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PROGRESS AS IMPACT: A CONTEMPORARY VIEW OF THE COPYRIGHT AND PATENT CLAUSE

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I. INTRODUCTION

The law recognizes and protects private property rights for several reasons. Property rights give an individual personal autonomy over valuable assets,[1] encourage labor and productivity,[2] ensure democracy,[3] prevent depletion of open-access resources,[4] and allocate limited resources efficiently.[5] Intellectual property rights are also largely instrumental.[6] The broader societal goal supported by intellectual property laws, particularly copyright and patents, is the progress of science (generally taken to mean "systematic and theoretical knowledge") and the useful arts (generally taken to mean "technology or commercial practices").[7] The instrumental role of intellectual property is generally recognized as laying the foundation for the exclusive rights that intellectual property owners enjoy and the monopolies that society bears for a temporary time to benefit from the creativity and inventiveness of authors and inventors.[8] Today, this view of intellectual property as instrumental in promoting progress supports a more global understanding that intellectual property contributes towards economic growth and cultural well-being by creating the incentives for authors and inventors to produce and disseminate knowledge and useful inventions to the rest of society.[9] Hence, because

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[1] Margaret Jane Radin, *Property and Personhood,* 34 STAN. L. REV. 957 (1982).

[2] Mark P. McKenna, *The Right of Publicity and Autonomous Self-Definition,* 67 U. PITT. L. REV. 225, 251 (2005).

[3] *See* Arthur Cockfield, *Income Taxes and Individual Liberty: A Lockean Perspective on Radical Consumption Tax Reform*, 46 S.D. L. REV. 8, 21 (2001).

[4] Garrett Hardin, *The Tragedy of the Commons,* 162 SCIENCE 1243, 1245 (1968).

[5] Daniel H. Cole, *Taking Coase Seriously: Neil Komesar on Law's Limits,* 29 LAW & SOC. INQUIRY 261, 268 (2004).

[6] However, there are natural rights justifications for intellectual property rights based on John Locke's labor theory that the person who labors to create intangible products would also have property rights in those creations. Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1540 (1993).

[7] Barton Beebe, *Bleistein, The Problem of Aesthetic Progress, and the Making of American Copyright Law*, 117 COLUM. L. REV. 319, 323 (2017).

[8] Sir Thomas Babington Macaulay's 1841 speech to the House of Commons about the burdens of copyright law encapsulated this evil so well when he called copyright law "a tax on readers for the purpose of giving a bounty to writers." Yet, Babington recognized "the necessity of giving a bounty to genius and learning" and to "willingly submit even to this severe and burdensome tax." SIR THOMAS BABINGTON MACAULAY, *A Speech Delivered in the House of Commons on the 5th of February 1841*, *in* THE MISCELLANEOUS WRITINGS AND SPEECHES OF LORD MACAULAY 609, 613 (1871).

[9] WORLD INTELL. PROP. ORG., PUB. NO. 450(E), WHAT IS INTELLECTUAL PROPERTY? 3 (2004) (stating that the intellectual property system "helps strike a balance between the interests of innovators and the public interest, providing an environment in which creativity and invention can flourish, for the benefit of all").

"the progress and well-being of humanity rest on its capacity to create and invent new works in the areas of technology and culture," legal institutions should recognize and protect intellectual property rights to reward activities that increase this capacity.[10]

While the progress goals of patent and copyright laws appear settled by case-law,[11] the meaning of "progress" itself is open to different interpretations. Some commentators, looking at the Constitutional embodiment of the progress goal for copyright and patent laws in the United States,[12] argue that the constitutional language imposes limitations on congressional power to pass broad patent and copyright laws that do not have the effect of promoting the progress of knowledge and the state of inventive endeavors.[13] Some commentators argue that the language ensures that Congress has the authority to pass copyright and patent laws that secure rights to authors and inventors for the purposes of promoting progress,[14] while others suggest that the clause

[10] *Id.*

[11] *See* Mazer v. Stein, 347 U.S. 201, 219 (1954) (the Court refers to copyright as embodying the view that "*encouragement of individual effort by personal gain* is the best way to advance public welfare through the talents of authors and inventors." (emphasis added)); Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975) (the Court says that underlying copyright is the understanding that "*[c]reative work is to be encouraged and rewarded, but private motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts*." (emphasis added)); Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984) (the Court, speaking of both copyrights and patents, points out that the "monopoly privileges that Congress may authorize are ... [not] primarily designed to provide a special private benefit. Rather, the limited grant is a means by which an important public purpose may be achieved. It is intended *to motivate the creative activity of authors . . . by the provision of a special reward.*" (emphasis added)); Graham v. John Deere Co., 383 U.S. 1, 6 (1966) (The "constitutional command ... '[to] promote the Progress [of Science]' ... is the *standard* expressed in the Constitution and it may not be ignored"); Fox Film Corp. v. Doyal, 286 U.S. 123, 127 (1932) ("The sole interest of the United States ... lie[s] in the general benefits derived by the public from the labors of authors")).

[12] U.S. CONST., art. I, § 8, cl. 8 (stating that "The Congress shall have Power … To 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." This clause is known as the "Intellectual Property Clause").

[13] 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, 1810 (2006) (stating that "the process of the Clause's framing … suggests that, in fact, the Progress Clause was intended as a limitation"); Joshua N. Mitchell, *Promoting Progress with Fair Use,* 60 DUKE L.J. 1639, 1640 (2011).

[14] Edward C. Walterscheid, *Conforming the General Welfare Clause and the Intellectual Property Clause,* 13 HARV. J.L. & TECH. 87, 95 (1999) (stating that the progress clause in the Constitution "was included, not for the purpose of limiting Congress only to the authority to grant patents and copyrights, but rather to assure that Congress would in fact have authority to issue patents and copyrights in addition to

is a mere "preamble, indicating the purpose of the power but not in limitation of its exercise."[15] There are also varied understandings of the targeted goal of progress. These ideas of progress range from increased production of knowledge and inventions qualitatively and quantitatively,[16] to their dissemination and spread in society,[17] to the creation and dissemination of works that cause no harm and contribute some "serious literary, artistic, political, or scientific value."[18]

The thing to note, however, is that society's progress depends much more on the impact and value generated from the proactive use of intellectual property, rather than on the creation and dissemination of technical knowledge that often lies dormant and unused by the intellectual property holder and society. The mere production and diffusion of patented inventions and copyrighted works will not, by default, create progress nor contribute to any advancement or betterment of society if these inventions and works are not designed to solve a problem in the market or in society, enrich their users, create wealth, or provide their users with transformative experiences.[19] A more modern and effective understanding of progress may be to consider activities that generate impactful writings and discoveries as more important than the mere creation or dissemination of these works. This will force creators and inventors to evaluate how the works they create impact markets and societies and encourage lawmakers and policymakers to develop policies and laws that facilitate the creation, dissemination, and use of more impactful works. This will necessitate the distinction between using intellectual property rights as a means of

whatever other means it saw fit to use to promote the progress of science and useful arts.").

[15] 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 1.03[A] (2019) ("This introductory phrase is, in the main, explanatory of the purpose of copyright without, in itself, constituting a rigid standard against which any copyright act must be measured."); *id.* § 1.03[B] ("[T]he introductory phrase, rather than constituting a limitation on Congressional authority, has for the most part tended to expand such authority." (footnote omitted)).

[16] Malla Pollack, *What is Congress Supposed to Promote?: Defining* "*Progress*" *in Article I, Section 8, Clause 8 of the United States Constitution, or Introducing the Progress Clause,* 80 NEB. L. REV. 754, 756 (2001).

[17] *Id.* at 756–57.

[18] Ned Snow, *The Regressing Progress Clause: Rethinking Constitutional Indifference to Harmful Content in Copyright,* 47 U.C. DAVIS L. REV. 1, 58 (2013).

[19] The United Nations Sustainable Development Goals of 2015 focus on the integration of the three dimensions of sustainable development: economic development; social development; and environmental protection, with people at the center of sustainable development. These goals are good starting point to think about creating impact through the use of intellectual property. *See generally* Ved P. Nanda, *The Journey from the Millennium Development Goals to the Sustainable Development Goals,* 44 DENV. J. INT'L L. & POL'Y 389, 390 (2016) (discussing the development and adoption of the Sustainable Development Goals world-wide).

legal protection and exclusion and, in contrast, as a means to pursue more socially and economically impactful activities. The former produce inefficiencies that at best slow progress and at worst produce deadlocks.[20] The latter has the potential to move societies towards more meaningful, connected, and collaborative spaces that become springboards for creativity, innovation, and the solution to some of the world's most pressing problems.[21]

This paper argues that the incentive-welfare functions of patents and copyrights would be enhanced by embracing a more purpose-driven view of inventions and creative expressions. This paper is divided into three parts to show how conceptualizing "progress" as the betterment of society through the use of impactful intellectual property will ultimately benefit both the creator and recipient of the work so that the incentive-welfare function of the law is maximized. Part I of the paper explores the concept of progress as a goal undergirding the patent and copyright systems and shows how the conventional understanding of progress as "creation" or "dissemination" created a widespread view that patents and copyrights are, in essence, legal protections from free-riding market competitors and users of the work. Part II demonstrates how legal protectionism of intellectual property sidelines more productive and lucrative uses of intellectual property to create business value and social impact which, in turn, produce market success, rewards, and the incentives intellectual property owners need to continue to invest in socially desirable and impactful activities. Part III discusses how

[20] *See* Christopher A. Cotropia, *The Upside of Intellectual Property's Downside,* 57 UCLA L. REV. 921, 925–32 (2010) (describing production reduction and innovation constriction as the downside to intellectual property laws); Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs,* 84 HARV. L. REV. 281, 351 (1970) (arguing that copyright protection "can lead to prices higher than necessary to secure production; it can impose large transactions costs; it can even help a firm or group of firms to limit competition throughout an industry."); Thomas B. Nachbar, *Intellectual Property and Constitutional Norms,* 104 COLUM. L. REV. 272, 354 (2004) ("The average seller of intellectual property makes no more than nominal profits; the intellectual property regime is merely a way to allow intellectual property sellers to charge more than their marginal cost because, for intellectual property producers, selling at marginal cost will always result in a loss. The presence of widespread competition among sellers of intellectual property (especially in the case of copyright) is enough to prevent them from being able to extract supracompetitive rents.").

[21] *See* Brett M. Frischmann & Mark A. Lemley, *Spillovers,* 107 COLUM. L. REV. 257–58 (2007) (arguing that positive externalities generated from innovation should be considered a social surplus that cannot be internalized through property rights); Madhavi Sunder, *IP3,* 59 STAN. L. REV. 257, 289 (2006) (arguing that intellectual property has the potential to shift the balance of inequities around the globe by transferring information and making resource-poor countries information-rich); Mark Schultz & Alec van Gelder, *Creative Development: Helping Poor Countries by Building Creative Industries,* 97 KY. L.J. 79 (2008).

intellectual property producers can build business value into their copyrights and patents so that their markets recognize and reward them for value-creation and impact and how the United Nations Sustainable Development Goals serve as a metric to assess impact. This article concludes that it is timely and appropriate to expand the understanding of progress to incorporate other concerns for social development and impact[22] as the sole instrumental goal of the copyright and patent systems.

II. THE MEANING OF PROGRESS IN THE IP CLAUSE

The words "to promote the progress of science and the useful arts" serve as the Polaris for the exercise of Congressional power under the intellectual property clause of the Constitution.[23] In *Bilski v. Kappos*,[24] the Supreme Court stated that the clause was "both a grant of power and a limitation," enabling Congress to reward authors and inventors for producing socially beneficial works and that it "reflect[ed] a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the 'Progress of Science and useful Arts.'"[25] The word "progress" by itself is, however, open to interpretation.[26] Legal historians and scholars of intellectual property and constitutional law have proposed various readings of the progress clause to provide guidance on how Congress's powers under the intellectual property clause should be exercised[27] and to help us evaluate whether congressional acts such as

[22] Simone A. Rose, *The Supreme Court and Patents: Moving Toward a Postmodern Vision of "Progress"?*, 23 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1197, 1209 (2013) (positing that the Supreme Court in Mayo v. Prometheus began to embrace a broader understanding of progress "by acknowledging access to basic "building-block" research as a fundamental right which sometimes supersedes the presumptive power of patents to incentivize research.").

[23] Goldstein v. California, 412 U.S. 546, 555 (1973) ("The objective [of U.S. CONST. art. I, § 8, cl. 8] is to promote the progress of science and the arts. As employed, the terms 'to promote' are synonymous with the words 'to stimulate,' 'to encourage,' or 'to induce.' To accomplish its purpose, Congress may grant to authors the exclusive right to the fruits of their respective works. An author who possesses an unlimited copyright may preclude others from copying his creation for commercial purposes without permission. In other words, to encourage people to devote themselves to intellectual and artistic creation, Congress may guarantee to authors and inventors a reward in the form of control over the sale or commercial use of copies of their works.").

[24] Bilski v. Kappos, 561 U.S. 593, 648 (2010) (Stevens, J., concurring).

[25] *Id.* at 648.

[26] Sean M. O'Connor, *The Overlooked French Influence on the Intellectual Property Clause,* 82 U. CHI. L. REV. 733, 735 (2015) ("... key terms such as 'Progress' remain hotly contested.").

[27] *Id.* at 810.

the Copyright Term Extension Act, which extends the copyright term by 20 years, actually promotes or restricts progress.[28] The literature on the meaning of progress can be categorized into three broad categories as follows.

A. Creation

In his article, *Congress's Power to Promote the Progress of Science: Eldred v. Ashcroft,*[29] Lawrence Solum proposed that progress meant the advancement of "learning or the continuation of scientific activity."[30] According to Solum, the words "promote the Progress of Science" meant "to encourage the advancement of science or to encourage scientific activity."[31] The phrase "encouragement of learning" is synonymous to the progress of science and could be used interchangeably.[32] Solum identified a subtle difference between progress as the advancement of a process or a cause and progress as an activity. Looking at the first Copyright Act of 1790 and its subtitle, "[a]n Act for the encouragement of learning," Solum suggested that "the first Congress believed that the promotion of the progress of science meant encouragement of learning, and therefore, . . . to 'promote the Progress' of a given activity was to 'encourage' that activity."[33] Given this interpretation, Solum believed that when the Constitution gave Congress the power to promote progress, it empowered Congress to encourage the process of creating and inventing and not the results of creative and inventive activities.[34]

Edward Walterscheid also suggested that the word "progress" means, and was intended by the founders at the 1787 Constitutional Convention to mean, "advancement in science and the useful arts, including through the efforts of writers and inventors in creating new

[28] Lawrence B. Solum, *Congress's Power to Promote the Progress of Science: Eldred v. Ashcroft*, 36 LOY. L.A. L. REV. 1, 63–78 (2002); *See* generally Mitchell, *supra* note 13, at 1651 (arguing that the "progress-promoting clause [should be read] as a grant of power," and not as an "end" or "objective" to "which Congress may legislate. This reading allowed the Court [in *Eldred v. Ashcroft*] to avoid closely considering whether the CTEA actually promotes progress and instead to skip directly to a rational basis review of the CTEA, focusing on the "limited Times" language of the IP Clause--a review the Court performed with the usual extreme deference to Congress.").

[29] Solum, *supra* note 28, at 45–46.

[30] *Id.*

[31] *Id.*

[32] *Id.*

[33] *Id.*

[34] *Id.*

writings and finding out new discoveries of a utilitarian nature."[35] To Walterscheid, "the [Progress] Clause was intended to provide an incentive for advances in science and the useful arts through encouragement of the intellectual efforts of writers and inventors."[36]

Michael Birnhack offers a more expansive and nuanced view of progress which goes beyond the creation of creative and inventive works by first-in-place authors and inventors that are often romanticized as sole genius creators.[37] In his article, *The Idea of Progress in Copyright Law,*[38] Birnhack argues that progress means building up the existent state of knowledge and removing impediments to the acquisition of it.[39] As Birnhack points out, there are two metaphors in copyright that capture this meaning of progress. The first, Birnhack calls "On The Shoulders Of Giants, or simply OTSOG" describes new acquisitions of knowledge from creators and inventors, "giants of the past."[40] Change, and as a result progress, occurs when we rely on knowledge created by our predecessors to enable us to "see even further ahead."[41] The second metaphor, which Birnhack calls "building," describes the production of knowledge as a human enterprise involving many authors and inventors who lay "bricks" over the bricks (or the works) of others and build on each other's works as equals.[42] Birnhack concludes by suggesting that we should think about "copyright law as a legal space that addresses the knowledge process: the creation, dissemination, and use of knowledge."[43]

B. Diffusion or Spread

Malla Pollack's article, *What is Congress Supposed to Promote?*,[44] advances the idea that the word "progress" in the intellectual property clause means spread, diffusion, or distribution.[45] Pollack argues that "Congress may only create temporary individual rights for 'authors' or

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[35] Edward C. Walterscheid, *The Preambular Argument: The Dubious Premise of Eldred v. Ashcroft,* 44 IDEA 331, 374 (2004).

[36] *Id.*

[37] *See* Martha Woodmansee, *The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author'*, EIGHTEENTH-CENTURY STUDIES, Summer 1984, at 425, 426.

[38] Michael D. Birnhack, *The Idea of Progress in Copyright Law,* 1 BUFF. INTELL. PROP. L.J. 3, 3 (2001).

[39] *Id.* at 53.

[40] *Id.* at 41–43.

[41] *Id.* at 43.

[42] *Id.* at 46.

[43] *Id.* at 56.

[44] Pollack, *supra* note 16, at 754.

[45] *Id.* at 755.

'inventors' to exclude others from use of 'their respective writings and discoveries' when such individual rights 'promote' the spread of knowledge . . . and technology . . . ."[46] Looking at dictionaries, the Pennsylvania Gazette, and the "Idea of Progress" literature, Pollack attempted to glean the meaning of the word as it would have been understood and used in the 18th century when the Constitution was drafted.[47] She asserts that the "ordinary American of 1789 was most likely to have read 'progress' in the Progress Clause of the Constitution to mean 'spread.'"[48] Other scholars, such as Joshua Mitchell, understand progress to mean a qualitative advancement of knowledge and technology but also the dissemination of such works.[49] As Mitchell puts it, "[a] work that advances knowledge in some field but is not disseminated cannot be said to have promoted progress in any meaningful sense. Similarly, a work that is disseminated among the masses but that does not expand the boundaries of knowledge is not progress promoting."[50]

C. Advancement

Another body of literature advances the view that the word "progress" means an advancement of science and the useful arts. Mitchell understood the word to mean a qualitative advancement of knowledge and technology.[51] Other scholars such as Sean O'Connor, argue that progress encouraged through copyright and patent laws must be bounded by "fields in which demonstrable progress can be shown," which would exclude the fine arts and many of the works that copyright law protects.[52] To O'Connor, these were fields "based on taste or sentiment [that] could not be shown to 'progress.'"[53] These fields would also lead to "impossible value judgments for granting exclusive rights,"[54] the type of judgment that the Supreme Court was reluctant to make in *Bleistein v. Donaldson Lithographing Co.*[55]

Barton Beebe also makes the point that the progress clause did not include the fine arts.[56] Where "science" in the clause was generally considered in the 18th century to encompass "systematic theoretical and

[46] *Id.* at 756.
[47] *Id.* at 794–809.
[48] *Id.* at 809.
[49] Mitchell, *supra* note 13, at 1658–59.
[50] *Id.*
[51] *Id.* at 1657.
[52] O'Connor, *supra* note 26, at 740–41.
[53] *Id.* at 787.
[54] *Id.* at 820–21.
[55] Bleistein v. Donaldson Lithographing, Co., 188 U.S. 239, 251 (1903).
[56] Beebe, *supra* note 6, at 323–24.

empirical knowledge" and "useful arts" protected "technology or commercial practices,"[57] "it was [also] well recognized at the time that neither category encompassed the fine arts."[58] Courts have, however, construed the progress clause to include the fine arts and aesthetics[59] and Beebe points out that this has resulted in two different standards for what constitutes progress.[60] In patent law, progress means an advancement over previous knowledge because it is easier to make qualitative judgments about whether a work "supersedes, refines, or supplements previous" ones.[61] But for copyright protected works, many of which are artistic and aesthetic, the standard is the accumulation of works and the goal is to encourage the creation of as many works as possible.[62] In Beebe's words, "[t]he weak accumulationist account of aesthetic progress retreats to the quantitative in an effort to disengage from the qualitative."[63]

Datan Oliar reads "progress" as a limitation, and not a non-binding preamble, to Congress's exclusive rights granting powers.[64] As a result of this limitation, Oliar argues that Congress is bound to promote progress through the laws it passes to protect authors and inventors.[65] Oliar argues that if the progress clause was seen as a limitation on congressional power, the Supreme Court in *Eldred v. Ashcroft* would have decided that the Copyright Term Extension Act was not a constitutional exercise of power under the intellectual property clause because goals that do not specifically relate to the promotion of progress would not have been considered legitimate goals.[66] Oliar does not, however, touch on what progress means as a verb so it is unclear from his article whether the limitation he argued for meant that Congress's power extended to passing laws that increased the production of works and the diffusion of works or whether Congress's powers were even more specifically limited to encouraging the promotion of works that advanced knowledge and the state of technology.

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[57] *Id.* at 323.

[58] *Id.*

[59] Beebe, *supra* note 7, at 325.

[60] *Id.* at 325–26.

[61] *Id.* at 345.

[62] *Id.* at 346.

[63] *Id.*

[64] Oliar, *supra* note 13, at 1776.

[65] *Id.* at 1831–32 (arguing that Congress would need to show that its goals underlying the Copyright Term Extension Act can be checked against "some objective indicia for the promotion of progress that go beyond Congress's subjective belief.").

[66] *Id.* at 1832 (stating that the Court in Eldred allowed Congress to pursue goals such as "the improvement of foreign balance of trade and the achievement of international uniformity of laws" while passing CTEA, goals which would not have been allowed if the in-pursuit-of-progress limitation was read into the Constitution).

Ned Snow, in his article *The Regressing Progress Clause,* argues that the progress clause should be used to disqualify copyrightable works from legal protection if their content fails to promote or impedes progress.[67] Snow argues that commentators and courts have construed the progress of science to be the "creation and spread of [general] knowledge and learning"[68] and "implie[d] that any sort of content is eligible for copyright protection" even if the content offends public morals or is harmful.[69] Snow posits that the purpose of copyright law is not to encourage creativity in authors but to encourage the advancement of useful content.[70] A normative reading of the progress clause would necessitate that only works demonstrating "at least a modicum of social value rather than those that would regress Science and useful Arts" should be encouraged.[71] Snow advocates for content discrimination through the progress clause and maintains that "resources that the government invests in creating and maintaining a monopoly system should not advance that which is wasteful, harmful or otherwise regressive to society."[72] While Snow does not explicitly state what might amount to actual progress, his idea that the progress clause lays out a standard for value-judgement and content-discrimination to prevent works that are "otherwise regressive to society" indicates that, to him, progress means an advancement and betterment from the status quo.[73]

D. As Interpreted by the Court

In *Golan v. Holder,*[74] the Supreme Court examined Section 514 of the Uruguay Round Agreements Act (URAA), which grants copyright protection to works protected in their country of origin but lack protection in the United States for any of the following three reasons: (1) they originated from a country that did not enjoy protection from the United States at the time they were published; (2) they were sound recordings fixed before 1972; or (3) the author had not complied with certain U.S. statutory formalities.[75] The plaintiffs, who were orchestra conductors, musicians, publishers, and other users of these works in the public domain, argued that Congress, in passing § 514, exceeded its

[67] Snow, *supra* note 18, at 53.
[68] *See*, *e.g., id.* at 39 (quoting Golan v. Holder, 565 U.S. 302, 324 (2012)).
[69] *Id.*
[70] *Id.* at 50–51.
[71] *Id.* at 56.
[72] *Id.* at 56–57.
[73] *Id.*
[74] Golan v. Holder, 565 U.S. 302 (2012).
[75] *Id.* at 307.

authority under the Copyright Clause.[76] The Court considered the plaintiffs' claim that Congress lacked the authority, under the progress clause, to enact § 514 because the removal of works from the public domain meant that the plaintiffs did not have the content to create works of their own, which, in turn, restricted the creation of new works.[77] Rejecting the argument, Justice Ginsburg stated that the progress clause did not limit the provision of incentives to just the creation of new works; the clause also encouraged the *dissemination* of works.[78] To the Court in *Golan*, "progress" meant the creation and dissemination of creative works.

Because of the difficulty of measuring the effect of creative works on the state of existing knowledge in any qualitative way, for the copyright system, the courts take "progress" to mean the creation and spread of knowledge.[79] Earlier, in *Sony v. Universal City Studios*,[80] the Supreme Court stated that copyright law served an "important public purpose," which is "to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired."[81] The Court's focus here seemed to be on the creation of works through copyright laws. The Court in *Harper & Row Publishers, Inc. v. Nations Enterprises Inc*.[82] a year later stated that copyright laws passed under the intellectual property clause are "intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired."[83] The Court examining the purpose of copyright said that "[b]y establishing a marketable right to the use of one's expression, copyright supplies the economic incentive 'to create and disseminate ideas.'"[84] These copyright cases have tended to focus on the act of creating and disseminating creative works as the impetus for progress.[85]

Patent cases go a step further beyond just the creation and dissemination of works. As the Supreme Court explained in *Graham v. John Deere*, progress means "[i]nnovation, advancement, and things which add to the sum of useful knowledge" that might support a

[76] *Id.* at 307–08.
[77] *Id.* at 324–25.
[78] *Id.* at 325–26.
[79] *See id.*
[80] Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 419 (1984).
[81] *Id.* at 429.
[82] Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 546 (1985).
[83] *Id.*
[84] *Id.* at 558.
[85] *See generally Sony Corp. of Am.,* 464 U.S. 417 (1984); *Nation Enters*., 471 U.S. 539, 546 (1985).

competitive economy.[86] These elements of progress "are inherent requisites in a patent system which by constitutional command must 'promote the Progress of [the] useful Arts.'"[87] The Court in *KSR v. Teleflex*[88] made a similar observation that "[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress."[89] More recently, the Supreme Court in *Bilski v. Kappos* said that novelty, non-obviousness, and patent disclosures exist to "serve a critical role in adjusting the tension, ever present in patent law, between stimulating innovation by protecting inventors and impeding progress by granting patents when not justified by the statutory design."[90] The view that progress is achieved through innovation aligns more with scholarly commentary that progress should be an advancement from the status quo.[91] In contrast, courts construe progress with copyright law, which is more aligned with creation and spread.[92] This may be because of the difficulty of making qualitative assessments when it comes to creative works, as O'Connor argues.[93]

III. PROGRESS AS IMPACT

Construing the word "progress" in the intellectual property clause as the creation, diffusion, or advancement of knowledge and technology is a good springboard for thinking about what we hope to achieve through copyrights and patents.[94] Encouraging authors and inventors to produce quantitatively more and qualitatively better works is a good thing for society.[95] Building intellectual capital, spreading knowledge, improving technological practices, and providing others with an education yield many beneficial outcomes to the public.[96] However, encouraging the creation and dissemination of more and better works to

[86] Graham v. John Deere Co., 383 U.S. 1, 6 (1966).
[87] *Id.*
[88] KSR v. Teleflex, 550 U.S. 398, 419 (2007).
[89] *Id.* at 419.
[90] Bilski v. Kappos, 561 U.S. 593, 609 (2010).
[91] O'Connor, *supra* note 26 at 810
[92] *Id.* at 771.
[93] *Id.* at 786–87.
[94] Laurence R. Helfer, *Toward a Human Rights Framework For Intellectual Property*, 40 U.C. DAVIS L. REV. 971, 977 (2007) (using intellectual property to "highlight the need to develop a comprehensive and coherent 'human rights framework"').
[95] *See* Neil Weinstock Netanel, *Copyright and A Democratic Civil Society*, 106 YALE L.J. 283, 339–40 (1996).
[96] Iqbal Quadir, *Capitalizing on Our Intellectual Capital*, HARV. BUS. REV., May 2012, https://hbr.org/2012/05/capitalizing-on-our-intellectual-capital?autocomplete=true (last visited, September 16, 2020).

society through the grant of exclusive rights does not necessarily advance progress.[97]

Creating and disseminating creative and inventive works may encourage progress in the field,[98] heighten current standards of knowledge and technology,[99] and even advance the state of the industry.[100] But there is an important distinction between (1) *advancing the current state of knowledge, technical skills, and technological know-how* and (2) *advancing the human condition and well-being of members of society that* the literature has yet to make.

A. History of Progress as Impact

A paragraph in the earliest copyright statutes of Massachusetts, New Hampshire, and Rhode Island equates progress with the advancement and "improvement of knowledge, the progress of civilization, and the advancement of human happiness."[101] This differs from progress measured against qualitative or quantitative advancements of knowledge and technical skills. Instead, in these early preambles to state copyright acts, the focus was on a more effective and practical outcome, i.e., the improvement of society as a whole, as a young United States tried to figure out the best and cheapest way of directing creative, innovative, and entrepreneurial activity towards important sectors, such as manufacturing and agriculture, to build the nation.[102]

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[97] *See* Tim Wu, *Intellectual Property, Innovation, and Decentralized Decisions,* 92 VA. L. REV. 101, 103–04 (2006) ("While we may accept that intellectual property offers strong ex ante incentives to innovate . . . there is a flip-side danger of too much centralization of decisionmaking. . . . For example, in 1892, the United States granted an exceptionally broad patent to Thomas Edison for his light bulb. The result was to centralize light bulb decisionmaking in the Edison company for approximately twelve years. The results were not inspiring. Improvement in incandescent lighting became a one-company show, and many competitors were put out of business.").

[98] Rochelle Cooper Dreyfuss, *Does IP Need IP? Accommodating Intellectual Production Outside Intellectual Property Paradigm,* 31 CARDOZO L. REV. 1437, 1462 (2010) ("[E]mpirical evidence suggests that formal intellectual property rights are particularly important for new entrants, at least in certain fields.").

[99] Sunder, *supra* note 21, at 332 ("[A] cultural theory of intellectual property recognizes not only the symbiotic relationship between technology and intellectual property, but also views intellectual property—including its technology policy—within a context of cultural development and social movements, from the rise of identity politics to the elaboration of Knowledge Societies and the rumblings of a New Enlightenment.").

[100] Wu, *supra* note 97, at 113 (discussing how intellectual property rights affect "product development decisions in the industries influenced by intellectual property").

[101] Oliar, *supra* note 13, at 1807.

[102] 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, 34 (1994).

Creative thinking, innovation, and entrepreneurial activity are more important than the creation and dissemination of creative and inventive works if the outcome or progress we hope to achieve is the improvement of society.[103] The improvement that the founding fathers sought through copyrights and patents was to build a young nation,[104] encourage creativity and innovation in important sectors,[105] and find a way to promote progress of science and the useful arts.[106] The intellectual property clause served a purpose in the Constitution but it was not so much as a recognition of the powers that Congress had to promote progress as it was an instruction on *how* Congress had to achieve progress.[107] Progress that might have built a young nation coming up in the 18th century could be achieved in many ways[108] and the grant of patents and copyrights may not have been the most effective way of encouraging creative, innovative, and entrepreneurial activity necessary to encourage industrial innovation.[109]

Edward Walterscheid hypothesizes that the grant of exclusive rights was the most cost-effective and pragmatic way for the government to "encourag[e] the rise of manufacturing while providing the desired pecuniary incentive to inventors and authors."[110] As a member of the public at that time observed, the intellectual property clause, "[a]s to those monopolies, which, by way of premiums, are granted for certain

[103] Aaron X. Fellmeth, *Uncreative Intellectual Property Law*, 27 TEX. INTELL. PROP. L.J. 51, 55 (2019) (arguing that "[t]he widespread belief that intellectual property law exists primarily to promote creativity is a myth. A nuanced examination of the relevant statutes, and of the long history of jurisprudence interpreting them, leads to the conclusion that creativity is not really at the core of intellectual property law at all.").

[104] Walterscheid, *supra* note 102, at 34.

[105] *Id.*

[106] *Id.* at 45–48.

[107] *Id.* at 33 ("The clause was intended not so much as an express authority to promote the progress of science and the useful arts, but rather as a means of ensuring authority to do so in a particular way, namely, by securing exclusive rights for limited times to authors and inventors in their respective writings and discoveries.").

[108] Building the right environment for healthy competition (as opposed to monopolies) is one way to advance a sector in the economy. Fellmeth, *supra* note 103, at 55–56 ("While creativity is not irrelevant to these bodies of [patent and copyright] law[s], the popular claim that promoting creativity is the sole or primary purpose of either copyright or patent law is misconceived."). *See also* Rafi Mohammed, *The Taxi Industry Can Innovate, Too,* HARV. BUS. REV. (February 13, 2015), https://hbr.org/2015/02/the-taxi-industry-can-innovate-too (arguing for the need to deregulate the taxicab industry and for taxicabs to start innovating to continue to be relevant).

[109] Walterscheid, *supra* note 102, at 33 (noting that "a strong movement would arise in Europe in the nineteenth century that would argue that [the granting of exclusive rights for limited times in writings and inventions or discoveries] was precisely the wrong way to encourage industrial innovation.").

[110] *Id.* at 34.

years to ingenious discoveries in medicine, machines, and useful arts; they are common in all countries, and more necessary in this, as the government has no resources to reward extraordinary merit."[111]

Patent and copyright laws may be the most efficient way to achieve progress through the creation and dissemination of intellectual works in the hopes that they advance knowledge and technological practices for the benefit of society.[112] Encouraging the creation and dissemination of these works will, economists posit, produce dynamic economic efficiencies resulting in improvements over the existing state of technological skills and knowledge.[113] Efficiency is, however, not the same as effectiveness.[114] And encouraging the creation and dissemination of creative works through patent and copyright laws is not necessarily the most effective and direct way to promote progress in society, create industrial transformations, and improve the human condition.[115] For example, one wonders how society would progress if someone invented and patented any of these things, all of which actually received a patent:

> [A] face mask to prevent a person from eating, a bird diaper, an apparatus for simulating a 'high five,' an air conditioning unit for a shoe (to keep one's feet cool), a method of swinging on a swing, an electronic toilet queue, a dust cover for a dog, and a method of exercising a cat by using a laser pointer (like a flashlight) on the floor and moving the beam of light so the cat chases it.[116]

Producing and disseminating copyrighted and patented works without thinking of how they will impact the market, industry, or economy will not promote progress especially if there is nothing in the law that premises the grant of exclusive rights on innovative and

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[111] *Id.* at 56.

[112] ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 6 (2011) (saying that "[e]fficiency is an important goal in any area of the law, and IP is no exception. The imprint of this important principle is all over IP law; in fact many aspects of the social practice known as IP law cannot be effectively explained without reference to the principle of efficiency." Merges then goes on to categorize efficiency as a second-order rather than foundational goal of the intellectual property systems.).

[113] Mark A. Lemley, *The Economics of Improvements in Intellectual Property Law,* 75 TEX. L. REV. 989, 997 (1997).

[114] *Id.* at 998–99 (explaining that "The more absolute the property right given to original authors and inventors, the more critical efficient licensing is to subsequent innovation, and the more sensitive the industry is to market failures in licensing.").

[115] *See e.g.,* Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513, 515 (2009).

[116] Kimberly A. Moore, *Worthless Patents,* 20 BERKELEY TECH. L.J. 1521, 1524–25 (2005).

creative thought by the inventor author.[117] As Aaron Fellmeth shows, intellectual property laws themselves do not compel creativity or innovativeness.[118] While patents and copyrights encourage inventiveness and creativity, the specific right-granting provisions of the law do not require that the author show that there was some form of creative thinking or innovation that led to the creation of the work.[119] This thereby discounts the "claim that promoting creativity is the sole or primary purpose of either copyright or patent law."[120] Fellmeth further asserts that "not only are these bodies of law not about creativity, it is not even accurate to speak of them as "incentivizing" in the first place[121] in that the exclusive rights granted by the law are, instead of a reward, just a cost-effective way for the government to correct an imperfect market for public goods where there is susceptibility to free-riding.[122]

B. Alternative Methods of Promoting Progress

The grant of patents and copyrights to encourage the creation and dissemination of knowledge and technological skills is not the only way to promote the progress of science and the useful arts. Exploring better and more effective ways of achieving the goal of progress is beneficial to society. Two questions arise if, as Walterscheid argued, the copyright and patent clause was intended to only provide the authority to Congress to promote progress in a very specific mode i.e., "by securing exclusive rights for limited times to authors and inventors in their respective writings and discoveries."[123] The first question is how would the government promote progress more effectively if not through its authority to grant exclusive rights to authors and inventors under the intellectual property clause? Second, how do we think about progress more practically in contemporary societies when the creation and dissemination of knowledge and technological know-how through copyrights and patents do not always improve the human condition or benefit society as a whole?[124]

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[117] Fellmeth, *supra* note 103, at 91–92.

[118] *Id.* at 84–88 (describing how creative and innovative thinking is not a prerequisite to the grant of a patent or a copyright).

[119] *Id.*

[120] *Id.* at 56.

[121] *Id.*

[122] *See id.* at 93–95. *See also* Walterscheid, *supra* note 102, at 34–35.

[123] Walterscheid, *supra* note 102, at 33.

[124] Margaret Chon, *Intellectual Property and the Development Divide*, 27 CARDOZO L. REV. 2821, 2823 (2006) (stating that "the field of development economics suggest[s] strongly that intellectual property should include a substantive

1. Promoting Progress Effectively

Randall Holcombe pointed out that there is a difference between progress and growth.[125] Growth, such as economic growth, is measured by an increase in key economic indicators such as income growth.[126] Progress, on the other hand, is measured by changes in types of output and methods of production as well as an improvement in human welfare.[127] Holcombe noted the increase and growth in the quantity of output is a direct result of "changes in both the nature of output and the processes," which Holcombe considers to be progress.[128] Progress in one sector of the economy also has an impact on other sectors as the benefits from one sector overflows into another.[129] In his observations about the growth of the automobile industry, Holcombe said:

> The growth of the automobile industry in the twentieth century illustrates the importance of changes in both production processes and the types of goods produced. *Economic progress meant enhancing people's transportation options* by making automobile travel available to a large segment of the population, changing the type of output. Assembly line production allowed a substantial increase in the output of automobiles per worker. But focusing on the growth in output per worker obscures the more important fact that the types of goods produced, and the way they were being produced, had been substantially transformed within that span of a century.[130] (emphasis added)

It is important in our thinking about progress to realize that growth and progress are not synonymous.[131] Growth is necessarily an incidental consequence of progress but it is also possible to have growth without achieving any form of progress.[132] As Holcombe points out: "[e]conomic analysis has tended to focus on growth—the production of increasing amounts of output—so it is important to see the distinction

equality principle, measuring its welfare-generating outcomes not only by economic growth but also by distributional effects.").

[125] Randall Holcombe, *Progress and Entrepreneurship,* Q. J. AUSTRIAN ECON., Fall 2003, at 3, 8.

[126] *Id.* at 4.

[127] *Id.*

[128] *Id.* at 6.

[129] *Id.* at 7.

[130] *Id.*

[131] *Id.* at 8.

[132] *Id.*

between growth and progress, and to see that in the long run, progress brings with it growth, but growth does not necessarily imply progress."[133]

To promote progress effectively requires governments to figure out its sine qua non so it can create the conditions essential to have not just incremental growth but actual progress that enhances lives and improves the human condition. Having healthy innovation policies in place, encouraging creative thinking, and supporting entrepreneurial activities are more central to building a competitive economy and would be more effective in promoting progress than growing a knowledge base and technological know-how quantitatively and qualitatively without considering how those outputs actually impact society.[134] This illustrates that the exclusive rights granted through patent and copyright laws are not the only way to create and build a competitive economy, but they are also a pragmatic, and cost effective way to do so.[135]

John Dewey's ideas on progress would help governments understand their role in promoting it outside of the intellectual property system. Dewey discussed two observations in his paper, *Progress*.[136] The first is progress is not the product of social change but rather of people who decide to make social change a priority.[137] The second observation is the "ease of social change is a condition of progress."[138] Dewey goes on to restate his point that "while social change … represents an indispensable condition of progress, it does not present a guarantee for progress. The latter depends upon deliberate human foresight and socially constructive work."[139] If governments take Dewey's points about progress seriously, they would direct and invest more resources into creating the conditions in which human beings could decide to make progress a priority.[140]

Often the people with the greatest direct impact on progress turn out not to be authors and inventors, but rather entrepreneurs.[141] Holcombe

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[133] *Id.*

[134] *Id.*

[135] *See generally* Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs,* 84 HARV. L. REV. 281 (1970) (expressing skepticism that exclusive rights can effectively build a thriving robust economy). *See also* Walterscheid, *supra* note 102, at 34 (stating that in "their desire to follow the English practice of granting exclusive rights" by issuing patents, "more than anything else the delegates' reason was a purely pragmatic one…[it] would cost the federal government the least to implement").

[136] John Dewey, *Progress,* 26 INT'L J. ETHICS, 311, 313–14

[137] *Id.*

[138] *Id.* at 314.

[139] *Id.* at 315.

[140] *Id.* at 311.

[141] Holcombe, *supra* note 125, at 15–17.

pointed out that much of progress is a direct result of entrepreneurship.[142] Entrepreneurial activities uniquely focus on developing and innovating new types of products and services (outputs) that satisfy customer desires and transform their experiences, while at the same time finding more profitable and innovative methods of production.[143] Governments committed to promoting progress must find ways to support and encourage entrepreneurs and provide them with the environment that allows for creative thinking and innovation.[144]

The promotion of progress does not have to center on the grant of intellectual property rights. While exclusive rights are efficient in encouraging the production and dissemination of creative and inventive works, they do not directly encourage entrepreneurship.[145] For progress, having intellectual property rights is helpful but having entrepreneurship is essential.[146] The government should build the space to help entrepreneurs think creatively and be innovative, engage in multi-disciplinary or cross-industrial collaboration, develop human-centric designs, and give them the opportunity to effectively meet market needs through quick trials and errors and the redesigns of products or services.[147] Promoting and facilitating entrepreneurship and helping entrepreneurs bring their product or service to the market is the most effective way to promote progress without granting exclusive rights to authors and inventors.[148]

2. Thinking About Progress Practically

The exclusive rights granted and protected by patents and copyright laws can be an efficient and cost-effective way of promoting progress for the government. But patents and copyrights *per se* do not generate entrepreneurial activity so essential to progress because they target authors and inventors and not entrepreneurs.[149] The right to make

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[142] *Id.* at 4 ("The changes in types of output and methods of production that create economic progress are the result of entrepreneurship…").

[143] *Id.* at 9.

[144] *Id.* at 19.

[145] Bilski, 561 US at 651.

[146] Holcombe*, supra* note 125, at 10.

[147] Steven H. Hobbs, *Toward a Theory of Law and Entrepreneurship*, 26 CAP. U. L. REV. 241, 268 n.132 (1997).

[148] *See generally* Walterscheid, *supra* note 35, at 376 (2004) (suggesting that the promotion of entrepreneurship can be effective for progress, as opposed to granting individuals exclusive rights).

[149] *See generally* Steven H. Hobbs, *Entrepreneurship and Law: Accessing the Power of the Creative Impulse,* 4 ENTREPRENEURIAL BUS. L.J. 1 (2009).

copies under §106(a) of the Copyright Act[150] might be valuable to an author who just completed a novel and would like to assign that right to a publisher but the reproduction right but may not even encourage entrepreneurial activity, which centers more on idea generation, market testing, marketing, and sales,[151] none of which require an assignment of an exclusive right to exclude to proceed.[152] In addition, asserting—or even expecting partners to enter into a non-disclosure agreement—might turn off potential partners who might otherwise work with an entrepreneur.[153] Emphasizing and trading in exclusive rights over creative and inventive works would be at odds with entrepreneurship that is more "opportunity obsessed, holistic in approach, and leadership balanced" than rights-based.[154] And progress through entrepreneurship must be a product of high-creativity, experimentation, failure and reinvention in order to obtain value, not just for the entrepreneur, but for all participants and stakeholders in the process.[155]

A more practical understanding of progress through the grants of patents and copyrights must take into account the fact that the entrepreneurial process depends less on the creation and dissemination of knowledge and technological know-how and skills to generate value. Instead, at the heart of the entrepreneurial process is market analysis and the "recognition of opportunities, followed by the will to seize these opportunities," calculated risk-taking, creative thinking (as opposed to creative production), innovation (as opposed to invention), and the design of products and services that have market resonance.[156] The reward here is market success and pay-out, not for the production and

[150] 17 U.S.C. § 106(a) (2018).

[151] Hobbs, *supra* note 149, at 3 ("the entrepreneurial process is fundamentally about dynamic change in the manner in which services and products are created and/or recreated. The entrepreneur recognizes possibilities for building a business or organization, seeks the resources necessary for bringing the enterprise into existence, and successfully develops plans for bringing the service or product to market.").

[152] Adam Mossoff, Exclusion and Exclusive Use in Patent Law, 22 HARV. J.L. & TECH. 321, 327 (2007) ("the Federal Circuit has stated bluntly that it is '"elementary'" that '"a patent grants only the right to exclude others and confers no right on its holder to make, use, or sell'" an invention").

[153] Brad Bernthal, *Investment Accelerators,* 21 STAN. J.L. BUS. & FIN. 139, 144 (2016) ("Many industry professionals would not become mentors if formality were required. Professional investors active in entrepreneurial finance, for example, refuse to sign NDAs and confidentiality agreements in order to avoid the risk of liability. Investors and certain entrepreneurs, moreover, will not enter into direct agreements for compensation because they would violate an express or implied duty of loyalty agreement to work solely for a primary employer.").

[154] Hobbs, *supra* note 149, at 20.

[155] *Id.* at 3.

[156] *Id.* at 4.

dissemination of products and services, but for the impact the product or service has on the market, the lives of its users, and society.[157]

Implicit in this entrepreneurial process is the ability for entrepreneurs to learn, especially from unsuccessful attempts at innovation and bringing a product or service to fruition.[158] A more practical approach to thinking about progress through entrepreneurial activity is to identify how these activities—risk-taking, creative-thinking, market-testing—may be directed towards improving society and creating a space where learning and relearning can happen.[159]

Thinking of the progress of science and the useful arts in a more practical way can be used to improve society. The way intellectual property rights are currently used, as a right to exclude used to exert monopolistic control over the market,[160] had not been as effective as entrepreneurial activity in moving industries, the economy, and society towards something better and in improving social welfare.[161] An increment in the production and dissemination of patents and copyrights may be used as a measure for economic growth. But, as Holcombe rightfully pointed out, growth is not synonymous with progress,[162] and the correlation between intellectual property production and an increase in industrial and economic activity does not establish a causal link between intellectual property production or dissemination and progress.[163]

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[157] *Id.* at 11.

[158] Ronald M. Sandgrund*, Can Entrepreneurial Principles Make You a Better Lawyer?,* COLO. LAW., Jan. 2020, at 18, 21.

[159] TOM KELLEY & DAVID KELLEY, CREATIVE CONFIDENCE: UNLEASHING THE CREATIVE POTENTIAL WITHIN US ALL 50–52 (2013) (describing how successful entrepreneurs embrace and learn from failure).

[160] Benjamin N. Roin, *Intellectual Property Versus Prizes: Reframing the Debate,* 81 U. CHI. L. REV. 999, 1014 (2014) ("[I]ntellectual property is not a legal right to monopoly profits. Intellectual property merely provides the government an option to allow innovators to collect monopoly profits.").

[161] Shobhit Seth, *Why Entrepreneurship is Important to the Economy*, INVESTOPEDIA (July 22, 2019), https://www.investopedia.com/articles/personal-finance/101414/why-entrepreneurs-are-important-economy.asp.

[162] Holcombe, *supra* note 125, at 4, 8 ("If one wants to use economic analysis to understand how human welfare

has improved over time, and how it can continue to be improved, then the analysis must focus on progress, broadly defined, rather than narrowly on income growth.").

[163] Walterscheid, *supra* note 102, at 36 ("There is a natural tendency to suggest that the dramatic increase in patenting activity in England from 1760 onward correlates well with the increase in economic and industrial activity resulting from the industrial revolution. While no hard evidence has been developed that the Framers were in fact cognizant of such a correlation, nonetheless, they undoubtedly were aware of the significant increase in industrial and economic activity in Great Britain and sought to provide a framework of governance that would permit the national

A different benchmark is needed to help decide when intellectual property rights actually promote progress and improve social welfare. As entrepreneurial activity emerges as the sine qua non of progress, understanding the value of patents and copyrights to entrepreneurs becomes important because how entrepreneurs use these exclusive rights and how their value is perceived by an entrepreneur will have a direct effect on entrepreneurship and ultimately, progress.[164]

As human beings whose entrepreneurial activities and determination to improve the human condition contribute to a better society and advance social welfare, people have a direct effect on how we progress collectively, whether as a community, a country or as global citizens, and our use of resources must be responsible.

Garrett Hardin's seminal 1968 essay on "the tragedy of the commons" describes the unfortunate consequence of having a common pasture that was unowned and made accessible to everyone.[165] Hardin explained that when a common open-access resource is shared by many people, each user's self-interest will cause him to maximize his use of the commons as much as possible, often at the expense of the rest of the community.[166] When every user tries to capture all the benefit of the resource for himself while imposing the cost of his use on everyone else in the community, the resource is overused and becomes depleted.[167] In Hardin's words, "Each man [becomes] locked into a system that compels him to increase his herd without limit–in a world that is limited."[168] This is the tragedy of the commons.[169] As Hardin points out, when people are allowed to pursue self-interest in an open-access commons, the overuse of the resource will lead to ruin.[170] To avoid the tragedy, Hardin proposes implementing access and use controls of the underlying resource.[171]

The tragedy of the commons has been used by some courts and scholars to justify intellectual property rights.[172] The justification goes

government to provide incentives similar to those perceived to be associated with Great Britain's patent system").

[164] *See* RANDALL HOLCOMBE, ENTREPRENEURSHIP AND ECONOMIC PROGRESS 1, 38 (2007).

[165] Hardin, *supra* note 4, at 1244.

[166] *Id.*

[167] *Id.*

[168] *Id.*

[169] *Id.*

[170] *Id*. ("Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.").

[171] *See id.* at 1245–46.

[172] Mark A. Lemley, *Ex Ante Versus Ex Post Justifications For Intellectual Property,* 71 U. CHI. L. REV. 129, 141–42 (2004).

something like this: because intellectual property works like copyrightable material, can be overexposed and their value whittled down, intellectual property rights are necessary so that these works can be efficiently exploited in the market and the intellectual property owner able to decide on the conditions of use.[173] For example, William Landes and Richard Posner stated that "all valuable resources, including copyrightable works, should be owned, in order to create incentives for their efficient exploitation and to avoid overuse."[174] In response, Mark Lemley pointed out "[t]his 'tragedy of the information commons' theory is not only distinct from, but indeed largely at odds with, the classic incentive story" because "on this explanation, intellectual property rights exist *not to encourage the creation and dissemination of an idea, but to suppress efficiently the overuse of the idea*"[175] (emphasis added).

The tragedy of the commons argument should not be used to justify broad expansion of intellectual property rights because intellectual property is not prone to depletion in the same way as physical and real property.[176] However, Hardin's notion that open-access resources can be ruined because of overuse and overexploitation applies to entrepreneurship, as well as the generation and testing of innovative ideas that can make the lives of their users better, happier, healthier, and more productive.[177] As successful entrepreneurship depends on the sharing of ideas, collaboration, and group ownership of a product,[178] it becomes important to recognize property rights in the collective so that: (1) the collective can market test their product or service with the assurance that they have a means of preventing unauthorized use by someone who is not a member of the collective and (2) to allow the collective to make an impact without interference when the product or

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[173] *See id.*

[174] William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright,* 70 U. CHI. L. REV. 471, 474–75 (2003) ("[W]e show that just as an absence of property rights in tangible property would lead to inefficiencies, so an absence of copyright protection for intangible works may lead to inefficiencies because of congestion externalities and because of impaired incentives to invest in maintaining and exploiting these works.").

[175] Lemley, *supra* note 172, at 142.

[176] Dan L. Burk, *Law and Economics of Intellectual Property: In Search of First Principles,* 8 ANN. REV. L. & SOC. SCI. 397, 406 (2012) ("[T]hat intellectual property does not immediately appear to be scarce or depletable in the sense that common pool real property is inevitably depleted--this is almost the definition of a non-rivalrous good. If there is no scarcity, then it would seem that there could be no tragedy; the good is effectively inexhaustible, and so a mechanism to allocate the resource would be not only unnecessary but counterproductive, imposing exclusivity where there had been open access.").

[177] *See generally id.* at 405.

[178] *See* KELLEY & KELLEY, *supra* note 159, at 186–90.

service is eventually introduced in the market.[179] When market-entry happens, market exploitation of the work becomes the entrepreneur's priority and the exclusive rights granted by copyrights and patents allow the entrepreneur to act as a gate-keeper and decide who gets to exploit the now publicly-accessible product or service.[180] The exclusive rights provide the entrepreneur and the rest of the public with a clear bright line of when and in what conditions the intellectual property can be exploited.[181] This right to exclude is important, not because the information itself is prone to overuse and ruin, but because information overuse could result in a less valuable product or service in the market when the resources used to produce it are scarce and limited.[182]

As intellectual property rights support entrepreneurial activity by ensuring that the product or service remains valuable once it is introduced into the market, governments can use these rights to ensure that they promote progress. It is essential that intellectual property rights protect the value of the entrepreneurship by making sure that scarce entrepreneurial resources that go towards producing products and services that improve human welfare are not depleted or ruined.[183] The consequence of letting entrepreneurial resources deplete and ruin will disincentivize entrepreneurial activity essential to progress.[184] In order to ensure that intellectual property rights create the necessary environment for entrepreneurship to thrive, they should be used judiciously by entrepreneurs as well.[185] Products and services that entrepreneurs put into the market and society only have progressive value if they are able to create an impact, change user experience, and create market resonance.[186] Products and services entrepreneurs introduce into the market also have to be designed well to attract

[179] Burk, *supra* note 176, at 402.

[180] Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information,* 116 YALE L.J. 1742, 1817 (2007) ("The exclusion strategy's delegation of the gatekeeping function to owners is particularly important when the uses behind the gate are costly to delineate or even to foresee.").

[181] Burk, *supra* note 176, at 406.

[182] Smith, *supra* note 180 at 1758.

[183] *See The Importance Of Intellectual Property Protection In Entrepreneurship*, YOUNG UPSTARTS (Jan. 1, 2019), https://www.youngupstarts.com/2019/01/10/the-importance-of-intellectual-property-protection-in-entrepreneurship/.

[184] *Id.*

[185] Antony Taubman, *A Typology of Intellectual Property Management for Public Health Innovation and Access: Design Considerations for Policymakers*, 4 OPEN AIDS J. 4 (2010).

[186] *See* Nish Acharya, *A Progressive Agenda For Entrepreneurship And Job Creation in America*, FORBES (Mar. 14, 2019), https://www.forbes.com/sites/nishacharya/2019/03/14/a-progressive-agenda-for-entrepreneurship-and-job-creation-in-america/#7ed233777eb5 (arguing that progressive values in entrepreneurship will be required in the next phase of the American economy).

customers and a loyal following.[187] To enable entrepreneurs to capture the market value of their product or service, entrepreneurs must be taught and encouraged to create products and services that have an impact on society and on the market.[188]

Using the intellectual property clause to promote progress through entrepreneurial activity requires us to rethink some of the standards in copyright and patent law. There may need to be more emphasis placed on the creativity and innovation which underlie entrepreneurship and the process of bringing a product or service to the market.[189] The originality standard may have to be revised to require a higher standard of creativity than that established by the Supreme Court in *Feist Publications, Inc. v. Rural Telephone Services Co.*[190] The requirement that a patent be novel and non-obvious may also have to be revised to require more creative thinking and innovation than that required by *Graham v. John Deere Co.*[191] and the cases that follow. While a lot can be written about how to change the legal standards to satisfy the idea of progress as impact and whether such changes would be constitutional and within the purview of the courts, that important analysis will have to be in a separate paper.

IV. MEASURING IMPACT

Two important metrics for measuring progress in terms of economic growth is gross national product and gross domestic product.[192] Using intellectual property's impact on GDP is a more effective measure of economic and societal progress than qualitative and quantitative assessments for the creation and dissemination of intellectual works.[193]

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[187] *See* Arjun Chaudhuri & Morris B. Holbrook, *The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty*, 65 J. MARKETING 81, 81 (2001) (brand loyalty is associated with greater market share and premium prices).

[188] *See* Acharya, *supra* note 186 (identifying cross sections between entrepreneurs and progressive social impact ideology).

[189] Fellmeth*, supra* note 103, at 55 (arguing that the purpose of intellectual property law is not to incentivize creativity).

[190] *See* Feist Publ'ns, Inc. v. Rural Tel. Servs. Co, 499 U.S. 340, 362 (1991) ("The standard of originality is low, but it does exist.").

[191] *See* Graham v. John Deere Co., 383 U.S. 1, 17 (1966) (determining patentability requires consideration of the invention's novelty, utility, and obviousness to one of ordinary skill in the art).

[192] *See* Tim Callan, *Gross Domestic Product: An Economy's All*, INTERNATIONAL MONETARY FUND (Feb. 24, 2020), https://www.imf.org/external/pubs/ft/fandd/basics/gdp.htm.

[193] *See generally* JUSTIN ANTONIPILLAI & MICHELLE K. LEE, INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: 2016 UPDATE (2016) (concluding IP-intensive

Impact has a more direct connection to progress than creation and dissemination.[194] But how do we measure impact and how do we know that the entrepreneurial activity we try to promote actually improves social welfare and enhances the human condition? One way to ensure that we as a society, a nation, and a part of the global community achieve progress is to use metrics that lead us to peace, prosperity, and environmental sustainability.[195] These are goals that ensure that we collectively progress and are able to sustain our existence on the planet. In order to direct entrepreneurial activity towards these goals and progress, the United Nations Sustainable Development Goals (SDG) should be used to help us make that paradigm shift.[196] The seventeen goals[197] that world leaders unanimously approved in September 2015 should be central to the progress we want to achieve as people, a country and a global citizenry. These goals are guideposts framing how we as a global citizenry progress toward a more sustainable future and how we should address these global challenges.[198]

When entrepreneurship focuses on developing products and services that address the sustainable goals, the effect of entrepreneurial activities on progress is direct.[199] For example, an entrepreneur who develops an app to support wellness by connecting medical providers with people who need them finds an innovative way to address health concerns and address the 3rd SDG goal of good health and well-being. In that process, the entrepreneur contributes to progress in the health sector, but the entrepreneurial activity will produce benefits that also improve complementary sectors like technology, education, and poverty as people become more health conscious and more productive and engaged in other areas of their lives. The SDG targets are good metrics to guide entrepreneurial activity toward a specified outcome. For example, one of the targets for "zero hunger" is to "end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient

industries contribute more than $6 trillion to, or 38.2% of, United States gross domestic product).

[194] *See supra* Part II.B.

[195] *See id.*

[196] *See id.*

[197] THE 17 GOALS, https://sdgs.un.org/goals (last visited Oct. 11, 2020). These goals are: no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation, and infrastructure, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, justice and strong institutions, and partnerships.

[198] *Id.*

[199] *Id.*

food all year round" by 2030.[200] For entrepreneurs in the food and agriculture industry, this target provides important and actionable metrics that will let the entrepreneur keep track of their activity and where they need to direct their actions and create impact.[201]

V. CONCLUSION

As the pace of change accelerates and society moves faster, it has become imperative to have an idea of where we would like to go. As a society, we can either progress or regress, and the choice is up to us as people to choose our destination. Progress, as Dewey pointed out, is not change and depends a lot on "human foresight and socially constructive work."[202] As we consider scientific progress and development of the useful arts under the intellectual property clause, the disconnect between acts of creating and disseminating works and social and economic progress becomes apparent. A better solution would be to identify the activities that actually have an effect on progress and bring those within the ambit of the intellectual property clause.

[200] *Id.*
[201] *Id.*
[202] Dewey, *supra* note 136, at 315.