reading, Part II concludes that the distributive reading is grounded in some form of original intent or original understanding of the Clause. Through a historical examination, Part III delves further into relevant evidence of original meaning and intent. It concludes that, while some of this evidence adequately supports a distributive reading, the weight of the evidence better supports with a unitary reading. Part IV adopts recent constitutional jurisprudence to demonstrate that the historical evidence presented in Part III demands a unitary reading of the Progress Clause. Part IV also lays out this new reading of the Progress Clause based on the foregoing construction. As further support for the paradigmatic shift of the proposed reading, Part V shows that, with one glaring exception, modern patent and copyright laws have evolved in conformity with the proposed unitary reading. Part VI concludes this article.

II. The Distributive Reading of the Progress Clause

The distributive reading of the Progress Clause is a relatively recent development in patent law. It was first mentioned, in passing, in the dissent of a mid-nineteenth

century Supreme Court copyright decision.[11] It appears to have gone unmentioned again until 1925.[12] Even then, the distributive reading went largely unrecognized by the legal community.

The distributive reading, in its present form, "was propagated by an influential article and consequently adopted by practically all members of the legal community… [It] has become the accepted wisdom regarding the textual structure of the Clause."[13] This Part traces the evolution of this theory from its roots to its final form in order to ascertain the interpretive underpinnings of the distributive reading.

a. Justice Thompson's Dissent in *Wheaton v. Peters*

The first mention of a distributive reading occurred in Justice Thompson's dissent in the famous 1834 Supreme Court copyright decision *Wheaton v. Peters*.[14] Justice Thompson's reference to the distributive reading arose in an argument over the definition of the word "securing" in the Progress Clause.[15] The Court was addressing the question of whether copyright was entirely statutory, or whether there was a common law copyright in the United States.[16] The Court held that there was a common law right to unpublished works,[17] but that there was no such right in published works.[18]

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[11] *See* Wheaton v. Peters, 33 U.S. (8 Pet.) 591, 684 (1834) (Thompson, J., dissenting)

[12] *See* RICHARD C. DE WOLF, AN OUTLINE OF COPYRIGHT LAW 15 (1925).

[13] Dotan Oliar, *The (Constitutional) Convention on IP: A New Reading*, 57 UCLA L. REV. 421, 463-64 (2009) [hereinafter, Oliar, *Convention*].

[14] 33 U.S. 591.

[15] *See generally Wheaton*, 33 U.S. at 684 (Thompson, J., dissenting).

[16] *See id.* at 654.

[17] *Id.* at 657 ("That an author, at common law, has a property in his manuscript… cannot be doubted; but this is a very different right from that which asserts a perpetual and exclusive property in the future publication of the work, after the author shall have published it to the world.").

[18] *Id.* at 661 ("Congress, then, by this act, instead of sanctioning an existing right, as contended for, created it.").

Justice Thompson used the "distributive" reading of the Progress Clause to distinguish between the origins of copyright and patent.[19] His proposition seems largely rooted in the fact that patent and copyright were legislated differently from the outset.[20] Justice Thompson believed that the statutes themselves spoke to a difference between the laws. The statutes indicated that patent law is created solely by statute[21] whereas the copyright laws merely secure an existing right.[22]

b. Richard de Wolf and Karl Lutz

The next step in the evolution of the distributive reading went relatively unnoticed. In 1925, Richard De Wolf made an observation "which appears not to have had the attention of any court."[23] He noted that the Progress Clause is "an example of the balanced style of composition so much used in the days of the colonial worthies."[24] He noted further that the word "science," as used when the Constitution was adopted, meant learning generally, not the natural sciences we think of today.[25] Based on the language and format of the Progress Clause, De Wolf concluded that it must have been intended to provide separately for science and useful arts.

Although de Wolf's proposal went largely unnoticed, the distributive reading was

[19] *See id.* at 684 (Thompson, J., dissenting) ("It has been argued at the bar, that as the promotion of the progress of science and the useful arts, is here united in the same clause in the constitution, the rights of authors and inventors were considered as standing on the same footing; but this, I think, is a non sequitur.").

[20] *Wheaton*, 33 U.S. at 684 (Thompson, J., dissenting) ("Th[e Progress Clause] is to be construed distributively, and must have been so understood; for when congress came to execute this power by legislation, the subjects are kept distinct, and very different provisions are made respecting them.").

[21] *Id.* (the patent law "clearly impl[ies] that the whole exclusive right is created by the [statute]").

[22] *Id.* at 685 ("All the laws on [copyright] purport to be made for *securing* to authors and proprietors such copyright.") (emphasis in original).

[23] De Wolf, *supra* note 12, at 14.

[24] *Id.* at 15.

[25] *Id*.

apparently more appealing in 1949. That year saw the publication of the first of a pair of influential articles by Karl B. Lutz[26] that would lead to the emergence of the distributive reading as the "accepted wisdom regarding the textual structure of the clause."[27]

Lutz presented the distributive reading with the same justification as De Wolf – namely, the balanced sentence.[28] He added further support to his reading by noting that Thomas Jefferson had himself used the word science to mean general learning, albeit after the signing of the Constitution.[29] Under the balanced sentence structure, then, copyright was intended to promote the progress of learning in general while patent was intended to promote the progress of the useful arts.

Lutz further supported his argument on the basis of an abandoned bill of unknown substance from the first session of Congress which had a title identical to the language of the Progress Clause.[30] The bill passed on its first reading, but died at the adjournment of the first session.[31] At the opening of the second session of Congress, it was decided that the copyright and patent laws would be provided for separately, and this separation is offered by Lutz as justification for the distributive reading of the Progress Clause.[32]

Lutz continued in this vein, offering several other observations in order to account for the distributive reading he proposed. For example, Rep. Burke stated that copyrights

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[26] *See* Lutz, *Patents and Science*, *supra* note 1. *See also* Karl B. Lutz, *Are the Courts Carrying Out Constitutional Public Policy on Patents?*, 34 J. PAT. OFF. SOC'Y 766 (1952).

[27] *See* Oliar, *Convention*, *supra* note 13, at 463-64 (describing the Lutz articles as the impetus for general adoption of the distributive reading).

[28] *See* Lutz, *Patents and Science*, *supra* note 1, at 51.

[29] *Id.* at 51-52 (noting that Jefferson had, in 1799, referred to "government, religion, morality, and every other *science*.") (emphasis added).

[30] *Id.* at 52.

[31] *Id.*

[32] *Id.*

could be easily dealt with as it was easy to acquire literary property.[33] Apparently inventions, on the other hand, were not as simple a subject. Lutz also examined the legislative history of the patent laws over the next century. He observed that "Congress only once … including the word 'science'" in the patent laws, and that this inclusion was accidental.[34] This statement is incorrect as a matter of fact: the word "science" occurred once in the 1793 Patent Act, which replaced the original Act passed only three years earlier, and twice in the 1836 Patent Act.[35] The 1836 amendment not only retained the original reference to science, but *added* an additional reference. This tends to indicate that the inclusion of the word "science" was not the accident Lutz contends. Lutz further stated that there is no evidence from the Constitutional Convention to indicate that patents were intended to extend from their "traditional field" of useful arts and into "science."[36]

Given the timing of Lutz's publication, it seems quite plausible that this widespread acceptance – after the same position had been put forth twice before – was rooted largely in the prevailing anti-patent sentiment of the period. Surprisingly, the

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[33] *Id.*

[34] *Id.* at 53.

[35] *See* Patent Act of 1793, Ch. 11, 1 Stat. 318-323, § 3 (Feb. 21, 1793), *available at* http://www.ipmall.info/hosted_resources/lipa/patents/Patent_Act_of_1793.pdf [hereinafter, 1793 Patent Act]; Patent Act of 1836, Ch. 357, 5. Stat. 117, §§ 6, 7 (July 4, 1836), *available at* http://www.ipmall.info/hosted_resources/lipa/patents/Patent_Act_of_1836.pdf [hereinafter, 1836 Patent Act].

[36] *Id.* at 54:

> Certainly there is nothing in the historical background to provide the Constitutional Convention with a motive for suddenly expanding the Anglo-American concept of patents to include 'science' as we use that term today. Lacking such evidence, we must assume that the Convention intended to have patents stick pretty closely to their tradition field as included in the phrase 'useful arts.'

As discussed below, this statement is not entirely correct. There is indeed evidence from the Constitutional Convention and shortly thereafter that implies an intention that copyrights and patents both be used to encourage the progress of science *and* the useful arts. *See infra* part III.B.

acceptance of the distributive reading – at the specific point in history where it took hold – has not been widely questioned. Perhaps it should have been, as the courts of this era were notorious for their anti-patent sentiment.[37] Justice Jackson described the general disposition best: "the only patent that is valid is one which th[e Supreme] Court has not been able to get its hands on."[38]

Justice Jackson was not exaggerating. Between the mid-1930s and 1950, the Supreme Court found patent after patent invalid.[39] The Court even made sure to open the door to the government invalidating patents under the guise of actions under the Sherman Antitrust Act, even though the "issue need not be decided to dispose of th[e] case" in which that door was opened.[40]

The distributive reading inherently restricts the scope of patent law by withdrawing "science" from its protection. Given the judicial sentiment against strong patent rights, general acceptance of a Constitution-based doctrine that withdrew "science" from patent's protection should come as no surprise. And it should come as no surprise that the justifications of a popular theory were accepted with little examination.

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[37] George E. Frost, *Judge Rich and the 1952 Patent Code – A Retrospective*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 343, 343 (1994) ("The Supreme Court … was conspicuously anti-patent and became progressively more hostile through the 1940's."). *See also* ROBERT PATRICK MERGES, PATENT LAW AND POLICY 8-9 (1992).

[38] Jungersen v. Ostby & Barton Co., 335 U.S. 560, 572 (1949) (Jackson, J., dissenting).

[39] For Supreme Court cases from this period holding patents invalid, *see, e.g.*, Altoona Publix Theatres, Inc. v. American Tri-Ergon Corp., 294 U.S. 477 (1935); Union Carbon Co. v. Binney & Smith Co., 317 U.S. 228 (1942); Universal Oil Products Co. v. Globe Oil & Refining Co., 322 U.S. 471 (1944); Dow Chemical Co. v. Halliburton Oil Well Cementing Co., 324 U.S. 320 (1945); Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127 (1948); *Jungerson*, 335 U.S. 560 (1949); Great Atlantic & Pac. Tea Co. v. Supermarket Equipment Corp., 340 U.S. 147 (1950).

[40] *See* U.S. v. U.S. Gypsum Co., 333 U.S. 364, 387 (1948). U.S. Gypsum had admitted at the trial level that the challenged licensing agreement would violate the Sherman Act if its patents were invalid. *Id.* at 386. The government sought to amend its complaint to allege invalidity, and the trial court had ruled that the government could not do so. *Id.* at 387. Although the Supreme Court felt the issue "need not be decided," it still decided the issue – and held that the government can attack the validity of patents it had issued. *Id.*

Although the de Wolf and Lutz arguments were limited to patent, it should be noted that, under their reading, the converse was true as well: copyright could not protect useful arts.

c. Interpretive Justifications for the Modern Distributive Reading

Justice Thompson's reading was based in the statutory provisions for the two laws, rather than the constitutional language authorizing them. He was not questioning the intent of the Framers, but was instead examining the legislature's understanding of the Progress Clause. The Justice seemingly found enough support in the statutory separation of the two laws to necessitate a distributive reading under a form of original understanding.

De Wolf's argument, unlike Justice Thompson's, was rooted in the alleged intent of the Framers. He presumed that, since the balanced sentence was "so much used" at the time of the framing of the Constitution, the Framers must have intended the Progress Clause be read in distribution. Further, the Framers had used distinguishable words – science and useful arts – to draw a line between what should be protected by copyright and what should be protected by patent.

Justice Thompson's examination of the understanding of the Clause and De Wolf's intent-based argument were seemingly unpersuasive on their own, as the distributive reading was not widely adopted after either presentation. Lutz's conclusion was merely a combination of the two prior justifications for the distributive reading. When combined by Lutz, these two arguments became the basis for the generally accepted reading of the Progress Clause. It must therefore be assumed that it is a combination of both original intent *and* original understanding that formed an adequate basis for the widespread adoption of the distributive reading of the Progress Clause.

III. The History of Patent and Copyright Laws

There are several varieties of "originalist" constitutional interpretation. According to one scholar, there are at least four types of originalist: those who emphasize (1) original text, (2) original intentions, (3) original understandings, or (4) original values.[41] The differences between these modes of interpretation are largely irrelevant for present purposes. For the purposes of this article, these modes boil down largely to two questions: (1) how was the Progress Clause originally understood (or what did people take it to mean); and (2) what was the intent of the Framers in writing the Clause.

It is clear that the distributive reading of the Progress Clause is rooted in a combination of these two questions. Justice Thompson's interpretation is rooted in how contemporaries of the Framers understood and applied the Progress Clause. De Wolf, on the other hand, based his argument largely on what happened *before* the Framing. His argument was an intent-based one. Lutz's theory, as a combination of the two, is seemingly rooted in both modes of constitutional interpretation.[42]

History provides valuable insights into the answers to both of these questions, with respect to both patents and copyrights. This Part delves into that history. It examines the relevant history both prior to the Constitution and shortly after ratification, and

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[41] *See* Richard S. Kay, *"Originalist" Values and Constitutional Interpretation*, 19 HARV. J.L. & PUB. POL'Y 335, 336-40 (1996). *See also* MICHAEL PERRY, THE CONSTITUTION IN THE COURTS: LAW OR POLITICS? 54 (1994) (using interpretive discretion to distinguish his version of originalism (weak) from judicial minimalism (strong)); Paul Brest, *The Misconcerned Quest for the Original Understanding*, 60 B.U. L. REV. 204, 204-05 (1980) (distinguishing strict from moderate originalism); Martin S. Flaherty, *The Most Dangerous Branch*, 105 YALE L.J. 1725, 1746 (1996) (distinguishing among right originalists, left originalists, historicists, and those who privilege original intent); David Couzens Hoy, *A Hermeneutic Critique of the Originalism/Nonoriginalism Distinction*, 15 N. KY. L. REV. 479, 484-85 (1988) (distinguishing between strong, moderate, and weak originalism, using interpretive discretion as the salient characteristic); Cass R. Sunstein, *Five Theses on Originalism*, 19 HARV. J.L. & PUB. POL'Y 311, 312-13 (1996) (describing hard and soft originalism).

[42] *See* Oliar, *Convention*, *supra* note 13, at 469 (stating that "the only basis provided for the disjunctive reading has been original intent and understanding").

concludes that the history supports a unitary reading at least as strongly as a distributive reading.

a. Pre-Ratification History of Patent and Copyright Laws

The Progress Clause of the Constitution was not created in a vacuum. Patent and copyright laws had existed for centuries before the United States began its transition to the federal form of government.[43] Indeed, the language of the Progress Clause hints at the Framers' intent to follow English practices.[44] Due to the presumptive familiarity of delegates to the Constitutional Convention with English precedent,[45] these precedents are as good a starting point as any in determining what the Framers' intentions may have been.[46]

i. English Precedent

1. "Industrial" Letters Patent and the Statute of Monopolies

In 1331, King Edward III granted the first industrial "letter patent" to John Kempe of Flanders.[47] This and letters patent like it were granted as protection for foreigners

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[43] Edward C. Walterscheid, *To Promote the Progress of Science and Useful Arts: The Background and Origin of the Intellectual Property Clause of the United States Constitution*, 2 J. INTELL. PROP. L. 1, 2 (1994) [hereinafter, Walterscheid, *Background*].

[44] *See id.* at 34 (the language in the Progress Clause seems to have been guided by a "desire to follow the English practice of granting exclusive rights through the issuance of patents or a similar device.").

[45] *See id.* at 37 (stating that delegates were familiar with the Statute of Monopolies). *See also* Morgan Sherwood, *The Origins and Development of the American Patent System*, 71 AM. SCI. 500, 500 (1983) (claiming Framers adopted patent system due to familiarity with English precedent).

[46] For detailed histories of the English precedents, *see generally* Walterscheid, *Background*, *supra* note 43; Ochoa & Rose, *supra* note 1. Both provide significant background on the precedent relevant to the Progress Clause.

[47] *See* Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550-1800*, 52 HASTINGS L.J. 1255, 1259 (2001) (citing Pat. 5 Edw. III, p. I, m. 25 (1331)) [hereinafter, Mossoff, *Development*].

willing to come to England to train English subjects in the foreigners' trades.[48] Kempe, for instance, was a weaver by trade.[49] The patent to Kempe was the first step in a "deliberate and vigorous policy to expand English industry which Edward III and his successors pursued with excellent results."[50]

British monarchs did not begin issuing letters patent for domestic manufacturing monopolies within England until the mid-sixteenth century.[51] The first such domestic industrial patent was granted to Henry Smyth in 1552 for the production of Normandy glass.[52] Following such practice, Queen Elizabeth I granted fifty-five patents during her reign over the latter half of the sixteenth century.[53] At least one of these early patents explicitly referred to "science" as the foundation for the protected innovation.[54]

Challenges raised to some of these patents foreshadowed modern patent issues. Several cases, for example implicated what are essentially questions of novelty and

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[48] *Id.*

[49] LIÊN BICH LUU, IMMIGRANTS AND THE INDUSTRIES OF LONDON, 1500-1700, 54 (1967).

[50] Ramon A. Klitzke, *Historical Background of the English Patent Law*, 41 J. PAT. OFF. SOC'Y 615, 625 (1959).

[51] Mossoff, *Development*, *supra* note 47, at 1260.

[52] *See* Klitzke, *supra* note 50, at 629. The patent stated that Smyth was to introduce:

> brode glasse of like fasshion and goodes to that which is commonly called Normandy glasse which shall not only be a great commoditie to our said realme and dominions but also bothe in the price of the glasse aforesaid and otherwise a benefite to our subjectes and besydes that dyvers of theym maye be sett to worke and get their lyvying and in tyme learne and be hable to make said glasse them selfe and so from tyme to tyme instructe the others in that science and feate.

[53] Mossoff, *Development*, *supra* note 47, at 1262. For a list of patents granted by Queen Elizabeth, *see* Edward Wyndham Hulme, *The Early History of the English Patent System*, 3 SELECT ESSAYS IN ANGLO-AMERICAN LEGAL HISTORY 117, 122-138 (1909) [hereinafter, Hulme, *Early History*]. This essay was first published in four parts in the Law Quarterly Review, 1896-1902, vols. XII, 141-154, XIII, 312-318, XVI, 44-56, XVIII, 280-288, and was revised and condensed for the SELECT ESSAYS collection.

[54] *See* Hulme, *Early History*, *supra* note 53, at 137 (citing Edward Wright's patent for "[a]nother water-raising device, obtained 'by long and painful study of the mathematical sciences'"). Admittedly, the actual device is clearly among the "useful arts," but the fact remains that the patent's language states that it was a work of science being protected.

obviousness.[55] As the law evolved, patents became subject to certain conditions. The patentee must: (i) work the patent; (ii) not interfere with established industries; and (iii) train apprentices.[56]

Despite Queen Elizabeth's efforts at stimulating domestic industry,[57] and her initial adherence to the conditions for patent grant,[58] she began to use the patent power in a manner inconsistent with the original purpose or conditions of patent. Indeed, as she saw it, "her Prerogative Royall may not be called in question for the valliditie of the letters patents."[59] One of the most egregious instances of Queen Elizabeth's abuse was a patent granted to Edward Darcy in 1598 for the manufacture, importation and sales of playing cards.[60] The King's Bench held the patent invalid in the landmark case *Darcy v. Allen*[61] ("*The Case of Monopolies*"). The grounding of that decision, like others before it,

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[55] *See*, *e.g.*, 17 CHARLES VINER, A GENERAL ABRIDGEMENT OF LAW AND EQUITY 210-11 (2d ed., 1793) (citing Mathey's case, Noy 113). Viner's Abridgement summarized Matthey's case thusly:

> So where a patent was granted to A. for the sole making of knives with bone hafts, and plates of lattin; because, as the patents suggested, he brought the first use thereof from beyond seas; yet nevertheless, when the wardens of the company of cutlers shewed before some of the council, and some learned in the law, that *they used to make knives before, though not with such hafts*; and that *such a light difference or invention should be no cause to restrain them*; thereupon he could never have benefit of this patent, although he laboured very greatly therein.

It is worth noting that the actual date of Mathey's case is unknown. What is known, though, is that the case addressed Elizabeth's 25th patent, granted in 1571. *See* Mossoff, *Development*, *supra* note 47, at 1262 n.29. Following Mathey's case, Bircot's case resolved that "no old manufacture in use before can be prohibited." 3 EDWARD COKE, INSTITUTES OF LAW IN ENGLAND 183 (1797) (1644).

[56] Mossoff, *Development*, *supra* note 47, at 1261.

[57] Edward C. Walterscheid, *The Early Evolution of the United States Patent Laws: Antecedents (Part 2)*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 849, 855 (1994) [hereinafter, Walterscheid, *Evolution*].

[58] Mossoff, *Development*, *supra* note 47, at 1262.

[59] Walterscheid, *Evolution*, *supra* note 57, at 863 (citing E. B. INLOW, THE PATENT GRANT 21 (1950)).

[60] *See* Hulme, *Early History*, *supra* note 53, at 137-38.

[61] 74 Eng. Rep. 1131 (K.B. 1603).

was the modern issue of novelty.[62]

In the *Case of Monopolies*, Allen did not argue against subject matter, which is telling because the machines used to make the cards and the materials themselves were not subject to the patent – paper itself was not protected, nor was the machine used to manufacture the paper. For all practical purposes, this meant that the patent protected *the markings on the cards*. Such markings are part of what modern law refers to as expressive content, and the protection of such by patent was not challenged in the litigation.[63]

English monarchs continued to abuse the patent power after the *Case of Monopolies* was decided.[64] The Statute of Monopolies was enacted in 1623 as a response to the monarchy's ongoing abuse.[65] The Statute broadly declared monopolies invalid. This Statute was regarded as "the first and final source of authority" on the subject of patents in England (and its colonies) from the seventeenth century onwards.[66]

The Statute of Monopolies included several exceptions where monopolies might be found valid. The most commonly cited exception with respect to patent law stated that a monopoly could be appropriately granted for the "sole Working or Making of any

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[62] *See id.* at 1139. Allen's counsel argued:

> [W]here any man by his own charge and industry, or by his own wit or invention doth bring any new trade into the realm, or any engine tending to the furtherance of a trade that never was used before; and that for the good of the realm; that in such cases the King may grant to him a monopoly patent for some reasonable time, until the subjects may learn the same, in consideration of the good that he doth bring by his invention to the commonwealth; otherwise not.

[63] This may in fact be because printing patents – addressed below, *infra* Part III.A.1.b – were well-established at the time of the *Darcy* case.

[64] Ochoa & Rose, *supra* note 1, at 679; Mossoff, *Development*, *supra* note 47, at 1270.

[65] 21 Jac. I, c. 3 (1623) [hereinafter, Statute of Monoplies].

[66] E Wyndham Hulme, *The History of the Patent System under the Prerogative and at Common Law*, 12 L. Q. R. 141, 142 (1896) [hereinafter, Hulme, *Prerogative*].

Manner of new Manufactures."[67] While the Crown continued to grant "industrial" patents through this exception, the story of patent is not limited to these patents, or this exception.

2. Printing Patents and the Stationer's Company

Two other exceptions to the Statute of Monopolies are relevant to the history of the Progress Clause, though they are not given the same deference as the manufacturing exception in patent scholarship. These exceptions applied to Crown-chartered guilds[68] and to printing patents.[69] The background of these two exceptions is just as pertinent to the Progress Clause as that of industrial letters patent, especially because they arose under the "first and final source" on English *patent* law but were essentially two *copyright* exceptions.

The Stationers' Company was one of many crown-chartered guilds in sixteenth-century London. The history of the guild runs to 1403, but it was not until May 4, 1557 that the Stationers' Company was chartered.[70] Although the Stationers' Company was relatively unimportant compared to other London companies,[71] the Stationers would exercise a degree of monopoly far beyond that which other companies achieved – largely due to the government's desire to control the press.[72] Although the Company's power was generally limited geographically, its charter gave it nearly a complete monopoly over

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[67] Statute of Monopolies at § 6.

[68] *Id.* at § 9.

[69] *Id.* at § 10.

[70] LYMAN RAY PATTERSON, COPYRIGHT IN HISTORICAL PERSPECTIVE 28-29 (1968).

[71] MARJORIE PLANT, THE ENGLISH BOOK TRADE 127 (1939).

[72] PATTERSON, *supra* note 70, at 30.

printing.[73] This power would make the Stationers' Company the "focal point of the history of copyright."[74] This focus developed through the Stationers' clever exploitation of two privileges: the "copyright" developed under the Stationers' charter and the royal printing patent.

Stated succinctly, the stationer's copyright was a right recognized by members of the company that entitled one who published a work to prevent unauthorized printing of the same work.[75] The key point to be taken from the stationer's copyright at this juncture is that it was wholly independent from the printing patent, but that it was a monopoly within the "Crown-chartered guilds" exception to the Statute of Monopolies, the statute typically treated as addressing the *patent* law.

The other relevant exception to the Statute of Monopolies was the exception for printing patents. Despite the Stationers' efforts to control printing through their copyright, the first book printed with sovereign privilege was printed in either 1512 or 1518.[76] One of these appears to be the first granted print patent. Notably, both of these *domestic* English printing patents were granted almost half a century before the Smyth patent, the first domestic English industrial patent.

Printing patents came in two flavors. General printing patents covered a class of works like law books, while a particular printing patent covered a specific work.[77]

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[73] *Id.* at 32.

[74] *Id.* at 28.

[75] *Id.* at 43-44.

[76] *See* THOMAS LINACRE, LINACRI PROGYMNASMATA GRAMMATICES VULGARIA *colophon* (London, Johan Rastell c. 1512) ("Emprynted in London on ye sowth syde of paulys by Johan Rastell with ye priuylege of our most suuerayn lord kyng Henry the. viii. grauntyd to the compiler therof. that noo man in thys hys realme sell none but such as the same compyler makyth pryntyd for ye space of ii. yeare."); PATTERSON, *supra* note 70, at 42 (stating that the first printing patent was granted in 1518).

[77] *Id.* at 79.

Particular printing patents therefore limited the reproduction of specific works, such as *A B C with the Little Catechism* and *Cosmographical Glass*.[78]

Printing patents were granted under the same royal prerogative as industrial patents, and indeed, there appears to be little to distinguish between the two patents, save their subject matter.[79] Printing patents appear to be merely an aspect of the original patent system, which was intended to encourage industrial development.[80]

This close relationship appears to have been recognized by the Stationers' Company. Indeed, as hinted to above,[81] it appears that the Stationers' viewed the playing-cards patent in the *Case of Monopolies* as a *printing* patent, despite the fact that suit was brought as if the patent was industrial.[82] This belief was echoed by at least one modern scholar, who called the patent at issue in the *Case of Monopolies* a "fusion" of printing and industrial patents.[83]

Although printing patents were in fact *patents*, there was a great deal of overlap between printing patents and copyrights. A 1582 report on printing patents referred to the rights possessed by printing patentees as "Copies."[84] The stationer's copyright also controlled "copies."[85] The major difference was that the printing patent was a copyright

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[78] *See id.* at 40; *id.* at 79.

[79] *Id.* at 82 ("the nebulous nature of the prerogative makes it difficult to distinguish the basis of the printing patent from the basis of the industrial patent."); *id.* at 84.

[80] *Id.* at 82.

[81] *See supra* notes 60-63 and accompanying text.

[82] PATTERSON, *supra* note 70, at 84-85.

[83] *Id.* at 84.

[84] *Id.* at 36.

[85] *Id.* at 46.

granted by the sovereign,[86] while the stationer's copyright was a private copyright.[87] This distinction led to many of the other differences.[88] Despite these differences, the fact remains that the printing patent and the stationer's copyright performed essentially the same function on essentially the same subject matter.[89]

In fact, it appears that the stationer's copyright would not have adequately prevented competitive publication *without* the printing patent.[90] Even as the Stationers developed their copyright, they actively pursued legislation that would allow them to patent copies of books.[91] For a time after the stationer's copyright became an established privilege, the printing patent remained the preferred form of protection.[92] It can therefore accurately be said that if patent law had not laid the foundation for copyright, copyright would not likely exist, at least in the form it does today.

Even after copyright had become an established privilege, printing patents were used to prevent unauthorized copying. At times, cases arose where the printing patent and stationer's copyright were held by different parties. In such instances, the printing patent prevailed.[93]

Due to the exceptions for Crown-chartered guilds and printing patents, these two

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[86] *Id.* at 78.

[87] *Id.* at 79.

[88] PATTERSON, *supra* note 70, at 79.

[89] *Id.* at 80.

[90] *Id.* at 90-91.

[91] *Id.* at 104. In 1584, the Stationers initiated their efforts to convince the Star Chamber to secure protection by legislation. In 1586, a petition was submitted to the Star Chamber entitled "The Arguments of the Patentees in Favour of Privileges for Bookes." The petition specifically referred to "Authors" and "Copie[s]." *Id.* at 104-105.

[92] *Id.* at 78.

[93] *Id.*

rights – the stationer's copyright and the printing patent – survived the enactment of the Statute of Monopolies. Not only did the Statute of Monopolies – a *patent* statute[94] – retain the stationer's copyright, but it explicitly referred to printing patents.

This history shows that one of the two English statutes relevant to the Progress Clause actually supported the use of patents to restrict dissemination of literary copies in order to induce industrial development. At its most basic, the printing patent acted as a copyright. Patent was, from its very first domestic use in England, applied to what the Framers called "science," or what is called "expression" today, yet it was still a patent. Furthermore, patents on expression were understood to promote *industrial* progress.[95]

3. The Statute of Anne

It is only necessary to briefly address the Statute of Anne here. Unlike the Statute of Monopolies and the history associated with it, the Statute of Anne provides little insight into the constitutional question at issue. As enacted, the Statute of Anne only applied to the new "statutory" copyright and the stationer's copyright.[96]

While it appears that the Statute of Anne was essentially a codification of the stationer's copyright that provided a limited term for the copyright,[97] the printing patent was not changed by the Statute of Anne. Admittedly, the printing patent was of relatively

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[94] *See supra* notes 64-66 and accompanying text. It was the unfettered granting of royal patents that led to the Statute of Monopolies, and that statute has been viewed largely as a patent act since then.

[95] The Crown was not alone in recognizing the value of using patents to encourage industry. *See* PATTERSON, *supra* note 70, at 82 (noting that the general purpose of printing patents was to encourage industrial development). The Stationers also pursued policies that used printing patents to encourage printing in general. *See id.* at 109 (discussing the pooling of printing patents to provide economic incentives to poor members of the Company).

[96] *Id.* at 143.

[97] *Id.* at 146-47.

little importance by the time the Statute of Anne was passed in 1710.[98] Still, despite this lack of importance, printing patents were still being successfully enforced in the late seventeenth century[99] and suits were still being brought under them in the eighteenth century.[100] As late as 1775, in *Carnan's Case*, printing patents were asserted by the Stationers and the defendants asserted a *copyright* defense to the patent claim.[101] Defendants also referred to patent during their argument.[102] The court, like the Stationers, referred only to patents.[103] All of this shows that the line between patents and copyrights was blurred, even in 1775, just a few short years before the Progress Clause was ratified.

4. Conclusions to be Drawn from English Precedent

There are several important points to be gleaned from this history of English precedent. First is the fact that patent law has, since its beginning, been applied to expressive content. Equally as noteworthy is the fact that the first English patent was not an industrial patent but a printing patent. Printing patents like the first survived unchanged through major patent and copyright legislation. Perhaps most importantly, these patents still existed and were still being enforced at the time the Constitution was being written. It is therefore unacceptable to ignore, as is typically done, the history and existence of printing patents in attempting to ascertain what the Framers intended the Progress Clause to mean.

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[98] *Id.* at 144.

[99] *See, e.g.*, The Stationers' Company v. Seymour, 86 Eng. Rep. 865 (1667); Roper v. Streater, cited, Skinner 233, 90 Eng. Rep. 107 (1672); Mayo v. Hill, cited, 2 Show. K.B. 260, 89 Eng. Rep. 928 (1673).

[100] *See* The Stationers' Company v. Carnan, 2 W. Bl. 1004, 96 Eng. Rep. 590 (1775).

[101] *Id.* at 1007 (arguing that the patents lacked any "of the true Grounds, on which a Prerogative Copyright can be founded.").

[102] *See id.* at 1008.

[103] *See id.* at 1009.

ii. American Precedent

All of the above demonstrates that there was significant overlap in subject matter between English patents and copyrights. Assuming that the Framers were aware of English law, as many have, the history of English law supports application of patent law to what the Framers called science, not just the useful arts. This assumption and its implications for the Progress Clause are also strongly supported in pre-Constitutional American history.

1. Pre-Constitutional Colonial and State Progress Laws

The Progress Clause was drafted "against the immediate backdrop of the Articles of Confederation, but within the overall framework of the English, colonial, and state practices regarding patents and copyrights."[104] Having already discussed the English framework, this section discusses the colonial and state practices and their relevance to interpretation of the Progress Clause.

The Articles of Confederation did not give authority to the Continental Congress to issue copyrights or patents.[105] After several authors petitioned the Continental Congress on the topic of literary property,[106] a committee was appointed "to consider the most proper means of cherishing genius and *useful arts* throughout the United States by *securing to the authors or publishers* of new books their property in such works."[107] The committee was "persuaded that nothing is more properly a man's own than the fruit of his

[104] Walterscheid, *Background*, *supra* note 43, at 3.

[105] Ochoa & Rose, *supra* note 1, at 686.

[106] 24 JOURNALS OF THE CONTINENTAL CONGRESS 326 (May 2, 1783) ("sundry papers and memorials from different persons on the subject of literary property" were submitted to Congress).

[107] NATIONAL ARCHIVES, PAPERS OF THE CONTINENTAL CONGRESS, No. 36, II, folios 113-114, *reprinted in* BRUCE W. BUGBEE, THE GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW 61 (1967) (emphasis added).

study, and that the protection of literary property would greatly tend to encourage genius, to promote useful discoveries, and to the general extension of the arts and commerce."[108] In response to the committee's findings, the Continental Congress urged states to *secure copyrights to authors* or publishers.[109]

Three states, Massachusetts, Connecticut, and Maryland, had already adopted copyright laws prior to the Resolution.[110] Eventually, every state adopted copyright laws.[111] South Carolina took the Resolution a step further, and included a general patent law in its copyright statute.[112] The other states did not do so, but typically enacted individual patents instead.[113]

Although this pre-Constitutional evidence is not entirely conclusive, it does show that the Continental Congress thought that copyright could be used to encourage the useful arts. Furthermore, the committee appointed to address the copyright issue used several of the constitutional terms – a point that is made more relevant, as will be shown,

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[108] 24 JOURNALS OF THE CONTINENTAL CONGRESS 326 (May 2, 1783).

[109] *See* Resolution of May 2, 1783, *reprinted in* COPYRIGHT ENACTMENTS OF THE UNITED STATES 1783-1906, at 11 (2d ed. 1906). The Resolution encouraged states

> to secure to the authors or publishers of any new books not hitherto printed ... the copy right of such books for a certain time not less than fourteen years from the first publication; and to secure to the said authors, if they shall survive the term first mentioned, ... the copy right of such books for another term of time not less than fourteen years.

[110] *See* Act of Jan. 29, 1783 (Conn.), *reprinted in* COPYRIGHT ENACTMENTS, *supra* note 109, at 11-13; Act of March 17, 1783 (Mass.), *reprinted in* COPYRIGHT ENACTMENTS, *supra* note 109, at 14-15; and Act of April 21, 1783 (Md.), *reprinted in* COPYRIGHT ENACTMENTS, *supra* note 109, at 15-16.

[111] *See* 2 GEORGE TICKNOR CURTIS, CONSTITUTIONAL HISTORY OF THE UNITED STATES 349 (1896-1897) (stating that every state had a copyright law).

[112] *See* Act of March 26, 1784 (S.C.), *reprinted in* COPYRIGHT ENACTMENTS, *supra* note 109, at 23.

[113] *See* EDWARD C. WALTERSCHEID, THE NATURE OF THE INTELLECTUAL PROPERTY CLAUSE: A STUDY IN HISTORICAL PERSPECTIVE 56-58 (2002).

by the fact that James Madison was one of the committee members.[114]

2. The Constitutional Convention

Further support for a unitary reading of the Progress Clause is found in the Constitutional Convention and interpretations of the Progress laws by contemporaries of the Framers. Discussions at the Constitutional Convention of what became the Progress Clause may indicate that the Framers intended the clause to be unitary. Because the Progress Clause was not debated after introduction,[115] much of this section is derived from the background proposals of the two people most closely associated with the intellectual property-related powers: James Madison and Charles Pinckney.

The Federal Convention convened on May 25, 1787 in Philadelphia. William Jackson, the Convention's secretary, recorded an official journal of the proceedings.[116] James Madison kept his own private, more detailed journal as well.[117] These journals agree that intellectual property was not addressed for the first several months of the Convention,[118] and an early draft of the Constitution did not mention it either.[119]

Intellectual property powers were first proposed among a list of twenty powers on August 18, 1787.[120] Several of these powers were quite clearly directed towards

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[114] *See* 24 JOURNALS OF THE CONTINENTAL CONGRESS 211 (Mar. 24, 1783). The other members of the committee were Hugh Williamson of North Carolina and Ralph Izard of South Carolina.

[115] *See* Karl Fenning, *The Origin of the Patent and Copyright Clause of the Constitution*, 17 GEO. L.J. 109, 114 (1929).

[116] *See* Oliar, *Convention*, *supra* note 13, at 426.

[117] *Id.*

[118] *Id.*

[119] *See* James Madison's Journal (Aug. 6, 1787), 2 THE RECORDS OF THE FEDERAL CONVENTION OF 1787 (Max Ferrand ed. 1911).

[120] Convention's Journal (Aug. 18, 1787), in 1 DOCUMENTARY HISTORY OF THE CONSTITUTION OF THE UNITED STATES OF AMERICA, 1786-1870, at 130, 130-31 (U.S. Bureau of Rolls and Library ed., Washington D.C., U.S. Dep't of State 1894) (emphasis added):

improving or encouraging innovation – including those directed at universities, public institutions, and rewards or encouragements for innovation.[121]

Although many of these powers were rejected, as evidenced by the fact that they do not appear in the Constitution, at least one scholar has argued that they formed the basis of the eventual Progress Clause.[122] This scholar's proposal is based on the fact that the Progress Clause essentially provides a desirable purpose (promoting progress) and means for achieving it (by securing rights). This combination of purpose and means does not appear in any single proposed power.

To dispose of the unappropriated lands of the United States
To institute temporary governments for new States arising thereon
To regulate affairs with the Indians as well within as without the limits of the United States
To exercise exclusively Legislative authority at the seat of the general Government, and over a district around the same, not exceeding square miles: the consent of the Legislature of the State or States comprising such district being first obtained
To grant charters of incorporation in cases where the public good may require them, and the authority of a single State may be incompetent
To secure to literary authors their copy rights for a limited time
To establish an University
To encourage, by proper premiums and provisions, the advancement of useful knowledge and discoveries
To authorise the Executive to procure and hold for the use of the United States landed property for the erection of forts, magazines, and other necessary buildings
To fix and permanently establish the seat of Government of the United-States in which they shall possess the exclusive right of soil and jurisdiction
To establish seminaries for the promotion of literature and the arts and sciences
To grant charters of incorporation
To grant patents for useful inventions
To secure to authors exclusive rights for a certain time
To establish public institutions, rewards and immunities for the promotion of agriculture, commerce, trades, and manufactures.
That Funds which shall be appropriated for payment of public Creditors shall not during the time of such appropriation be diverted or applied to any other purpose--and to prepare a clause or clauses for restraining the Legislature of the United States from establishing a perpetual revenue
To secure the payment of the public debt.
To secure all Creditors, under the new Constitution, from a violation of the public faith when pledged by the authority of the Legislature
To grant letters of marque and reprisal
To regulate Stages on the post-roads.

[121] *See id. See also* Oliar, *Convention*, *supra* note 13, at 447-49.

[122] Oliar, *Convention*, *supra* note 13, at 425.

Instead, a combination of the proposals by both Charles Pinckney and James Madison speak to the Progress Clause's specific combination of purpose and means. Pinckney and Madison each proposed separate powers for copyright, patent, education, and encouragement of innovation.[123] Both men's patent and copyright powers were exceedingly simple, granting Congress the power to secure or grant a right with no other guidance or limitation.[124] With the exception of Madison's education power, the remaining education and encouragement proposals are all directed at what can readily be described as the promotion of progress of innovation.[125] Pinckney's proposals included the encouragement of literature, the arts and sciences, agriculture, commerce, trade and manufacture.[126] Madison's includes the advancement of useful knowledge and discoveries.[127]

Based on the evident relationship between these proposals, it seems likely that the Progress Clause was a distillation of all eight of the related powers proposed by Madison and Pinckney.[128] If this is so, it seems inappropriate to completely disjoin copyright and patent from each other as the distributive reading does. The proposals that spoke to education and encouragement were directed at subject matter that clearly spans both copyright and patent. One of the common justifications for patent and copyright is

[123] Oliar, *Convention*, *supra* note 13, at 446-47.

[124] Madison's copyright and patent powers, respectively, read: "to secure to literary authors their copyrights for a limited time," and "to secure to the inventors of useful machines and implements the benefits thereof for a limited time ." Pinckney's proposals read: "to secure to authors exclusive rights for a certain time ," and "to grant patents for useful inventions." *Id.* at 447.

[125] *Id. See also* Dotan Oliar, *Making Sense of the Intellectual Property Clause: Promotion of Progress as a Limitation on Congress's Intellectual Property Power*, 94 GEO. L.J. 1771, 1806 (2006) [hereinafter, Oliar, *Making Sense*].

[126] Oliar, *Convention*, *supra* note 13, at 447.

[127] Oliar, *Making Sense*, *supra* note 125, at 1806.

[128] *See id.* at 1805-10.

incentivizing innovators,[129] and education clearly speaks to general *and* technical knowledge. It seems then that copyright and patent, as embodied in the Progress Clause, were intended to work together to promote both science and the useful arts.

Statements made contemporaneously to the Constitutional Convention, in conjunction with more recent judicial teachings, further indicate that the Progress Clause was understood to mean that both patent and copyright were supposed to promote both science and the useful arts. We are told by proponents of the distributive reading that science meant knowledge in general while the useful arts are the technological or "applied" sciences.[130] Recently, the Supreme Court taught that commerce and business are not technological sciences,[131] which according to the distributive reading, would render them ineligible for patent protection. Much less recently, the Court also held that commercial arts are not protected by copyright, save for the expression of that art.[132] This

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[129] *See* Mark A. Lemley, *The Economics of Improvement in Intellectual Property*, 75 TEX. L. REV. 989, 993 (1997); Maureen O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1180 (2000).

[130] *See* Lutz, *Patents and Science*, supra note 1, at 50 ("'applied' science is clearly part of the 'useful arts.'"); *id.* at 51 ("The word 'science,' … at the writing of the Constitution meant learning in general."), *id.* at 54 ("The term 'useful arts,' as used in the Constitution and in the titles of the patent statutes is best represented in modern language by the word 'technology.'"). *See also Bilski*, 130 S.Ct. at 3243-44 (Stevens, J., concurring) ("And we know that the term 'useful arts' was used in the founding era to refer to manufacturing and similar applied trades… Numerous scholars have suggested that the term 'useful arts' was widely understood to encompass the fields that we would now describe as relating to technology or 'technological arts.'"); Paulik v. Rizkalla, 760 F.2d 1270, 1276 (Fed. Cir. 1985) (en banc) (to be patentable, a claim must further the purpose "of advancing the useful arts - the process today called technological innovation."); *In re* Comiskey, 554 F.3d 967, 977 (Fed. Cir. 2009) (en banc); *In re* Skvorecz, 580 F.3d 1262, 1269 (Fed. Cir. 2009) ("A purpose of the written description requirement is to provide the public with knowledge of the patented technology, thereby to advance the useful arts."); Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co., 598 F.3d 1336, 1367 (Fed. Cir. 2010) (Rader, J., dissenting) ("Invention of new technologies strengthens and advances the 'useful arts.'").

[131] *Bilski*, 130 S.Ct. at 3243 (Stevens, J., concurring) ("It appears, however, that regardless of how one construes the term 'useful arts,' business methods are not included.").

[132] *See* Baker v. Selden, 101 U.S. 99 (1879). The Court addressed a claim for copyright infringement in a book and the book-keeping system it embodied. The Court noted first that an author's expression of a science or method could be protected by copyright. *Id.* at 100-101 ("Where the truths of a science or the methods of an art are the common property of the whole world, any author has the right to express the one, or explain and use the other, in his own way."). The Court followed this by noting that patent law was the

leaves business methods and commerce without any clear protection under the Progress Clause – a state of affairs which some may find satisfactory.

That view, however, appears not to be shared by at least two important early Americans. As mentioned above, Pinckney's proposed encouragement power included commerce as one of its target fields.[133] A much more prominent Founding Father also lent his voice to the argument. In his January 8, 1790 State of the Union address, President George Washington addressed intellectual property:

> The advancement of agriculture, *commerce*, and manufactures, by all proper means, will not, I trust, need recommendation; but I cannot forbear intimating to you the expediency of giving effectual *encouragement*, as well to the introduction of *new and useful inventions* from abroad, as to the exertions of skill and genius in producing them at home.[134]

Admittedly, this statement came *after* the Ratification of the Constitution, but it was made in such close proximity that it is highly unlikely that there was a dramatic shift in Washington's understanding of the constitutional language. Given Pinckney's use of the same language during the Constitutional Convention, it should come as little surprise that Washington himself believed that commerce deserved encouragement. Indeed, Washington used most of the relevant language from the early proposed powers in this address: he implored Congress to address the *encouragement* of agriculture, commerce,

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proper place, if any, to protect a system like the one claimed by Selden.

> The novelty of the art or thing described or explained has nothing to do with the validity of the copyright. To give to the author of the book an exclusive property in the art described therein, when no examination of its novelty has ever been officially made, would be a surprise and a fraud upon the public. That is the province of letters-patent, not of copyright. The claim to an invention or discovery of an art or manufacture must be subjected to the examination of the Patent Office before an exclusive right therein can be obtained; and it can only be secured by a patent from the government.
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> *Id.* at 102.

[133] *See* Convention's Journal, *supra* note 120, at 130-31.

[134] ANNALS OF CONGRESS, 1st Cong., 2d Sess., I, 932-33 (emphasis added).

and manufactures – and he tied these to the phrase *new and useful inventions*. This leads to the inference that George Washington himself viewed agriculture and commerce, as far as useful innovation is concerned, as equal to manufactures. Yet patent law has had significant difficulty in accepting agriculture and especially commerce as objects eligible for patent protection.

3. Conclusion from American Precedent

As with the English precedent, several points can be taken towards understanding the Progress Clause. First is that the Constitutional Congress – and especially James Madison – believed that the useful arts could be benefited by securing copyright to authors. Second, the initially-proposed powers which appear to have evolved into the Progress Clause spoke of encouragement of broader scope of subject matter than just science or just useful arts. Lastly, as emphasized by George Washington in the very first State of the Union address, very "scientific" (as opposed to useful arts) things like commerce could lead to "new and useful inventions." This pre-constitutional history evidences what today might be considered anathema: patent promoting the sciences and copyright promoting the useful arts.

b. Early Post-Ratification History of American Patent and Copyright Laws

This section turns to the early post-ratification history of the Progress Clause. Because this part of the Progress Clause's history is relevant to original understanding, it is restricted to a much smaller temporal window. Specifically, this part addresses early Progress legislation and judicial interpretations.

i. Statutory Language

The first patent and copyright laws were enacted in 1790. The Patent Act was

entitled "An Act to promote the progress of useful Arts."[135] The Copyright Act was named "An Act for the encouragement of learning, by securing the copies of maps, Charts, And books, to the authors and proprietors of such copies, during the times therein mentioned."[136] The name of the 1790 Patent Act appears to unequivocally support the idea that patents apply only to the useful arts,[137] while the 1790 Copyright Act's title says nothing about science or the useful arts. It refers instead to "learning," and does not refer to art or science.[138]

The patent laws were amended in 1793. The 1790 and 1793 laws were largely the same, save for one major change: the 1793 Act amended the written description section of the 1790 Act. Where the 1790 Act required that the written description enable a "person skilled in the art or manufacture" to make the invention,[139] the 1793 Act required it to enable a "person skilled in the art or *science*" to make the invention.[140]

The amendment to include science in the written description law is particularly telling for two reasons. First, the amendment essentially used the language of the entire preamble to the Progress Clause, rather than just a portion of it.[141] The short existence of the 1790 Act, added to the fact that one of the relatively few substantive changes was to substitute "science" for "manufacture," indicates that the legislature saw this as an

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[135] *See* 1790 Patent Act, Chap. 7, 1 Stat. 109 (April 10, 1790).

[136] *See* 1790 Copyright Act, 1 Stat. 124 (May 31, 1790).

[137] Titles can be used to assist in understanding a statute. *See* Brotherhood of Railroad Trainmen v. Baltimore & Ohio Railroad Co., 331 U.S. 519, 529 (1947) ("[W]hile titles or headings 'cannot limit the plain meaning of the text,' they are to be considered in resolving ambiguity").

[138] *See* 1790 Copyright Act, 1 Stat. 124.

[139] 1790 Patent Act § 2.

[140] 1793 Patent Act at § 3.

[141] Notably, the section never uses the full constitutional phrase "useful arts," but instead refers only to arts.

important amendment.

Second, the structure of the section referring to "science" indicates a view of science as part of the patent regime. The language of that section makes clear that the *thing* invented or discovered is an "art, machine, or improvement."[142] However, the foundation of the invention or discovery is "art or science."[143] This distinction is particularly relevant to interpreting the Progress Clause because it indicates that patent is applied to science.

One last point is worthy of note in this linguistic review of the progress laws. Although the 1836 Patent Act was much further removed from the ratification of the Constitution, and is therefore of less value in ascertaining original understanding, it is still the next most recent piece of legislation in determining this understanding. Like the 1790 Patent Act before it, the 1836 Act explicitly refers to "science" in its written description section.[144] It also adds a second reference, this time in the context of a board of examiners, which were to be selected for their "knowledge and skill in the particular art, manufacture, or branch of science to which the alleged invention appertains."[145] If experts were to be chosen for their skill in particular sciences, it seems to follow that promotion of the progress of those sciences was among the objectives of the patent laws.

ii. Statutory Structure

The observation that the copyright and patent laws are governed by distinct

[142] *Id.* ("every inventor … shall swear … that he is the true inventor or discoverer of the art, machine, or improvement, for which he solicits a patent").

[143] *See id.* (the written description must "enable any person skilled in the art or science" to practice the invention).

[144] *See* 1836 Patent Act § 6.

[145] 1836 Patent Act § 7.

statutes is irrefutable. However, the mere separation of these two statutory regimes does not necessarily support a distributive reading of the Progress Clause as proposed by Justice Thompson and Karl Lutz. Instead, a more likely justification for their separation lies in the different standards for creation and enforcement of the rights. This section takes the position that the statutory distinction was dictated by policy concerns such as limiting the need for judicial interpretation, clarifying the differing standards between the two properties, and statutorily establishing the boundaries of the two rights.

It is prudent to begin with the proposition that the two laws are meant to serve the same purposes[146] and they do so in similar ways.[147] Despite the similarities at their ends – the purpose in the beginning, and the means of enforcement at the end – the two laws have very different intermediate concerns. Novelty and the scope of the exclusive rights conferred, for example, are justifiably very different between the two regimes. The recognition of this distinction by early congressmen is hardly enough to prove that the Progress Clause was intended to be read in the distributive.

That copyright and patent are intended to foster innovation and promote progress implies that each inherently requires some degree of novelty, or distinction from that which already in the possession of the public, for the right to accrue.[148] This standard is

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[146] *See* U.S. CONST. Art. I, § 8, cl. 8 (stating that Congress shall "promote Progress"). *See also* Lemley, *supra* note 129, at 993 ("Intellectual property is fundamentally about incentives to invent and create."); O'Rourke, *supra* note 129, at 1180 ("both the copyright and patent laws have grappled with the question of how to safeguard the incentive inherent in the grant of exclusive rights…"); John Shepard Wiley, Jr., *Copyright at the School of Patent*, 58 U. CHI. L. REV. 119, 119 (1991) ("[T]he two laws perform the same function. People debate whether these regimes should strive for justice for creators or economic efficiency for consumers, but no partisan recommends one goal for patent and another for copyright.").

[147] Both statutes create a non-tangible property right which the owner is granted the right to exclude others from using. *See generally* 17 U.S.C. § 501 (providing for copyright infringement); 35 U.S.C. § 271 (providing for patent infringement); 19 U.S.C. § 1337(a)(1)(B)(i) (describing unfair import activities as those that infringe valid and enforceable patents or copyrights).

[148] In examining the constitutional requirement of "promotion of the useful arts," the Supreme Court said

referred to herein as the "progress" standard. Copyright and patent each have progress standards, but their requirements are very different. This difference is a reflection of the formalistic requirements of the two laws.

The progress standard in copyright is very lax. The progress threshold is originality, which requires a minimal degree of creativity.[149] This standard is in fact distinct from true originality, as it is possible for two authors to independently create the exact same work and still qualify for copyright protection if both works exhibit sufficient creativity.[150]

Patent law, on the other hand, has a comparatively much more difficult progress standard to meet. Patent protection only accrues where the innovation satisfies two standards. First, the innovation must be novel, meaning that the innovation was not known, used, described, or otherwise made available to the public by the inventor or a third party.[151] These bars to patent protection are all based on a single piece of art. An invention must also be novel in light of multiple pieces of art; in other words, they must

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that Congress may not issue patents which remove existent knowledge from the public domain. Instead, "[i]nnovation, advancement, and things which add to the sum of useful knowledge are inherent requisites" in the patent system. *Graham*, 383 U.S. at 5-6.

[149] *See Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*, 499 U.S. 340, 345 (1991) ("Original, as the term is used in copyright, means only that the work … possesses at least some minimal degree of creativity.").

[150] *See id.* at 345-46 ("Originality does not signify novelty; a work may be original even though is closely resembles other works so long as the similarity is fortuitous, not the result of copying. To illustrate, assume that two poets, each ignorant of the other, compose identical poems. Neither work is novel, yet both are original and, hence, copyrightable. *See also* Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49, 54 (2d Cir. 1936) ("Borrowed the work must indeed not be, for a plagiarist is not himself pro tanto an 'author'; but if by some magic a man who had never known it were to compose anew Keats's Ode on a Grecian Urn, he would be an 'author,' and, if he copyrighted it, others might not copy that poem, though they might of course copy Keats's."); Bleistein v. Donaldson Lithographing Co., 88 U.S. 329, 249 (1903); 1 M. NIMMER & D. NIMMER, COPYRIGHT §§ 2.01[A], [B] (1990).

[151] *See* 35 U.S.C. § 102(a), (b), (d)-(f) (describing novelty and loss of right as based on public knowledge, use or disclosure of the invention or the invention by another).

be non-obvious.[152]

There is also a difference in the scope or strength of the exclusive right granted by copyrights and patents. Copyrights, while they exist for a longer term, are significantly weaker exclusive devices. Sections 107 through 122 of the current Copyright Act provide limitations on the exclusive power of a copyright.[153] These limitations severely limit the power of a copyright based generally on the use made by the alleged infringer of the copyrighted work. Alternatively, patent is largely unconcerned with the purpose for which an alleged infringer is putting the patent to use; a patent owner is generally entitled to exclude others from making, using, offering to sell, or selling a patent invention.[154]

These differences are not as dramatic as they seem, particularly when examined in light of *what* the two properties protect. Copyright, which once had a list of copyright-eligible classes like patent does now, has always been interpreted to protect expressive works.[155] Patent has always had specified classes of patent-eligible subject matter,[156] and

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[152] *See* 35 U.S.C. § 103(a) (barring patentability "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."). *See also* KSR Intern. Co. v. Teleflex Inc., 550 U.S. 398, 419-20 (2007) ("In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103. One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims.").

[153] *See generally* 17 U.S.C. § 107-112 (providing limitations on the right to exclude).

[154] 35 U.S.C. § 271(A).

[155] *See* 17 U.S.C. § 102(a) ("copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression"). The subject matter of the first Copyright Act was "any map, chart, book or books." Copyright Act of 1790, 1 Stat. 124, *available at* http://www.copyright.gov/history/1790act.pdf. The subject matter of copyright eventually became a long list of copyrightable works, including books, periodicals, prepared oral addresses, dramatic and musical compositions, maps, art and much more. *See* Copyright Act of 1909, § 5(a)-(k), *available at* http://www.copyright.gov/history/1909act.pdf. Even with this restrictive subject matter list, it appears that copyright was directed at expression from the outset. *See* Harper & Row Publ'rs Inc. v. Nation Enterprises, 471 U.S. 539, 558 (1985) ("[T]he Framers intended copyright … to be the engine of free expression."). *See also* White-Smith Music Pub. Co. v. Apollo Co., 209 U.S. 1, 11 (1908); Burrow-Giles Lithographic Co. v.

courts have frequently attempted to shoehorn inventions into these specified classes. Regardless, the patent classes have always been construed rigidly while the copyright classes, when they existed, were used merely as guidelines. Copyright is the more enigmatic of the two, largely due to its protection of expression rather than any well-defined class of subject matter. This has led to the need for numerous exceptions to continue the encouragement of progress.

All of these concerns, when taken as a whole, better explain the existence of separate statutory schemes for each than does the distributive reading of the Progress Clause. Copyright accrues upon the satisfaction of minimal creativity, is subject to several limitations, and can easily be avoided by slight modifications in expression. Patent, on the other hand, requires satisfaction of more stringent novelty standards, but provides much stronger protection upon accrual under expansive doctrines like the doctrine of equivalents.[157] A given patent, then, can exert a stronger force on related works than can a given copyright.

Admittedly, many of these issues may not have been fully understood at the framing of the Constitution. However, the very evidence that Lutz uses to support the distributive reading shows that the roots of these issues were understood. Rep. Burke

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Sarony, 111 U.S. 53, 55 (1884); *Baker v. Selden*, 101 U.S. at 102-03 (all examining expression even in the absence of expression language in the statute).

[156] *See* Patent Act of 1790, Chap. 7, 1 Stat. 109 (April 10, 1790) (granting patent protection to "any useful art, manufacture, engine, machine, or device, or any improvement therein"), *available at* http://www.ipmall.info/hosted_resources/lipa/patents/Patent_Act_of_1790.pdf [herinafter, 1790 Patent Act].

[157] *See* Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 24 (1997) (holding that the test for equivalence is "whether the substitution [of one element for the other] … is a change of substance as to make the doctrine of equivalents inapplicable; or conversely … whether the change was so insubstantial" that doctrine of equivalents applie); Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co., 339 U.S. 605, 608 (1950) (doctrine of equivalents may be invoked if a device "performs substantially the same function in substantially the same way to obtain the same result.")

wished to "take care of copyrights immediately … because it is almost as easy to ascertain literary as any other kind of property."[158] He recognized patents were a more difficult subject.[159] The difficulty that Burke recognized seemingly had little effect on the passage of the bills. The two original Progress bills were passed less than eight weeks apart.[160] Surprisingly, especially if Burke's statements are given the weight afforded them by Lutz, the copyright bill was *not* the first passed; patent was.[161]

Burke's statement makes clear that Congress recognized the concerns and policies behind patent and copyright, and indicates that those issues may have been the reason behind the provision of separate statutes. It is also worth noting that Burke was a Representative from South Carolina – the only state to pass patent legislation under the Articles of Confederation.[162] It is likely that, as a Representative and one-time judge of that state,[163] Burke was quite aware of the distinguishing issues that the two laws faced.

All of this shows that the first Congress had many concerns in mind while drafting the first copyright and patent acts. It is quite possible that a grammatical quirk in the Progress Clause was one of these concerns, but the recognized difficulty in developing a statute to properly guide the judiciary in the fields of patent and copyright law implies that Congress was aware of the need for different standards for each. Congress's recognition of these policy concerns explains the separation of copyright from

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[158] *See* Lutz, *Patents and Science*, *supra* note 1, at 52.

[159] *Id.*

[160] Wiley, *supra* note 146, at 119.

[161] *Id.*

[162] *See supra* note 112.

[163] *See BURKE, Aedanus*, BIOGRAPHICAL DIRECTORY OF THE UNITED STATES CONGRESS, *available at* http://bioguide.congress.gov/scripts/biodisplay.pl?index=B001086.

patent at least as adequately as does a grammatical argument. It does not, however, indicate on its own that the Framers intended for the Progress Clause to be read in distribution.

iii. Judicial Interpretation

In the first half of the nineteenth century, courts cited the written description provision's enablement clause in two different ways. Sometimes they quoted the entirety of the provision, including the term science.[164] Others times, courts cited to the statute, but referred only to the person skilled in the art.[165] Some referred interchangeably to persons skilled in the art and persons skilled in the art or science.[166] That citations in both forms were frequently made by the same courts over an extended period of time, and even made in the same decisions at times, suggests that rather than a developing aversion to science as patent-eligible subject matter, reference only to those skilled in the art was merely a shorthand citation form. It does not appear to be a shift in the judicial understanding of the Progress Clause, and certainly no reference was made to a balanced reading.

Cases addressing expert witnesses are also particularly informative. What today is called "mechanical engineering" was frequently referred to as "mechanical science" in several of these cases.[167] One court went so far in its discussion as to place science

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[164] *See, e.g.*, Hogg v. Emerson, 47 U.S. 437, 484 (1848); Shaw v. Cooper, 32 U.S. 292, 295 (1833); Grant v. Raymond, 31 U.S. 218, 226 (1832); Evans v. Eaton, 20 U.S. 356, 381 (1822); Parker v. Stiles, 18 F.Cas. 1163, 1172 (C.C.Ohio 1849); Allen v. Blunt, 1 F.Cas. 448, 450 (C.C.Mass. 1845).

[165] Wood v. Underhill, 46 U.S. 1, 4 (1847); Carver v. Hyde, 41 U.S. 513, 515-16 (1842).

[166] *See Hogg*, 47 U.S. at 462, 484; *Raymond*, 31 U.S. at 219, 226.

[167] *See Parker v. Stiles*, 18 F.Cas. at 1176 ("I will here, however, observe, that great respect is due to the views and opinions of scientific individuals, and practical mechanics, on the question of the identity of different mechanical structures. From their acquaintance with the elements of *mechanical science*, they are enabled satisfactorily to decide this question, while to others, it might seem involved in obscurity and doubt."); Foote v. Silsby, 9 F.Cas. 373, 380 (C.C.N.Y. 1849) ("The offer to prove, by experts and scientific

prominently alongside things freely accepted today as patent eligible useful arts, including physics and chemistry.[168]

Justice Story himself provided one of the most detailed discussions in this area. It is worth noting from the outset that the Justice's discussion comes from a case handed down in 1845. It is therefore not truly contemporaneous with the Constitution. It was handed down, however, only a decade after Justice Thompson's initial observation of the distributive reading, and is therefore as credible as Justice Thompson's reference to the proper reading of the Progress Clause. It is also worth noting that Justice Story was nominated to the Supreme Court in 1811 – very close to ratification of the Constitution – by James Madison, one of the two men responsible for the Progress Clause.

Justice Story made clear his view in discussing novelty and enablement:

> Still, it is obvious, that although a mere artisan, who had no *scientific* knowledge on the subject, and who was unacquainted with the various *mechanical or chemical equivalents* employed in such cases, might not be able to make or compound the thing patented, from the specification; yet a person who was skilled in the very *science* on which it depended, and with the mechanical and chemical powers and equivalents, might be able to *teach and demonstrate to an artisan* how it was to be made or constructed, or compounded or used. A fortiori he would be enabled so to do, if he combined practical skill with a thorough *knowledge of the scientific principles* on which it depended… But upon the question of the novelty of an invention, and in reference to this, the identity or diversity of two or more machines, or compounds, it is obvious, that *mere*

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men, that the terms 'thermostat' and 'heat-regulator' were well known in mechanical science, with a view to show that the notice was sufficiently explicit and specific, was properly rejected."); *Blunt*, 1 F.Cas. at 450 ("It is as to the relative weight of the evidence of persons practically engaged in the trade, employment or business of the particular branch of mechanics to which the patent right applies, and the evidence of persons who, although not practical artisans, are thoroughly conversant with *the subject of mechanics as a* science.") (emphasis added); Brooks v. Jenkins, 4 F.Cas. 275, 280 (C.C.Ohio 1844) ("Dr. Locke has closely attended to the science of mechanics for forty years, and is a practical mechanic, having in his philosophical experiments, been in the practice of constructing machines.").

[168] *See Brooks*, 4 F.Cas. at 281 ("you perceive that the science of mechanics … affords a range for the highest mental vigor, and requires as deep thought, as nice a discrimination, as any other pursuit. The lights of chemistry, and of the highest branches of the mathematics, are subservient to it. No one can be an accomplished mechanist, who has not studied with some success the laws of physics.").

> *artisans, however well skilled in the mere details of their art*, might be wholly incapable of giving a satisfactory answer; when a person trained in the *science* to which it belonged, would, at a glance, ascertain whether the mechanical apparatus or chemical compound was identical in its composition and structure or not, or whether the differences consisted in the mere change of one known mechanical equivalent for another. In short, *science alone* would be able to answer the question whether or not a *particular machine* was substantially in its mode of operation new, or identical with another, although with apparent differences of form and structure, which might mislead the unscientific mind. The like considerations would apply to a chemical compound.[169]

The first notable point in Justice Story's discussion is that he did not think "mere *artisans*," or those "skilled in the mere details of their *art*," capable of understanding technical inventions. Instead, it is those "skilled in the *science* upon which it depends" to which patent courts should look. Indeed, Justice Story made clear that he believed "*science* alone" is able to answer the question of novelty for a given invention.

Justice Story's language further indicates that he viewed mechanics and chemistry as science, and not useful art. The quoted language hints that Justice Story understood an artisan to be one who practices an invention or puts the invention into effect – what might be called a skilled laborer today. Instead, Justice Story's language hints that those skilled in *science* are the ones truly promoting the progress of the useful arts. According to Justice Story, it is the person "skilled in the very science" pertaining to the invention that might be able to "teach and demonstrate" how to practice an invention to an artisan.

iv. Conclusion to be Drawn from Post-Ratification History

Unlike the pre-ratification history, the post-ratification history is rather inconsistent. Some of the evidence seems to indicate that the Progress Clause was given a distributive reading. Equally forceful evidence supports a unitary reading. The only thing

[169] *Blunt*, 1 F.Cas. at 450 (emphasis added).

that can be taken from this period with any certainty is that the distributive reading was not the well-established doctrine that De Wolf and Lutz would paint it as.

IV. Construction of the Progress Clause and the Unitary Reading

All of the foregoing has presented only the history of patent and copyright laws, and concluded that this history justifies a unitary reading. In this Part, I turn to the Supreme Court's rules of constitutional construction. I rely on two mechanisms that the Supreme Court has applied in its constitutional interpretation jurisprudence. The unitary reading is the most reasonable conclusion under both mechanisms.

a. Construction

Constitutional analysis begins with the proposition that where the language of a constitutional provision is clear, there is no need to engage in construction.[170] The foregoing history and the language of the Progress Clause clearly show that it is not such a provision. First, the distributive reading did not become the generally accepted reading until more than a century after the Framing. This is evidence that the Clause is subject to more than one reasonable interpretation. Second, from a grammatical standpoint, the word "respective" is modified by the word "their," which can reasonably be interpreted to limit reference of "writings and discoveries" back only to "authors and inventors," and not to "science and useful arts." Both of these points demonstrate that there are at least two reasonable interpretations of the Progress Clause, and construction is therefore necessary to ascertain the proper scope and meaning of the Clause.

When construction is necessary, it is important to take a historical look at the

[170] *See* Martin v. Hunter's Lessee, 14 U.S. 304, 338-39 (1816) ("If the text be clear and distinct, no restriction upon its plain and obvious import ought to be admitted, unless the inference be irresistible."); United States v. Sprague, 282 U.S. 716, 731 (1931) ("where the intention is clear there is no room for construction and no excuse for interpolation or addition.").

"state of things" at the time a constitutional provision is adopted.[171] This historical background is relevant to determining what the "normal and ordinary" meaning of constitutional language was to "ordinary citizens of the founding generation."[172] Evidence of contemporary interpretation of the provision at issue can also speak to the understanding of those ordinary citizens.[173]

The foregoing historical discussion speaks directly to this "state of things" and to the understanding of ordinary citizens.[174] There is certainly some evidence that supports reading the Progress Clause as requiring separate patent and copyright laws. They were legislated separately, and the patent act's title indicated that it was intended to protect the useful arts.[175] The Clause is, arguably, a balanced sentence that links together science, authors and writings, separate from useful arts, inventors and discoveries.[176] That, however, is the extent of the evidence that supports a distributive reading.

As has been shown, much more historical evidence supports the unitary reading of the Progress Clause. Among other things, patents were first applied in England to expressive, or "scientific," content rather than useful arts.[177] These printing patents were

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[171] *See* State of Rhode Island v. Com. of Massachusetts, 37 U.S. 657, 723 (1838) ("In the construction of the constitution we must look to the history of the times, and examine the state of things existing when it was framed and adopted, to ascertain the old law, the mischief, and the remedy.") (internal citations omitted).

[172] *See* District of Columbia v. Heller, 554 U.S. 570, 576-77 (2008).

[173] *See id.* at 605-19 (using post-ratification commentary, legislation and case law on the Second Amendment to assist in construction of that constitutional provision).

[174] *See supra* Part III (discussing historical background relevant to the Progress Clause).

[175] *See* 1790 Patent Act (bearing the title "An Act to promote the progress of useful Arts."); *Wheaton*, 33 U.S. at 684 (Thompson, J., dissenting) ("Th[e Progress Clause] is to be construed distributively, and must have been so understood; for when congress came to execute this power by legislation, the subjects are kept distinct, and very different provisions are made respecting them.");

[176] *See* De Wolf, *supra* note 12 at 15; Lutz, *Patents and Science*, *supra* note 1, at 51.

[177] *See* LINACRE, *supra* note 76 (claiming a printing privilege in 1512); PATTERSON, *supra* note 70, at 42 (stating that the first printing patent was granted in 1518).

still being enforced in the late eighteenth century.[178] Similarly, there is evidence that members of the Continental Congress, including James Madison, viewed copyright as a tool for encouraging the development of useful arts and discoveries.[179]

Evidence from after the adoption of the Progress Clause also demonstrates the understanding that "ordinary citizens" had of the provision. The 1790 Patent Act, by far the shortest-lived iteration of the Patent Act to date, was amended in 1793 to expressly include the word science.[180] Another reference to science was added in the 1836 revision.[181]

This evidence, along with the remainder of the aforementioned historical background, constitutes the first mechanism in the construction of the Progress Clause. While historical practice does not lead conclusively to one construction or the other, the fact that a definitive construction of the Progress Clause eludes our grasp lends itself to the conclusion that it was meant and understood to be broad. The fact that patent law was applied to science and useful arts, while copyright was viewed as conducive to the encouragement of science and the useful arts, is certainly ambiguous. Yet it is that ambiguity that explains the scope of the Progress Clause: it was meant to be given a unitary reading. Perhaps it was the wisdom of the Framers to make the Clause ambiguous in order to avoid disputes over which power the exclusive right to what subject matter arose under.

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[178] *See* The Stationers' Company v. Carnan, 2 W. Bl. 1004, 96 Eng. Rep. 590 (1775).

[179] *See* BUGBEE, *supra* note 107, at 61 (presenting the view of copyright as something that can promote the useful arts); Resolution of May 2, 1783, *supra* note 109 (presenting copyright as capable of promoting useful discoveries).

[180] 1793 Patent Act § 3.

[181] *See* 1836 Patent Act §§ 6-7.

If the historical evidence is not found satisfactory, there is another step to take in construction of the Progress Clause. This step, although not entirely analogous to, is nonetheless informed by a recent Supreme Court decision interpreting a uniquely-structured constitutional provision: the Second Amendment.[182] The Second Amendment provides: "A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear arms, shall not be infringed."[183]

In *District of Columbia v. Heller*, the Supreme Court observed that the Second Amendment was divided into two parts: its prefatory clause and its operative clause.[184] Although the Court claimed that this structure was unique in the Constitution, the Court observed that other legal documents of the founding era often contained provisions with a similar structure.[185] The Court also provided some guidelines in interpreting this "unique" structure. The prefatory clause "announces a purpose."[186] There must be a logical connection between the prefatory and the operative clauses.[187] The logic requirement

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[182] *See Heller*, 554 U.S. at 577 (noting that "th[e] structure of the Second Amendment is unique in our Constitution").

[183] U.S. Const. amend. II.

[184] *Heller*, 554 U.S. at 577.

[185] *Id. See also* Eugene Volokh, *The Commonplace Second Amendment*, 73 N.Y.U. L. REV. 793, 814-21 (1998) (providing examples of "roughly contemporaneous constitutional provisions [that] contain, like the Second Amendment, a justification clause and an operative clause.").

[186] *Heller*, 554 U.S. at 577. The prefatory clause has also been referred to as the "justification clause" or the "preamble." *See* Volokh, *supra* note 185, at 814 (referring to other contemporary constitutional provisions that included a "justification clause"); JOHN HART ELY, DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW 95, 227 n.77 (1980) ("The Second Amendment has its own little preamble...."); LAURENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW 299 n.6 (2d ed. 1988) (discussing "the nearly unique inclusion of a purposive preamble [in the Second Amendment]"); Michael A. Bellesiles, *The Origins of Gun Culture in the United States, 1760-1865*, 83 J. AM. HIST. 425, 454 (1996) ("[T]he second is the only amendment with a preamble establishing its purpose."); Sanford Levinson, *The Embarrassing Second Amendment*, 99 YALE L.J. 637, 644 (1989) ("What is special about the [Second] Amendment is the inclusion of an opening clause--a preamble, if you will--that seems to set out its purpose. No similar clause is a part of any other Amendment....").

[187] *Id.*

means that the prefatory clause may be used to clarify the operative clause, but it may not be used to limit or expand the scope of the operative clause.[188]

In construing the Second Amendment, the Court first examined the operative clause and then looked to the prefatory clause to "ensure that [the Court's] reading of the operative clause is consistent with the announced purpose."[189] In both instances, the Court examined historical evidence to determine the ordinary meaning of the Second Amendment.[190]

The Supreme Court's claim that the structure of the Second Amendment is "unique in our Constitution" is only correct insofar as the Constitution's amendments are concerned. There is one other provision that shares a similar prefatory/operative structure: even Second Amendment scholars have noted that the Progress Clause shares this structure.[191] Intellectual property scholars and commentators echo a substantially identical sentiment. They have observed that the Progress Clause is unique among congressional powers because it is the only power that specifically states its purpose,[192]

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[188] *Id.* at 577-78.

[189] *Id.* at 578.

[190] *Heller*, 554 U.S. at 576.

[191] *See* Ely, *supra* note 186, at 227 n. 77 (noting in a discussion of the Second Amendment that there, "as almost nowhere else [*citing in an endnote the Progress Clause as the possible exception*], the framers and ratifiers apparently… [chose] explicitly to legislate the goal in terms of which the provision was to be interpreted."); Tribe, *supra* note 186, at 299 n.6 (noting that purposive language of the Second Amendment is almost unique in the Constitution, and that "the only other such language appears in the copyright clause"). *Cf.* Volokh, *supra* note 185, at 793 n.1 (noting that the Progress Clause has a similar structure, but distinguishing it because the Progress Clause "deals with congressional powers rather than individual rights, and because the grammatical relationship between its subclasses is significantly different" from those of the Second Amendment).

[192] *See* Christina Bohannan & Herbert Hovenkamp, *IP and Antitrust: Reformation and Harm*, 51 B.C. L. REV. 905, 918 (2010) ("The purpose of patent and copyright legislation is to 'promote the progress of science and useful arts.'"); *Recent Case*, 121 HARV. L. REV. 1455, 1460 (2008) (describing the Progress Clause as "unique among the enumerated powers of Article I, Section 8, in that its purpose is contained within its text: "To promote the Progress of Science and useful Arts."). *See also* HOWARD B. ABRAMS, LAW OF COPYRIGHT § 1:19 (2010); Jeffrey M. Kuhn, *Information Overload at the U.S. Patent and Trademark*

or conversely, that it is the only power that specifies how to exercise that power.[193] Courts, too, have repeated these characterizations.[194]

The Progress Clause is also susceptible to the same rephrasing as the Second Amendment. The Supreme Court noted that the Second Amendment could be rephrased, "Because a well regulated Militia is necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed."[195] So too with the Progress Clause: "Because it is desirable to promote the Progress of Science and useful Arts, Congress shall have the power to secure for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."

Applying the Court's Second Amendment analysis to the Progress Clause, the first step is to determine the meaning of the operative clause. There is nothing to dispute that the operative clause grants Congress the power to enact the patent and copyright laws. It has always been read so.[196]

Next, *Heller* requires the prefatory clause to have a logical connection to the

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Office: Reframing the Duty of Disclosure in Patent Law as a Search and Filter Problem, 13 YALE J. L. & TECH. 90, 92 (2010-2011).

[193] *See* Walterscheid, *Background*, *supra* note 43, at 32 (stating that the Progress Clause "is unique among the congressional powers in that it alone specifies a mode for exercising the particular power, i.e., 'by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.'").

[194] *See* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 575 (1994) (noting that "copyright's very purpose[is] '[t]o promote the Progress of Science and useful Arts."); Eldred v. Reno, 239 F.3d 372, 381 (D.C. Cir. 2001) (Sentelle, J., dissenting in part) (observing that the Progress Clause "is a grant of power to promote progress. *The means by which that power is to be exercised is certainly the granting of exclusive rights… for limited times*.") (emphasis added).

[195] *Heller*, 554 U.S. at 577.

[196] *See* Evans v. Eaton, 16 U.S. 454, 486 (1818) (referring to the Progress Clause as the foundation of Congress's power to grant patents); *Wheaton*, 33 U.S. at 660 (describing the 1790 Copyright Act as passed in "pursuance" of Congress's Progress Clause power).

operative clause.[197] The connection is clear: the historical evidence shows that copyright and patent, the objects of the operative clause, were often tied to science and useful arts. Further, there was frequent interplay between patent, copyright, science and useful arts. There is therefore no inconsistency between the clauses.[198]

Lastly, the prefatory clause may clarify, but not expand or limit, the operative clause.[199] As I have asserted above, patents and copyrights both applied to "science" and "useful arts" prior to and for a period after ratification of the Progress Clause. Splitting the Progress Clause into a science clause and a useful arts clause – or in other words, limiting the scope of the operative clause – based on the prefatory clause violates the Supreme Court's rule of construction in *Heller*.

This constitutes the second relevant mechanism of constitutional construction. Because the prefatory clause cannot expand or limit the scope of the operative portion of the Progress Clause, language from the prefatory clause may not be used to effectively divide the operative clause. The distributive reading does just that: it divides the operative portion of the Progress Clause along the lines of science and useful arts. The unitary reading does not.

b. The Unitary Reading

As demonstrated by the historical review and constitutional analysis in Parts III and IV, there is no clear-cut basis for reading the Progress Clause in a distributive manner, but there is substantial justification for the unitary reading. This part first presents the unitary reading and the justifications for the particular structure of that

[197] *Heller*, 554 U.S. at 577.

[198] *See id.* at 578 (stating that the Court will examine its constructions of the prefatory and operative clauses for consistency).

[199] *Id.* at 577-78.

reading. Although this article uses the term "unitary" for the proposed reading, it is not an entirely unitary reading. As will be shown, the proposed reading comprises a unitary progress power and separate modes of achieving that power. This reading is supported not only by the structure of the Progress Clause, and the general structure of Article I, Section 8, but by the history discussed above.

The unitary reading of the Progress Clause reads the Constitution to grant one power: to promote the progress of science and the useful arts. That is the extent of the proposed change from the distributive reading, which treats the promotion of science and promotion of useful arts as separate and distinct powers. Patent and copyright remain conceptually distinct, but under the proposed reading, there is one unitary purpose to the Progress Clause. The result is that patent law secures the discoveries of inventors, whether those discoveries are part of science or the useful arts. Copyright likewise secures the writings of authors, whether they are part of science or the useful arts.

The language of the Progress Clause makes the separation of the two regimes appropriate despite history's indications to the opposite. Although history makes clear that patent may protect science or useful arts, and likewise with copyright, the language of the Clause indicates that the full scope of these regimes is not applicable in all cases. The discoveries of inventors and the writings of authors may be protected. The operative clause therefore places a limitation upon *what types* of progress may be protected, but it does not place a limitation upon the *subject matter* of these works (i.e. whether they are science or useful art).

The critical point of this reading, in the context of the *Heller* analysis, is that it is the operative clause that dictates the distinction, and not the prefatory clause. This is

critical, as the prefatory clause may not be used to limit the scope of the operative clause. The unitary reading only places limitations in accord with the Supreme Court's jurisprudence, while the distributive reading places extra limitations upon the Progress Clause.

According to the proposed reading, both regimes are subject to similar limitations. Neither patent nor copyright is extended to any idea or fact, nor does either right enable an author or inventor to withdraw information from the public domain. These limitations remain unchanged from the law under the distributive reading.[200]

The major distinction between copyright and patent under the proposed reading is the formal requirements to qualify for each. These requirements under the unitary reading are very similar to those under the distributive reading. It is well-established that copyright inures in expressive content.[201] Patent, so courts have hinted, is appropriately used to promote the progress of "applicative" works – works that apply laws of nature, natural phenomena, or abstract ideas in a useful manner.[202] Therefore, the unitary reading makes little change to eligibility law for either regime, save for its inclusion of science as

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[200] Neither patent nor copyright protects ideas or facts. *See Feist*, 499 U.S. at 344-45 ("The most fundamental axiom of copyright law is that '[n]o author may copyright his ideas or the facts he narrates."); Diamond v. Diehr, 450 U.S. 175, 185 (1981) ("Excluded from such patent protection are laws of nature, natural phenomena, and abstract ideas."). Nor may either work serve to withdraw already-existing information from the public domain. *See* Computer Associates Intern., Inc. v. Altai, Inc., 982 F.2d 693, 710 (2d Cir. 1992) ("[Public domain] material is free for the taking and cannot be appropriated by a single author even though it is included in a copyrighted work."); 35 U.S.C. § 102 (2006) (generally denying patent protection for previously known, used or described inventions).

[201] *See*, *e.g.*, Mazer v. Stein, 347 U.S. 201, 214 (1954) (stating that expression is copyrightable). *See also* Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53 (1884) (stating that "writings" in the Progress Clause means the "literary productions … by which the ideas in the mind of the author are given visible expression.").

[202] *See* Joshua I. Miller, *Unknown Futures and the Known Past: What Can Patent Learn from Copyright in the New Technological Age?*, 21 ALB. L.J. SCI. & TECH. 1, 56-58 (2011) (arguing that patent law has hinted at, and in some cases, applied, an "application" standard to determine patent eligibility). *See also Diehr*, 450 U.S. at 187 ("It is now commonplace that an *application* of a law of nature or a mathematical formula to a known structure or process may well be deserving of patent protection.") (emphasis in original).

appropriate subject matter for patent protection (copyright, it should be noted, has never really refused protection to *works of authorship* on the useful arts).

The transition from distributive to unitary reading does not result in a major shift in the law. The theoretical foundations of patent and copyright remain largely unchanged. Specifically, the progress standards in each still operate to limit protection to those things not yet in the public domain and the types of work that patent and copyright each protect remains unchanged. The only difference is that the progress of science now falls within the scope of patent and the progress of useful arts now expressly falls within the objects of copyright. This shift has little effect in most areas of law, but actually better explains their existence than the distributive reading.[203]

V. The Unitary Reading in Modern Progress Laws

Through an analysis of the relevant history and the Supreme Court's precedent on construction of the Constitution, this article has argued that the Progress Clause was intended to be given a unitary, rather than a distributive, reading. It has also presented a workable unitary reading that comports with the historical evidence, but which does not stray very far from the current state of the law. This part examines more recent legal developments, arguing that, with one exception, each of these areas of law has evolved based on an underlying implicitly unitary reading of the Progress Clause.

a. Design Patents

Design patents are granted for "new, original, and ornamental design for an article of manufacture."[204] Design patents are subject to essentially the same requirements as

[203] *See infra* Part V for a discussion of the effect the unitary reading has on several areas of law.

[204] 35 U.S.C. § 171 (2006).

utility patents.[205] Although they are subject to many of the same requirements as utility patents, and they must be applied to articles of manufacture rather than the "purely intellectual products" of copyright law,[206] there is little to distinguish design patent subject matter from copyright subject matter.

The first laws for protecting industrial design were passed half a century after the first patent and copyright acts.[207] Two sources have been presented as the impetus for the first design laws: the 1941 congressional report of Henry Ellsworth, Commissioner of Patents,[208] or a petition sent to Congress by a group of manufacturers and mechanics requesting protection of designs.[209]

The Manufacturers' Petition pointed to English law as a justification for American design protection,[210] although these English laws granted copyright protection.[211] Commissioner Ellsworth's report, which echoed many of the manufacturers' concerns,[212] may have been the basis for protecting designs through

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[205] *Id.*

[206] Thomas B. Hudson, *A Brief History of the Development of Design Patent Protection in the United States*, 30 J. PAT. OFF. SOC'Y 380, 383 (1948).

[207] *See* Jason J. Du Mont, *A Non-Obvious Design: Reexamining the Origins of the Design Patent Standard*, 45 GONZ. L. REV. 531, 539 (2010). *See also* Thomas B. Lindgren, *The Sanctity of the Design Patent: Illusion or Reality? Twenty Years of Design Patent Litigation Since* Compco v. Day-Brite Lighting, Inc. *and* Sears, Roebuck & Co. v. Stiffel Co., 10 OKLA. CITY U.L. REV. 195, 202 (1985) (noting that, although the Constitution gave Congress the power to pass design patent legislation, "Congress waited until 1842 before it enacted legislation relating to designs in accordance with the Patent Act.").

[208] *See* Hudson, *supra* note 206, at 381; *see also* Henry L. Ellsworth, *Report From the Commissioner of Patents*, H.R. Doc. No. 74, at 2 (1842) [hereinafter, Annual Report for 1841].

[209] Jordan L. Mott *et al.*, *Petition of A Number of Manufacturers and Mechanics of the United States, Praying The Adoption of Measures To Secure To Them Their Rights in Patterns and Designs*, S. Doc. No. 154 (1841) [hereinafter, Manufacturers' Petition].

[210] Du Mont, *supra* note 207, at 540.

[211] *See* Designs Registration Act, 1839, 2 & 3 Vict., c. 17, § 1 (Eng.).

[212] Du Mont, *supra* note 207, at 541.

patent.[213]

Regardless of the actual source of design patent law, the first design patent act was passed on August 29, 1842.[214] The design patent standard was noticeably different from the utility patent standard.[215] Utility patent protection was available where someone "discovered or invented any new and useful art, machine, manufacture, or composition of matter,"[216] while design patents had to be created by "industry, genius, efforts, and expense."[217] The design patent language was actually very similar to contemporary

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[213] Annual Report for 1841, *supra* note 208, at 2:

> All this could be effected by simply authorizing the Commissioner to issue patents for these objects, under the same limitations and on the same conditions as govern present action in other cases. The duration of the patent might be seven years, and the fee might be one-half of the present fee charged to citizens and foreigners, respectively.

[214] *See* Act of Aug. 29, 1842, ch. 263, § 3, 5 Stat. 543, 543-44 (1842) [hereinafter, 1842 Design Patent Act], providing in part:

> And be it further enacted, That any citizen or citizens, or alien or aliens, having resided one year in the United States and taken the oath of his or their intention to become a citizen or citizens who by his, her, or their own industry, genius, efforts, and expense, may have invented or produced any new and original design for a manufacture, whether of metal or other material or materials, or any new and original design for the printing of woolen, silk, cotton, or other fabrics, or any new and original design for a bust, statue, or bas relief or composition in alto or basso relievo, or any new and original impression or ornament, or to be placed on any article of manufacture, the same being formed in marble or other material, or any new and useful pattern, or print, or picture, to be either worked into or worked on, or printed or painted or cast or otherwise fixed on, any article of manufacture, or any new and original shape or configuration of any article of manufacture not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her, or their application for a patent therefor [sic], and who shall desire or obtain an exclusive property or right therein to make, use, and sell and vend the same, or copies of the same, to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor [sic], as in the case now of application for a patent: Provided, That the fee in such cases which by the now existing laws would be required of the particular applicant shall be one half the sum, and that the duration of said patent shall be seven years, and that all the regulations and provisions which now apply to the obtaining or protection of patents not inconsistent with the provisions of this act shall apply to applications under this section.

[215] Du Mont, *supra* note 207, at 543.

[216] *See* 1836 Patent Act § 6.

[217] 1842 Design Patent Act § 3.

interpretations of copyright's originality requirement.[218] Indeed, the act was passed "with the realization that the useful arts would be stimulated by that which appeals to the eye,"[219] a decidedly un-useful purpose despite its link to the useful arts.

In 1861, the design patent legislation was repealed by Congress.[220] The 1861 legislation was then repealed in 1870.[221] It was around this time that the Supreme Court attempted to explain the purpose of design patent protection:

> The acts of Congress which authorize the grant of patents for designs were plainly intended to give encouragement to the decorative arts . . . [and] contemplate not so much utility as appearance . . . not as an abstract impression, or picture, but an aspect given to those objects mentioned in the [Congressional] acts.[222]

The blurred line between design patent and copyright was recognized a short time after *Gorham* – this time by the Commissioner of Patents.[223] This blur remains, and the two regimes of copyright and design patent are anything but clearly distinct. In design patent, the two key issues to address in determining whether an industrial design is entitled to patent protection are: (1) whether the features sought to be protected are ornamental, as opposed to merely utilitarian or functional; and (2) whether those features

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[218] *See* Joseph S. Miller, *Hoisting Originality*, 31 CARDOZO L. REV. 451, 469-70 (2009) (discussing the investment of labor or skill as a basis for copyright protection). *But see Feist*, 499 U.S. at 351-54 (rejecting "sweat of the brow" and "industrious collection" doctrines as means of satisfying the originality requirement).

[219] Mark A. LoBello, *The Dichotomy Between Artistic Expression and Industrial Design: To Protect or Not to Protect*, 13 WHITTIER L. REV. 107, 111 (1992).

[220] Patent Act, ch. 88, 1 Stat. 246 (1861).

[221] Consolidated Patent Act, ch. 230, 1 Stat. 198 (1870).

[222] Gorham Mfg. Co. v. White, 81 U.S. (14 Wall.) 511, 524-25 (1871).

[223] *See* Ex parte Parker, 13 O.G. 323 (Comm'r Patents, 1877) ("The subjects to be protected under the design [patent], copyright, label, and trade-mark acts are often so nearly the same in character that it is difficult always to say to which class they belong, especially in the absence of definitions in the statutes.").

are applied to, or embodied in, an article of manufacture.[224] Similarly, in determining whether a functional work is entitled to copyright protection, the two key questions are: (1) whether the expressive features of the work can be identified separately from the functional features of the work; and (2) whether the work has been fixed in a tangible medium of expression.[225]

These two pairs of questions are hardly distinguishable. In each case, the first question asks whether the potentially protected features are separable from the functional features of the article. In design patent, this question requires that "the design must not be governed solely by function,"[226] but that it is essentially arbitrary.[227] Meanwhile, several circuits have adopted Robert Denicola's copyright test, which asks whether the design elements "reflect the unconstrained perspective of the artist," independent of any functional concerns.[228] The Denicola test, like the design patent test, emphasizes that protectable design features are to be motivated by artistic or arbitrary concerns, not

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[224] Lance L. Vietzke, *Software as the Article of Manufacture in Design Patents for Icons*, 21 AIPLA Q.J. 138, 140 (1993).

[225] The first of these requirements is rooted in *Mazer v. Stein*, 347 U.S. 201 (1954), which addressed the copyrightability of a sculpture that was actually used as a lamp base. The Court noted that copyright law protects only the expression of an idea, and that therefore the lamp designer "may not exclude others from using statuettes of human figures in table lamps; they may only prevent use of copies of their statuettes as such or as incorporated in some other article." *Id.* at 218. This holding was incorporated into the 1976 Copyright Act. *See* Kieselstein-Cord v. Accessories by Pearl, Inc., 623 F.2d 989, 996 (2d Cir. 1980). *Kieselstein-Cord* held that a belt buckle was copyrightable where "[t]he primary ornamental aspect of the … buckles is conceptually separable from their subsidiary utilitarian function." *Id.* at 993.

The second requirement comes directly from the 1976 Copyright Act. *See* 17 U.S.C. § 102(a) (2006).

[226] Seiko Epson Corp. v. Nu-Kote Intern., Inc., 190 F.3d 1360, 1368 (Fed. Cir. 1999).

[227] Daniel H. Brean, *Enough is Enough: Time to Eliminate Design Patents and Rely on More Appropriate Copyright and Trademark Protection for Design Patents*, 16 TEX. INTELL. PROP. L.J. 325, 336 (2008).

[228] *See* Robert C. Denicola, *Applied Art and Industrial Design: A Suggested Approach to Copyright in Useful Articles*, 67 MINN. L. REV. 707, 742 (1983). *See also* Pivot Point Int'l, Inc. v. Charlene Prods., Inc., 372 F.3d 913, 931 (7th Cir. 2004); Lamps Plus, Inc. v. Seattle Lighting Fixture Co., 345 F.3d 1140, 1147 (9th Cir. 2003); Superior Form Builders v. Dan Chase Taxidermy Supply Co., 74 F.3d 488, 494 (4th Cir. 1996); Brandir Int'l, Inc. v. Cascade Pac. Lumber Co., 834 F.2d 1142, 1145 (2d Cir. 1987).

functional or practical ones.[229] Although these tests are not identical in practice, they are very similar.

Likewise, the second question in design patent and copyright asks whether the protectable features are embodied in, or applied to, a physical medium. In design patent, an "article of manufacture" is essentially synonymous with patent law's "manufacture."[230] "Manufacture," in turn, includes anything produced from "raw or prepared materials" by giving those materials "new forms, qualities, properties, or combinations."[231] This production sounds extremely similar to fixation of a work in a tangible medium. Indeed, the 1842 Design Patent Act required a design to be "fixed to" an article manufacture to qualify for design patent protection.[232]

These fundamental similarities make little sense under the distributive reading of the Progress Clause. If patent is intended to protect useful arts and copyright is intended to protect science, independent and exclusive of one another, then any overlap between design patents and copyright is improper. Legally speaking, however, this is not the case.

Although courts are reluctant to grant copyright protection to design features on useful articles that rise to the level of industrial design,[233] they have recognized that it is appropriate for a creator to obtain simultaneous patent and copyright protection in some

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[229] *See* Brean, *supra* note 227, at 339.

[230] *In re* Hruby, 373 F.2d 997, 1000 (C.C.P.A. 1967) (citing *In re* Hadden, 20 F.2d 275 (D.C. Ct. App. 1927)).

[231] *See* Diamond v. Chakrabarty, 447 U.S. 303, 308 (citing American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11 (1931)) (defining manufacture as "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery.").

[232] *See* 1842 Design Patent Act at 543-44 (requiring the ornamentation to be, for example, "fixed to" the article of manufacture).

[233] LoBello, *supra* note 219, at 110 (citing Esquire, Inc. v. Ringer, 591 F.2d 796 (D.C. Cir. 1978), *cert. denied*, 440 U.S. 908 (1979)).

cases.[234] A strict reading of the Progress Clause through the distributive lens simply cannot explain, nor allow, patent protection of ornamental, expressive designs. If it could, the same logic dictates that there would be little reason to deny copyright protection to functional items. Yet even in the few instances yielding such a result, those results have not been readily accepted.[235]

Viewed through a unitary lens, however, it is appropriate for patent protection to extend to expressive designs. Design patents fall within the unitary reading's definition of discovery because they are inextricably tied or "fixed" to articles of manufacture,[236] which are widely accepted as constitutional discoveries.

As can be seen, the existence of design patents is best explained, not by the distributive reading, but by a unitary one. It is quite clear that a design patent is not a useful art,[237] but it does contribute to the advancement of applicative, or patentable, arts. The distributive reading does not allow for such a result. In order to evolve along the course design patent law has, there must have been an underlying presumption of a unitary reading.

b. Functional Copyrights

American copyright has, from its earliest legislative inception, encompassed

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[234] *In re* Yardley, 493 F.2d 1389, 1394 (C.C.P.A. 1974).

[235] *See, e.g.*, NAT'L COMM'N ON NEW TECHNOLOGICAL USES FOR COPYRIGHTED WORKS, FINAL REPORT 9, 31 (1978) (Hersey, Commissioner, dissenting), *available at* http://digital-law-online.info/CONTU/PDF/Chapter3.pdf [hereinafter CONTU REPORT] (arguing that forcing computer programs into the rubric of copyright "must in the long run tend to corrupt and erode the essential purposes of copyright."); Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection For Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663, 672, 754-56 (1984) (arguing against the provision of copyright protection to computer programs in machine-readable form).

[236] *See* 35 U.S.C. § 171. *See also* 1842 Design Patent Act at 543-44 (requiring the ornamentation to be, for example, "fixed to" the article of manufacture).

[237] *See Gorham*, 81 U.S. at 524 ("The acts of Congress which authorize the grant of patents for designs were plainly intended to give encouragement to the *decorative* arts.") (emphasis added).

useful subject matter. Indeed, that scope extends into pre-constitutional American law. It was copyright that the Continental Congress encouraged early state governments to turn to in order to promote the useful arts.[238] And it was the first copyright law, the 1790 Copyright Act, which granted copyright protection to arguably functional subject matter: maps and charts,[239] the expression of which was certainly not physically separable from the functional elements and arguably not separable from the conceptual elements.

This section addresses much less enigmatically functional copyrights. Specifically, it addresses copyrights in architectural works and computer programs. These genres of copyrightable authorship present related issues, and neither is adequately explained by a distributive reading. They are both, however, fully and satisfactorily explained by a unitary reading.

i. Architectural Works

Architectural works are presently defined as "the design of a building … including a building, architectural plans, or drawings."[240] Architectural works are now generally copyrightable,[241] subject to certain limitations.[242] This state of affairs came about thanks to the Architectural Works Copyright Protection Act of 1990 ("AWCPA").[243] Although the AWCPA had little effect on the copyright status of architectural plans or drawings, but it represents a major departure from earlier law.

[238] *See supra* notes 106-109.

[239] *See* 1790 Copyright Act § 1.

[240] 17 U.S.C. § 101.

[241] 17 U.S.C. § 102(a)(8).

[242] *See* 17 U.S.C. § 120 (defining the scope of exclusive rights in certain architectural works that "have been constructed" or are "building[s] embodying an architectural work").

[243] P.L. 101-650, Title VII, § 704(a), Dec. 1, 1990, 104 Stat. 5133.

Many of the questions that arise both pre- and post-AWCPA are not adequately addressed by the distributive reading of the Progress Clause.

The AWCPA did little to change the law as it relates to architectural plans and drawings. *Burrow-Giles Lithographic Co. v. Sarony*[244] defined "author" as "he to whom anything owes its origin; originator; maker; one who completes a work of science or literature."[245] Blueprints and other architectural drawings clearly satisfied the *Burrow-Giles* standard, even prior to the 1976 Copyright Act.[246] It is worth noting here that architectural drawings are every bit as useful as maps and charts, and arguably more functional than expressive as these drawings convey very important (and functional) information like the locations of walls, insulation, piping, and duct work. As with maps and charts, this information is not readily separable, either conceptually or physically.

More relevant to this article is the expansion of copyright to include "buildings," which, until enactment of the AWCPA, were denied copyright protection. This is not to say that buildings did not have sculptural aspects; at least those buildings for which copyright would be worth pursuing almost certainly did.[247] Rather, the sculptural features

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[244] 111 U.S. 53 (1884).

[245] *Id.* at 58.

[246] *See* Imperial Homes Corp. v. Lamont, 458 F.2d 895, 897-98 (5th Cir. 1972) (internal citations omitted):

> [The Progress Clause] permits copyright rights to be secured on "… all the writings of an author." In *Burrow-Giles Lithographic Co. v. Sarony*, "an author" was defined as "he to whom anything owes its origin; originator, maker; one who completes a work of science or literature." Hence, the architect who originates a set of blueprints for a dwelling is as much an author for copyright purposes as the writer who creates an original novel or the dramatist who pens a new play.

See also DeSilva Const. Corp. v. Herrald, 213 F.Supp. 184, 193 (M.D.Fl. 1962) ("Although not mentioned expressly in a separate category in the statutes, architectural plans (including drawings and models) are clearly copyrightable under the present copyright laws under the specified class of drawings or plastic works of scientific or technical nature.").

[247] *See* 17 U.S.C. § 101 (broadly defining "pictorial, graphic, and sculptural works").

were not protected as they could not be identified separately from the utilitarian aspects of the building, and were therefore considered functional.[248]

Considered as functional works, copyright protection of buildings cannot be explained by the distributive reading of the Progress Clause. The unitary reading, however, encompasses such a result. The design of a building itself is clearly expressive, so it falls within the scope of unitary copyright. Because the unitary reading has no aversion to copyright protecting useful arts, however, the issue of separability does not prevent copyright protection for functional architectural works.

ii. Computer Programs

Computer programs present a much more recent innovation that has faced similar issues to architectural works. It could be said that the first computer program was made in 1941, when Konrad Zuse completed the first general purpose, programmable calculator.[249] Over the next several decades, incremental advances were made in the computer industry. These developments improved both computer hardware[250] and

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[248] JULIE E. COHEN, LYDIA PALLAS LOREN, RUTH L. OKEDIJI, MAUREEN A. O'ROURKE, COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 269 (Aspen Pub'rs 2d ed. 2006) ("Prior to the addition of architectural works to [§ 102] in 1990, architectural *plans* were protected as graphic works, but finished *buildings* were not. Finished buildings generally were not considered protected because, no matter how aesthetically pleasing, buildings are functional."). *See also* 17 U.S.C. § 101 (requiring that "sculptural features" be "identified separately from, and … capable of existing independently of, the utilitarian aspects of the article").

[249] *See* PBS, *Triumph of the Nerds: A History of the Computer*, http://www.pbs.org/nerds/timeline/elec.html (last visited Nov. 2, 2009) (discussing Konrad Zuse's calculator and work with binary math and Boolean logic) [hereinafter, PBS]. *See also* Bob Carlson, Angela Burgess, Christine Miller, Larry Bauer, *Timeline of Computer History* 15, http://www.computer.org/cms/Computer.org/Publications/timeline.pdf (last visited Nov. 2, 2009).

[250] The 1950s saw the major steps forward in the developing computer industry. In 1952, G.W. Drummer, a radar expert from the British Royal Radar Establishment, proposed to manufacture electronics as solid blocks with no connecting wires. PBS, *supra* note 249. Although Drummer's prototypes were failures, two separate firms announced the creation of integrated circuits in 1959. *Id.* These advancements eventually led to the first Read Only Memory ("ROM") devices, which were used in early personal computers. *See* University of Southern Alabama, *Altair*, http://www.cis.usouthal.edu/faculty/daigle/project1/1975malt.htm (last visited Nov. 2, 2009).

software, including programming languages that allowed programmers to "write" in human language which could then be translated into machine-readable language.[251]

The debate over copyright protection for programs, written into both a computer's hardware and software, began long before the 1976 Copyright Act. In 1955, Congress authorized the Copyright Office to conduct a study to recommend changes to the 1909 Act in order to address emerging technologies.[252] In 1964, the Copyright Office began accepting computer programs for copyright registration under a "rule of doubt."[253] A decade later, Congress established the Commission on New Technological Uses for Copyrighted Works ("CONTU") to address the rule of doubt and other technology-related issues.[254] CONTU was specifically charged with analyzing issues related to "reproduction and use of copyrighted works in computers and computer-generated works."[255]

Before CONTU's findings were complete, Congress passed the 1976 Copyright Act, which seemed to suggest that computer programs were copyrightable works.[256] However, the Copyright Act also included § 117, which was essentially a "status quo"

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[251] Prior to 1964, programming was done purely by binary, as pioneered by Zuse. That year, researchers at Dartmouth introduced Beginner's All-Purpose Symbolic Instruction Code ("BASIC") programming language. *See* Carlson, et al., *supra* note 249, at 35. Other languages were soon introduced. *See id.* at 42-43.

[252] COHEN ET AL., *supra* note 248, at 236.

[253] *See* U.S. Congress, Office of Technology Assessment, *Finding a Balance: Computer Software, Intellectual Property, and the Challenge of Technological Change* 66, OTA-TCT-527 (1992). The "rule of doubt" amounted to an admission by the Copyright Office that it was unsure whether copyright was appropriate.

[254] COHEN ET AL., *supra* note 248, at 236.

[255] *Id*.

[256] *See* H.R. Rep. No. 94-1476, 94th Cong., 2d Sess. 54 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5667. The legislative history viewed computer programs as literary works: "The term 'literary works' does not connote any criterion of literary merit or qualitative value: it includes … computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves."

provision for computer programs.[257] Thus, while the history indicated that computer programs were copyrightable, the statute's language indicated otherwise – whatever protection computer programs had before the new Act, they had after.[258]

CONTU concluded, not unanimously, that computer programs were indeed "writings" within the Constitution's Progress Clause:

> [A] program is created, as are most copyright works by placing symbols in a medium. In this respect it is the same as a novel, poem, play, musical score, blueprint, advertisement, or telephone directory. It is not the same as a phonorecord or videotape. Those works are created by shaping physical grooves or electromagnetic fields so that when they are moved past sensing devices electric currents are created which, when amplified, do physical work. Notwithstanding these apparent differences, all these works are writings in the constitutional sense, and eligible for copyright if the Congress so provides.[259]

CONTU's findings not only supported the treatment of programs as writings, but further argued that § 102(b) of the Copyright Act[260] did not bar protection for computer programs because copyright "protects the program as long as it remains fixed in a tangible medium of expression but [does not protect] the electromechanical functioning of [the] machine."[261]

CONTU's recommendations led to two changes in the Copyright Act in 1980.

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[257] The 1976 Act's § 117 stated: "Notwithstanding the provisions of sections 106 through 116 and 118, this title does not afford to the owner of copyright in a work any greater or lesser rights with respect to the use of the work in conjunction with automatic systems capable of storing, processing, retrieving, or transferring information, or in conjunction with any similar device, machine or process than those afforded to works under the law, whether title 17 or the common law or statutes of a State, in effect on December 31, 1976, as held applicable and construed by a court in an action brought under this title."

[258] *See* COHEN ET AL., *supra* note 248, at 236.

[259] CONTU REPORT, *supra* note 235, at 15.

[260] 17 U.S.C. § 102(b) stated that "[i]n no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work."

[261] CONTU REPORT, *supra* note 235, at 20.

First, Congress repealed section 117, replacing it with the current language.[262] The definition of a "computer program" was also added to section 101.[263] By removing the previous "status quo" section 117, and adding the definition of "computer program," Congress at least implicitly accepted CONTU's recommendations.

After Congress and CONTU established that computer programs were constitutionally protected writings, questions began to arise based on the distinctions between programs recorded in software and those recorded in hardware. Software programs present a significantly easier question, as programs on disk are essentially just literary works recorded on a tangible medium of expression[264] in which expression is readily separable from functionality.[265] Hardware, on the other hand, presents a more difficult question because the expressive and functional elements are no longer readily separable. This question was resolved in favor of copyright protection for the program, with the explicit limitation that the device itself was not protected.[266]

Yet the fact remains that computer programs *do* serve functional purposes, and much of the structure and language is chosen, not for some aesthetic purpose, but to

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[262] *See* 17 U.S.C. § 117 (providing limitations on the exclusive rights in computer programs).

[263] *See* 17 U.S.C. § 101 (defining "computer program" as "a set of instructions to be used directly or indirectly in a computer in order to bring about a certain result.").

[264] *See* 17 U.S.C. § 101 (defining "literary works" as works "expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals,… disks, or cards, in which they are embodied").

[265] Software recorded on a disk, while not running, is really just a literary work fixed on a tangible medium of expression.

[266] *See* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1250-53 (3d Cir. 1983) (discussing the line between functionality and expression in computer programs); Williams Electronics, Inc. v. Artic International, Inc., 685 F.2d 870, 874 (3d Cir. 1982) (rejecting argument that there can be no copyright protection for ROMs "because they are utilitarian objects or machine parts.").

satisfy a program's functional requirements.[267] Still, computer programs are granted copyright protection despite this inherent and frankly inseparable functionality. As with architectural works, this situation flies in the face of the distributive reading, but it is quite acceptable under the unitary reading.

c. Derivation of Copyright Doctrine from Patent Doctrine

Courts have compared and contrasted intellectual property laws for well over a century.[268] Since the first, the Supreme Court has consistently rejected the idea of kinship between copyright and trademark, while it has repeatedly recognized the similarities between copyright and patent.[269] While the similarities between copyright and patent have been touched on frequently, the last several decades have seen a trend of courts looking increasingly to patent law where the copyright statutes are silent on a given issue.[270]

The Supreme Court's first modern discussion of the relationship between intellectual property regimes came in the copyright secondary liability case of *Sony Corp. of America v. Universal City Studios, Inc.*[271] The *Sony* Court observed that the Copyright

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[267] *See* Lotus Development Corp. v. Borland Intern., Inc., 49 F.3d 807, 818 (1st Cir. 1995) ("The fact that there may be many different ways to operate a computer program, or even many different ways to operate a computer program using a set of hierarchically arranged command terms, does not make the actual method of operation chosen copyrightable; it still functions as a method for operating the computer and as such is uncopyrightable."). *But see* Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc., 797 F.2d 1222, 1237 (3d Cir. 1986) (holding that a program's structure can be protected because it is expressive).

[268] *See Selden*, 101 U.S. at 102-05; Bobbs-Merrill Co. v. Straus, 210 U.S. 339, 342-46 (1908).

[269] *See Sony*, 464 U.S. at 439 n.19. *See also The Trade-Mark Cases*, 100 U.S. at 91-92; United Drug Co. v. Rectanus Co., 248 U.S. 90, 97 (1918) (stating that trademark "has little or no analogy" to copyright or patent); McLean v. Fleming, 96 U.S. 245, 254 (1877); Canal Co. v. Clark, 13 Wall. 311, 322 (1871).

[270] *See* Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 932-36 (2005); Eldred v. Ashcroft, 537 U.S. 186, 235-36 (2003); Sony Corp. of Am. V. Universal City Studios, Inc., 464 U.S. 417, 439-42 (1984). *See also* A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1026–27 (9th Cir. 2001); DSC Commc'ns Corp. v. DGI Techs., Inc., 81 F.3d 597, 601 (5th Cir. 1996); Lasercomb Am., Inc. v. Reynolds, 911 F.2d 970, 972–77 (4th Cir. 1990) (all applying patent misuse doctrine in copyright cases).

[271] 464 U.S. 417.

Act does not expressly provide for secondary liability for infringement, while the Patent Act does.[272] The Court therefore found it necessary to refer to other areas of law to inform its analysis because "vicarious liability is imposed in virtually all areas of law,"[273] and the Court explicitly stated that it was not going to look to trademark's contributory infringement standard.[274] The Court examined patent law's standard expressly because of the "historical kinship" between the regimes.[275]

Having settled on patent as the model upon which it would base its copyright analysis, the Court recognized that patent law denies the right to control distribution of unpatented articles unless they are "unsuited for commercial noninfringing use."[276] The Court adopted this standard for copyright law.[277] The case essentially created a safe-harbor exception to secondary liability where the article was capable of noninfringing uses.

A decade later, the Supreme Court addressed a similar situation in *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd*.[278] This time the Court held that the *Sony* safe-harbor rule was inapplicable. Instead, once again expressly following patent law, the Court imported patent's inducement rule into copyright.[279]

Likewise following patent law, several circuit courts have imported a copyright

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[272] *Id.* at 434-35.

[273] *Id.* at 435.

[274] *Id.* at 439 n.19.

[275] *Id.* at 439.

[276] *Sony*, 464 U.S. at 441.

[277] *Id.* at 442.

[278] 545 U.S. 913.

[279] *Id.* at 936 ("For the same reasons that *Sony* took the staple-article doctrine of patent law as a model for its copyright safe-harbor rule, the inducement rule, too, is a sensible one for copyright.").

misuse doctrine where the Copyright Act is silent. The first circuit to do so was the Fourth Circuit, in *Lasercomb America, Inc. v. Reynolds*.[280] The *Lasercomb* court examined similarities in the "origins of patent and copyright law in England," in the Constitution, and in statutory and judicial treatment of patent and copyright.[281] After a brief study of patent history[282] and use of the misuse defense,[283] the court concluded that the "parallel public interests" of patent and copyright justified application of the misuse defense in actions brought under either right.[284] *Lasercomb's* patent misuse standard is therefore directly rooted in the relationship between copyright and patent, and several other circuits adopted the *Lasercomb* decision,[285] thereby explicitly adopting the rationale behind the decision as well.

If there is no constitutional relationship between patent and copyright, there is no reason to restrict doctrinal comparisons between different forms of intellectual property to copyright and patent. Yet the Supreme Court has noted that there is a "historic kinship" between patent and copyright, while expressly separating those rights from the related right of trademark.[286] This kinship between patent and copyright, but not trademark, is

[280] 911 F.2d 970.

[281] *Id.* at 974.

[282] *Id.* at 974-75.

[283] *Id.* at 975-76.

[284] *Id.* at 976.

[285] *See* Video Pipeline, Inc. v. Buena Vista Home Entertainment, Inc., 342 F.3d 191, 204 (3d Cir. 2003); Assessment Technologies of WI, LLC v. WIREdata, Inc., 350 F.3d 640, 647 (7th Cir. 2003); A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1026 (9th Cir. 2001); DSC Communications Corp. v. DGI Techs., Inc., 81 F.3d 597, 601 (5th Cir. 1996); Data General Corp. v. Grumman Systems Support Corp., 36 F.3d 1147, 1169 (1st Cir. 1994).

[286] *See Sony*, 464 U.S. at 439 & n.19 (noting that there is a historical kinship between patent and copyright law, but that there is no such kinship with trademark).

well-established.[287]

In an area of law where "a page of history is worth a volume of logic,"[288] the established historic kinship between patent and copyright should not be thrown away based on a lightly supported proposal made over half a century after that kinship was recognized. The distributive reading does just that, but the unitary reading does not. The unitary reading therefore legitimizes this relationship and the copyright doctrines derived from it.

d. The Exception: Patent Eligibility

The sole exception to the proposition that the progress laws have evolved under an implicit unitary reading is the area of patent eligibility – what qualifies as patent subject matter. This area of law has expressly applied the distributive reading, resulting in a conclusion that only the useful arts fall under patent's subject matter.[289] Such a limitation has, however, led to difficulties in patent law. Moreover, this limitation cannot be squared with the unitary reading because it is a creature entirely grounded in the

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[287] *See United Drug Co. v. Rectanus Co.*, 248 U.S. 90, 97, 39 S.Ct. 48, 50, 63 L.Ed. 141 (1918) (trademark right "has little or no analogy" to copyright or patent). *See also The Trade-Mark Cases*, 100 U.S. 82, 91-92, 25 L.Ed. 550 (1879); *McLean v. Fleming*, 96 U.S. 245, 254 (1877); *Canal Co. v. Clark*, 80 U.S. 311, 322 (1871).

[288] eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 395 (2006) (Roberts, C.J., concurring); Eldred v. Ashcroft, 537 U.S. 186, 200 (2003).

[289] *See* Lutz, *Patents and Science*, supra note 1, at 50 ("'applied' science is clearly part of the 'useful arts.'"); *id.* at 51 ("The word 'science,' … at the writing of the Constitution meant learning in general."), *id.* at 54 ("The term 'useful arts,' as used in the Constitution and in the titles of the patent statutes is best represented in modern language by the word 'technology.'"). *See also Bilski*, 130 S.Ct. at 3243-44 (Stevens, J., concurring) ("And we know that the term 'useful arts' was used in the founding era to refer to manufacturing and similar applied trades… Numerous scholars have suggested that the term 'useful arts' was widely understood to encompass the fields that we would now describe as relating to technology or 'technological arts.'"); Paulik v. Rizkalla, 760 F.2d 1270, 1276 (Fed. Cir. 1985) (en banc) (to be patentable, a claim must further the purpose "of advancing the useful arts - the process today called technological innovation."); *In re* Comiskey, 554 F.3d 967, 977 (Fed. Cir. 2009) (en banc); *In re* Skvorecz, 580 F.3d 1262, 1269 (Fed. Cir. 2009) ("A purpose of the written description requirement is to provide the public with knowledge of the patented technology, thereby to advance the useful arts."); Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co., 598 F.3d 1336, 1367 (Fed. Cir. 2010) (Rader, J., dissenting) ("Invention of new technologies strengthens and advances the 'useful arts.'").

distributive reading. A shift to the unitary reading, however, can have a dramatic impact on the clarity of this area of the law.

Although it is now well-established, this limitation upon subject matter has nowhere near as strong a historical grounding as the kinship discussed above. There are some limitations in patent law, however, that have a more historical basis. The problem is that the distributive reading has resulted in some confusion that led to these historical limitations being incorporated into the patent eligibility analysis: namely, that patent law cannot extend protection to laws of nature, natural phenomena, and abstract ideas.[290]

Application of the rule against protecting laws of nature, natural phenomena, and abstract ideas has led to significant confusion. For example, *Gottschalk v. Benson*[291] stands for this principle.[292] *Gottschalk* denied patent protection to method for converting binary-coded decimal into pure binary numerals.[293] *Parker v. Flook*[294] followed the *Gottschalk* decision, denying protection to a computer program that calculated an "alarm limit."[295] Finally, in *Diamond v. Diehr*,[296] the Court upheld as patent-eligible a method of curing rubber claiming use of a mathematical formula and of a programmed computer.[297]

This trio of cases has resulted in a great deal of confusion. The application in these cases of the rule against protecting laws of nature, natural phenomena, and abstract

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[290] *See* Diehr, 450 U.S. at 185.

[291] 409 U.S. 63 (1972).

[292] *See* Parker v. Flook, 437 U.S. 584, 599 (1978) (Stewart, J., dissenting).

[293] Gottschalk v. Benson, 409 U.S. 63, 64 (1972).

[294] 437 U.S. 584.

[295] *Id.* at 594.

[296] 450 U.S. 175.

[297] *Id.* at 185.

ideas has not functioned well. They have led to largely contradictory decisions like *State Street Bank*[298] and *In re Bilski*.[299] Recognizing *Diehr*, *Flook*, and *Benson*, the *State Street Bank* decision held that the transformation of data, by a machine (computer), is patent-eligible if it produces a "useful, concrete, and tangible result."[300] In *Bilski*, the Federal Circuit expressly rejected this holding,[301] and while the Supreme Court saw no problem with rejecting the useful, concrete, and tangible test, its decision did little to clarify the law.

The unitary reading, already shown to comport with several other areas of law, can return the restrictions against patenting laws of nature, natural phenomena, and abstract ideas to their proper places, rather than applying them in the random manner they have been. The unitary reading inherently increases the scope of patent eligible subject matter, as patents can protect the sciences, so much of the difficulty courts have faced in cases like *Benson*, *State Street*, and *Bilski* falls away. If the sciences, like commerce and business, are patent-eligible, then it is unnecessary for courts to pull the verbal gymnastics they have in order to deny protection to algorithms and methods of doing business.

Instead of rejecting as ineligible innovations that fall under the laws, phenomena and ideas rubric, the focus under the unitary reading may be shifted to the historical and appropriate location for each. Natural laws and phenomena can be returned to their original, historic position as questions of novelty. Similarly, abstract ideas can be

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[298] 149 F.3d 1368 (Fed. Cir. 1998).

[299] 545 F.3d 943 (Fed. Cir. 2008), *aff'd* Bilski v. Kappos, 130 S.Ct. 3218 (2010).

[300] *State Street Bank*, 149 F.3d at 1373. *See also* AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1358 (Fed. Cir. 1999).

[301] *In re Bilski*, 545 F.3d 943, 959-60.

returned to their original focus – whether an invention has been adequately described and enabled to qualify for patent protection.

Patent law's novelty and non-obviousness standards are embodied in 35 U.S.C. §§ 102-103. These sections ensure that innovations granted patent protection contribute something new to society – or in other words, that they are not removing something from the public domain.[302] This is in fact a requirement of the Progress Clause itself – that Congress may not grant anyone the right to remove information from the public domain, or society's store of knowledge, that has once been placed there.[303]

Some of the standards used to deny patent protection to methods speak directly towards these novelty requirements. Laws of nature and natural phenomena are almost certain to be part of the prior art of Sections 102 and 103. For one thing, all laws of nature already exist and most are used by the public, whether knowingly or not. They are therefore part of the public domain in the eyes of the Patent Act. Natural phenomena are very similar: while a given instance of a phenomenon may be "new," the phenomena itself is not. For example, a bolt of lightning may be something "new," but lightning itself is not.

The question should not be whether laws of nature and natural phenomena are

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[302] *See* Lough v. Brunswick Corp., 86 F.3d 1113, 1119 (Fed. Cir. 1996) (one of the purposes of § 102 is "discouraging the removal, from the public domain, of inventions that the public reasonably has come to believe are freely available"); Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437, 1453 (Fed. Cir. 1984) ("no patent should be granted which withdraws from the public domain technology already available to the public…That is the real meaning of 'prior art' in legal theory-it is knowledge that is available…to a person of ordinary skill in the art.").

[303] *See Graham*, 383 U.S. at 6

> Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available. Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must 'promote the Progress of … useful Arts.'

patent-eligible or not (and indeed they should be[304]), but whether they can satisfy the requirements of patentability. Given the case law, re-framing the exception for patent eligibility of laws of nature and natural phenomena as an exception to patentability under the Act's novelty requirements is a logical move. If laws of nature and natural phenomena are already in the public domain, they are not patentable. This does not mean they are *ineligible* for patent protection.

Funk Brothers is a great example of how this doctrinal shift could be used to create a narrower, more targeted denial of patentability (as opposed to eligibility) of a given innovation. In *Funk*, the Supreme Court denied patent eligibility to a specific combination of *rhizobia* found to not exhibit the mutual inhibition so common among most strains of the bacteria.[305] The Court noted that the benefits of the patent already existed, first by stating that the qualities were the work of nature[306] and second by noting that each species of bacteria still worked the same as it did in nature.[307] These points speak to *non-obviousness* – the combination of several things that already existed and do no more than they did on their own. Nature made the bacteria, and the bacteria did not work in a new way. The bacteria did what the always did, just in combination. Through an examination of novelty rather than eligibility, *Funk* could have been decided by a

[304] The language of the Patent Act indicates that discoveries are patentable subject matter. *See* 35 U.S.C. § 101. Discoveries are something that already exists in nature – i.e., natural phenomena or laws of nature. Indeed, products of nature – things not made by man – are eligible for patent protection if they meet the requirements for patentability. *See Merck & Co.*, 253 F.2d at 162 ("where the requirements of the Act are met, patents upon products of nature are granted and their validity sustained."). The same goes for the Progress Clause, which says that *discoveries* may be secured to their inventors.

[305] *Funk Bros.*, 333 U.S. 130-31.

[306] *Id.* at 130.

[307] *Id.* at 31 ("The combination of species produces no *new* bacteria, no changing the six species of bacteria, and no enlargement of their range of utility. Each species *has the same effect* it always has.") (emphasis added).

narrow point of law rather than broad application of a flawed judicial construction.

Similarly, the disclosure requirements of the Patent Act are governed by 35 U.S.C. § 112. Section 112 requires, among other things, that a given patent specification both enable the invention and disclose the best mode of practicing the invention.[308] To reiterate, the enablement requirement ensures that a person of ordinary skill is able to make and use the invention,[309] and the best mode ensures that the public is given full disclosure of what is considered the preferred embodiment of the invention.[310] These requirements, along with the novelty requirements of Sections 102 and 103, ensure that a potential patentee both contribute something new to the art *and* make that art accessible to the public.

Some subject matter "excepted" from patent eligibility through judicially created doctrines speaks directly to the purposes of the enablement and best mode requirements. The justifications often used for excluding "abstract ideas" from patent protection are indeed the specific concerns addressed by the Section 112 doctrines. Courts have often used the abstract idea exception as a blunt tool to bar eligibility to innovations where Section 112 provided much more accurate tools.

Two cases are ideal examples of how broad strokes of Section 101 have been used when Section 112 speaks directly to whether a given application merits patent protection. First, in *Benson*, the case involving an algorithm to convert numbers from binary-coded-

[308] *See* 35 U.S.C. § 112 ¶ 1 (emphasis added):

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to *enable* any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the *best mode* contemplated by the inventor of carrying out his invention.

[309] *Gay*, 309 F.2d at 772.

[310] *Dana Corp.*, 860 F.2d at 418.

decimal to pure binary, the Court hinted at the proper mode of analysis. Although denied eligibility under Section 101,[311] the Court noted that the claimed invention was "so abstract and sweeping as to cover both known *and unknown* uses" of the claimed method.[312] Because enablement and best mode disclosures are judged in light of what is claimed,[313] and the breadth of the claims encompassed *unknown* uses, the specification in *Benson* did not satisfy the Section 112 requirements. The claimed invention did, however, fit squarely within the statutory definition of eligible subject matter.

In re Bonczyk[314] presents another case where Section 101 is used inappropriately in place of Section 112. The case involved a claim to a "theoretical" or "fabricated" energy structure.[315] The Federal Circuit determined that this energy structure did not satisfy the requirements of Section 101.[316] However, it is fully plausible that if Bonczyk could actually have produced this structure, it would qualify as one of the classes of Section 101 – most likely a manufacture[317] or composition of matter.[318] Therefore, it would have been more appropriate for the Court to deny patentability based on a lack of

[311] *Benson*, 409 U.S. at 71-72.

[312] *Id.* at 68.

[313] *See Eli Lilly*, 251 F.3d at 963 ("the extent of information an inventor must disclose [to satisfy the best mode requirement] depends on the scope of the claimed invention."); CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1338 (Fed. Cir. 2003) (The Patent Act "requires only that the inventor enable one of skill in the art to make and use the full scope of the claimed invention.").

[314] 10 Fed. Appx. 908.

[315] *Id.* at 909.

[316] *Id.* at 912.

[317] *See Chakrabarty*, 447 U.S. at 308 (defining "manufacture" as the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery.").

[318] *See id.* (defining "composition of matter" as "all compositions of two or more substances and . . . all composite articles, whether they be the results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids.").

enablement or disclosure of best mode, neither of which could occur if the claimed energy structure was truly theoretical – the specification would neither disclose a best mode nor allow a person of ordinary skill to make and use the invention.

All told, it appears that the judicially-created exceptions to patent eligibility are really just misapplied versions of patentability requirements. As a remedy, this part has explained how the unitary reading of the Progress Clause will expand the scope of patent-eligible subject matter to its proper scope. This expansion requires that several patent rules, namely judicially-created exceptions to patent eligibility, be re-framed to fit properly within the statutory framework of the Patent Act. The result of these two conclusions is that Section 101 presents a low hurdle for patent eligibility. It does not, however, automatically mean that every innovation is entitled to a patent. This re-framing merely means that if truly undeserving of patent protection, an innovation should be denied protection under the proper statutory provisions. It will reduce confusion over what is abstract, what a law of nature or natural phenomenon is. Instead, it will shift those questions to the much simpler, clearer questions of "does the claimed invention already exist" and "did the inventor provide the bargained-for disclosure that patent law calls for." This will lead to a more coherent, more readily-applicable patent law.

VI. Conclusion

All said, with the exception of the incoherent area of patent eligibility law, the progress laws have all evolved under an implicitly unitary reading of the Progress Clause. Design patents, functional copyrights, and certain copyright doctrines that have evolved due to the explicit recognition of a relationship between patent and copyright are all justified by the unitary reading, but not the distributive reading. Even in the case of patent

eligibility, the law can be returned to its state prior to the proposal of the distributive reading – a significantly more coherent state.

The original proponents of the distributive reading argued that, based on the structure of the Progress Clause and on the statutory scheme enacted after the ratification of the Constitution, science and the useful arts were separate and distinct objects of separate powers – the copyright and patent powers, respectively. The justifications they used imply reliance upon either an original intent or original understanding mode of constitutional interpretation.

A more in-depth review of the English precedent the Framers were familiar with, the state of progress laws during the Articles of Confederation period, and of the contemporaneous history of judicial and legislative interpretation are all at least as strongly in favor of a unitary reading as a distributive one. Given this history, and the fact that so many areas of law have evolved under an implicit unitary reading, this article calls for a reconsideration of the validity of the distributive reading.