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Peter K. Yu*

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* Copyright © 2016 Peter K. Yu, Professor of Law and Co-Director, Center for Law and Intellectual Property, Texas A&M University School of Law. This Article was inspired by the various discussions the Author had with Farida Shaheed, the former U.N. Special Rapporteur in the Field of Cultural Rights, including those at the “Patent Regimes and the Right to Science and Culture” Workshop at Yale Law School and on the “Intellectual Property and the Right to Science” panel at the 2013 International Law Weekend in New York. An earlier version of this Article was presented at the 4th International Intellectual Property Scholars Roundtable at Duke University Law School. The article also benefited from discussions with the participants of the “Intellectual Property and Human Rights” Conference at American University Washington College of Law. The Author is grateful to Sean Flynn, Amy Kapczynski, and Jerome Reichman for their hospitality and Rochelle Dreyfuss, Laurence Helfer, Amy Kapczynski, Molly Land, Lisa Ramsey, Jerome Reichman, Joshua Sarnoff, Lea Shaver, Jessica Wyndham, and other participants of these events for their valuable comments and suggestions.
WHEN the United Nations Sub-Commission on the Promotion and Protection of Human Rights (U.N. Sub-Commission) adopted Resolution 2000/7 on “Intellectual Property Rights and Human Rights” more than fifteen years ago, issues lying at the intersection of intellectual property and human rights were underexplored. As Laurence Helfer aptly described, “human rights law [wa]s intellectual property’s new frontier.” Since then, however, the area has received considerable attention. Today, one can easily find books and law review articles on the subject. Although these discussions have focused mostly on topics such as access to essential medicines, access to knowledge, and


2. As Professors Laurence Helfer and Graeme Austin explained: Human rights law ... offered neither a necessary nor a sufficient justification for state-granted monopolies in intangible knowledge goods; nor, conversely, did it serve to check the expansion of intellectual property protection standards.... [T]o a great extent[,] each legal regime was preoccupied with its own distinct concerns and neither saw the other as either aiding or threatening its sphere of influence or opportunities for expansion.


the protection of traditional knowledge and traditional cultural expressions,7 commentators have now turned their attention to other unexplored or underexplored areas. These areas include internet-related human rights issues,8 the right to science and culture,9 and the use of human rights impact assessments in the intellectual property area.10

In March 2015, Farida Shaheed, the first and now-former U.N. Special Rapporteur in the Field of Cultural Rights (Special Rapporteur), released her report on “Copyright Policy and the Right to Science and Culture.”11 Focusing on “the interface of copyright policy with the protection of authors’ moral and material interests and the public’s right to benefit from scientific and cultural creativity,”12 this report emphasized the distinction between copyright protection and protection of authorship.13 It further

an environment in which domestic economic initiatives and development policies can take root. A well-informed, educated and skilled citizenry is indispensable to the development process.”).


8. For discussions of these issues, see generally Molly Beutz Land, Protecting Rights Online, 34 YALE J. INT’L L. 1 (2009); Molly Land, Toward an International Law of the Internet, 54 HARV. INT’L L.J. 393 (2013); Peter K. Yu, Digital Copyright Enforcement Measures and Their Human Rights Threats, in RESEARCH HANDBOOK, supra note 4, at 455.


12. Id. ¶ 6.

13. See id. ¶ 29 (“The human right to protection of authorship is . . . not simply a synonym for, or reference to, copyright protection, but a related concept against which
called for the "expan[sion of] copyright exceptions and limitations to empower new creativity, enhance rewards to authors, increase educational opportunities, preserve space for non-commercial culture and promote inclusion and access to cultural works."\(^{14}\)

Although the Special Rapporteur's views were easily understandable from the perspectives of both access and development, her report stirred up quite some controversy when it was presented to the Human Rights Council.\(^{15}\) In the July 2015 meeting of the Standing Committee on Copyright and Related Rights of the World Intellectual Property Organization (WIPO), delegates from developing countries, to the dismay of their counterparts from developed countries, also relied on her report to push for greater discussions on limitations and exceptions.\(^{16}\)

In October 2015, the Special Rapporteur presented to the United Nations General Assembly her report on patent policy.\(^{17}\) If the reactions to her previous copyright report are any guide, many will consider this new report equally, if not more, controversial, given the developed countries' longstanding support of the $300-billion global pharmaceutical industry.\(^{18}\)

Appearing front and center in the patent report were the Special Rapporteur's views on how to strike an appropriate balance between the right to "the protection of the moral and material interests resulting from any scientific . . . production of which he [or she] is the author"\(^{19}\) and other copyright law should be judged. Protection of authorship as a human right requires in some ways more and in other ways less than what is currently found in the copyright laws of most countries."); see also Laurence R. Helfer, Toward a Human Rights Framework for Intellectual Property, 40 U.C. Davis L. Rev. 971, 997 (2007) [hereinafter Helfer, Toward a Human Rights Framework] ("A human rights framework for authors' rights is . . . both more protective and less protective than the approach endorsed by copyright and neighboring rights regimes."); Peter K. Yu, Reconceptualizing Intellectual Property Interests in a Human Rights Framework, 40 U.C. Davis L. Rev. 1039, 1131 (2007) [hereinafter Yu, Reconceptualizing Intellectual Property Interests] ("[T]he recognition of the human rights attributes of intellectual property rights may challenge the structure of the traditional intellectual property system. In the copyright context, for example, such recognition will encourage the development of an author-centered regime, rather than one that is publisher-centered.").

19. See Universal Declaration of Human Rights art. 27(2), G.A. Res. 217 (III) A, U.N. Doc. A/RES/217(III) (Dec. 10, 1948) [hereinafter UDHR] ("Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artis-
human rights, such as the rights to food, health, education, science, culture, and self-determination. Specifically, the report identified the impact of patent policy on both access to essential technologies and the direction of scientific research. It also outlined "the way forward" for "[a]sserting the right to science and culture in patent policy"—including how to promote the right through exclusions, exceptions and flexibilities, the importance of public participation and transparency, and examples of good practices.

This report’s focus on scientific productions is both important and much-needed. It is important because the right to "enjoy the benefits of scientific progress and its applications" remains the only provision in Article 15(1) of the International Covenant on Economic, Social and Cultural Rights (ICESCR) on which the Committee on Economic, Social and Cultural Rights (CESCR) has not yet drafted an interpretive comment. This report will also provide a useful follow-up to the Special Rapporteur’s earlier report on this particular right, which is largely underexplored and has been referred to as a right that is "tucked away at the
The focus on scientific productions in the Special Rapporteur's patent report is also much-needed because the question on the proper place of patent rights in the human rights framework remains underexplored in literature on intellectual property and human rights.

In view of the growing scholarship that has been devoted to the debates on the human rights limits to intellectual property rights, intellectual property and human rights, and intellectual property as human rights, this article focuses on the complex interactions among scientific productions, intellectual property, and human rights. It begins by examining how one form of intellectual property rights—namely, patent rights—fit within the human rights framework for intellectual property, including whether patent rights can be recognized as human rights. Although one could question whether this framework should be established in the first place, this article does not intend to revisit these questions, which other commentators and I have already explored in great depth. Instead, it takes the framework as its starting point. After examining the place of patent rights in the human rights framework, this article systematically dissects and holistically analyzes the entire framework to reveal its anatomy.

Part I of this article outlines the various arguments for or against recognizing patent rights as human rights. Although this discussion is similar to the traditional discussion on intellectual property as human rights, it focuses specifically on patent rights. Such an analysis is important considering the limited literature on the interplay of patent rights and human rights. It will provide insight into how patent rights interact with human rights, including the right to enjoy the benefits of scientific progress and its applications. This Part further points out that neither the supporting nor opposing arguments are entirely valid. After all, some aspects of patent rights are protected in international or regional human rights instruments while the other aspects do not have any human rights basis. This article therefore takes the view that one can locate human rights support for only some but not all of patent rights.

Part II explores the proper place of intellectual property rights—in particular, patent rights—in the human rights framework for intellectual property. In view of the framework's focus on the right to the protection of the interests resulting from intellectual productions and its lack of distinction between copyrights and patents—legal concepts that are alien to human rights law—this Part broadens the focus from patent rights to cover all forms of intellectual property rights. This broader focus is needed because scientific productions include “scientific publications and


27. For discussions of the need to establish this framework, see generally Helfer, Toward a Human Rights Framework, supra note 13; Yu, Reconceptualizing Intellectual Property Interests, supra note 13.
innovations, including knowledge, innovations and practices of indigenous and local communities." Such a focus also makes great sense considering the reluctance on the part of indigenous communities to distinguish between copyright and patent or between traditional cultural expression and traditional knowledge.

To help facilitate a systematic and holistic study of the human rights framework for intellectual property, Part II further advances a layered approach to intellectual property and human rights. It begins by articulating seven organizing principles, all of which are drawn from the texts of the UDHR and the ICESCR, the CESCR’s interpretive comments, and other intergovernmental documents discussing the interplay of intellectual property and human rights. This Part then identifies four structural layers in the human rights framework: (1) production; (2) interest; (3) protection; and (4) limitation. It concludes by discussing the advantages of organizing this framework into structural layers based on recognized principles.

Part III illustrates the proposed layered framework with examples involving four different types of scientific productions: (1) scientific publications; (2) scientific innovations (including inventions); (3) scientific knowledge; and (4) indigenous knowledge, innovations, and practices. Although this Part focuses on scientific productions—due in large part to the CESCR’s impending drafting of an interpretive comment on the right to enjoy the benefits of scientific progress and its applications—the proposed layered approach and the structure identified in this article will work equally well for other types of productions, including literary or artistic productions.

Part IV explores whether an alternative human rights basis can be found in the right to own private property. This Part singles out this particular issue in light of the recurring debate among policymakers, commentators, and intellectual property industries. It also takes into account recent human rights developments in Europe, which may provide an alternative human rights basis for intellectual property protection. Drawing on the negotiating history of the ICESCR and recent developments concerning the growing tension between intellectual property industries and property rights advocates, this Part questions: (1) whether intellectual property rights are always private property rights; and (2) whether the right to own private property has already been recognized as a human right. This Part aims to show that the right to own private property cannot provide an alternative human rights basis for intellectual property protection. Given the continuous use of the right to the protection of the interests resulting from intellectual productions to provide human right support for intellectual property rights, this Part concludes by underscoring the need for a deeper understanding of the different organizing prin-

28. General Comment No. 17, supra note 20, ¶ 9.
ciples and structural layers within the human rights framework for intellectual property.

I. PATENT RIGHTS AS HUMAN RIGHTS

In the past two decades, commentators have participated in the debate on intellectual property and human rights (including the debate on the human rights limits to intellectual property rights). Beginning in the late 1990s, they have also begun engaging in the debate on intellectual property as human rights. While this article does not seek to rehash arguments advanced in either debate, it is worth recalling the frequent criticisms concerning the inevitable distortions when disparate intellectual property rights are lumped together and analyzed as if they are homogenous. After all, arguments that work well for copyrights or trademarks are not always valid for patents and trade secrets, and vice versa.

Given the rapidly growing literature on these two debates, this Part focuses specifically on whether patent rights are human rights. Such a focus is important because most of the discussions in existing literature on intellectual property and human rights tend to focus on either intellectual creations derived from literary or artistic productions or the protection of traditional knowledge and traditional cultural expressions. Developing a sophisticated understanding of the interplay of patents and human rights will pave the way to the article’s later discussion of scientific productions as well as ways to resolve the tension or conflict between the right to the protection of the interests resulting from intellectual produc-


31. See, e.g., Peter K. Yu, Intellectual Property and the Information Ecosystem, 2005 MICH. ST. L. REV. 1, 1 (“By bringing together different sets of rights that originated differently, protected different subject matter, and raised different policy questions, th[e] umbrella term ['intellectual property'] encourages simplistic thinking that ignores the different characteristics and limitations of copyrights, patents, trademarks, trade secrets, and other neighboring rights.”); Richard M. Stallman, Some Confusing or Loaded Words and Phrases That Are Worth Avoiding, FREE SOFTWARE FOUND., http://www.gnu.org/philosophy/words-to-avoid.html [https://perma.cc/5T3M-HUAD] (“Publishers and lawyers like to describe copyright as 'intellectual property'—a term also applied to patents, trademarks, and other more obscure areas of law. These laws have so little in common, and differ so much, that it is ill-advised to generalize about them. It is best to talk specifically about 'copyright,' or about 'patents,' or about 'trademarks.'

tions and the right to enjoy the benefits of scientific progress and its applications.

This Part begins by analyzing in turn the different arguments for and against recognizing patent rights as human rights—that is, rights that "derive[ ] from the inherent dignity and worth of all persons."33 It then explains why neither position can be easily supported. Instead, some aspects of patent rights are protected in international or regional human rights instruments, while the other aspects do not have any human rights basis.34 As a result of these complications, this Part calls for a greater distinction between the human rights and non-human rights aspects of patent rights.

A. FOR

In academic literature, those arguing for the recognition of patent rights as human rights tend to begin with the Universal Declaration of Human Rights (UDHR) and the ICESCR, relying on their textual language, negotiating histories, interpretive comments, and supporting intergovernmental documents. Specifically, they have advanced four arguments.

The first argument concerns the texts of the UDHR and the ICESCR, both of which explicitly recognize the right to “the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he [or she] is the author.”35 Although the texts mention the “author” but not the “inventor,”36 they use the phrase “scientific, literary or artistic production.” This phrase stands in sharp contrast to the phrase “literary, artistic or scientific work,” which the United

33. General Comment No. 17, supra note 20, ¶ 1.
34. See Special Rapporteur’s Report on Copyright Policy, supra note 11, ¶ 26 (“Some elements of intellectual property protection are indeed required—or at least strongly encouraged—by reference to the right to science and culture. Other elements of contemporary intellectual property laws go beyond what the right to protection of authorship requires, and may even be incompatible with the right to science and culture.”); see also Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1077 (“[S]ome attributes of intellectual property rights are protected in international or regional human rights instruments, while other attributes do not have any human rights basis at all.”); Yu, Ten Common Questions, supra note 7, at 710–11 (“[S]ome attributes of intellectual property rights are protected in international or regional human rights instruments while other attributes do not have any human rights basis at all.”).
35. UDHR, supra note 19, art. 27(2); ICESCR, supra note 19, art. 15(1)(c).
36. Article 13 of the American Declaration on the Rights and Duties of Man does mention the word “inventions” in addition to “literary, scientific or artistic works.” See Organization of American States, American Declaration of the Rights and Duties of Man art. 13, May 2, 1948, OEA/Ser. L./V./II.23, doc. 21 rev. 6 (1948) [hereinafter American Declaration] (“[E]very person . . . has the right to the protection of his moral and material interests as regards his inventions or any literary, scientific or artistic works of which he [or she] is the author.”). But cf. Special Rapporteur’s Report on Patent Policy, supra note 17, ¶ 28 (“A strongly debated question is whether ‘authors’ in article 15, paragraph 1(c) of the International Covenant on Economic, Social and Cultural Rights includes inventors and scientific discoverers, and whether the latter, like ‘authors’, enjoy the right to the protection of the moral and material interests resulting from their scientific production, and if so, with what meaning.”).
Nations Educational, Scientific and Cultural Organization (UNESCO) proposed in the early drafting process. By using the phrase “scientific production,” the instruments therefore offer broader protection than the mere protection of scientific works or scientific publications.

The second argument focuses on the deep concern regarding scientific research and its abuse among the drafters of both the UDHR and the ICESCR. During the drafting of the UDHR, the delegates were widely concerned about the abuse of science and technology during the Second World War and the wide use of conscripted scientists and engineers in Nazi Germany and Stalinist Russia. They therefore called for stronger protection of intellectual labor in the human rights regime. For example, Mexican delegate Pablo Campos Ortiz identified the right to the protection of the interests resulting from intellectual productions as a right of the individual as “an intellectual worker, artist, scientist or writer.”

Likewise, after discussing the article on the freedom of thought, Peruvian delegate José Encinas stated that “it seemed pertinent now to recognize freedom of creative thought, in order to protect it from harmful pressures which were only too frequent in recent history.”

Similar statements could be found in the drafting history of the ICESCR. The Swedish delegation stated that “the protection of those rights [in Article 15] would be an encouragement to science and creative activity.” The Israeli delegation maintained that “[i]t would be impossible to give effective encouragement to the development of culture unless the rights of authors and scientists were protected.” Even today, the CESCR had described the obligations in Articles 15(1)(c) and 15(3) as “a material safeguard for the freedom of scientific research and creative activity.”

The third argument relates to the fact that patent protection was specifically discussed during the drafting of the ICESCR. As Maria Green recounted:

38. See Audrey Chapman, A Human Rights Perspective on Intellectual Property, Scientific Progress, and Access to the Benefits of Science, in WIPO PROCEEDINGS, supra note 30, at 127, 131 (“Like other provisions of the UDHR, the context for drafting Article 27 was the widespread reaction to the Nazi genocide and the brutality of World War II. Science and technology had played an important role in the war and served as an instrument of the Holocaust.”); Richard Pierre Claude, Scientists’ Rights and the Human Right to the Benefits of Science, in CORE OBLIGATIONS: BUILDING A FRAMEWORK FOR ECONOMIC, SOCIAL, AND CULTURAL RIGHTS 247, 249–50 (Audrey Chapman & Sage Russell eds., 2002) [hereinafter CORE OBLIGATIONS] (discussing the abuse of science and scientists for purposes of power aggrandizement).
40. Id. at 218.
41. Drafting History of the Article 15(1)(c), supra note 37, ¶ 38.
42. Id.
43. General Comment No. 17, supra note 20, ¶ 4.
[Chilean delegate Carlos Valenzuela] fully sympathized with the praiseworthy intentions of the French delegation and agreed that intellectual production should be protected; but there was also need to protect the under-developed countries, which had greatly suffered in the past from their inability to compete in scientific research and to take out their own patents. As a result, they were in thrall to the technical knowledge held exclusively by a few monopolies. As the French amendment would perpetuate that situation, he would have to vote against it. In general, the subject was so complex that it would have to be dealt with in a separate convention than in a single article of the covenant on human rights.44

Responding to Valenzuela’s concern as well as to those of others, French delegate Pierre Juvigny stated that “[h]e did not agree with the Chilean representative that monopoly in the field of patents represented such a grave danger; moreover, the absence of protection was not a remedy for the unfavourable situation in under-developed countries.”45 His British colleague, Sir Samuel Hoare, expanded on this point at greater length:

The Chilean representative had raised an interesting point: the conflict between the conception that the rights of the creative worker must be protected and the principle that there should be no obstruction to the general utilization of the results of his work in the interests of humanity. In the light of these remarks, sub-paragraph (b) of the original article 30 deserved further examination. He had always understood it to mean that the benefits of scientific progress were to be made available to all within the limits and by use of the machinery which already existed. If the Chilean representative believed that the clause was intended to do away with all the intermediaries between the inventor and the general application of his invention, he was proposing to reform the world by one brief article. Such a conception went far beyond the scope of the covenant, and the United Kingdom delegation could not subscribe to it.46

Notably, all of these delegates distinguished patents from copyrights based on their impact, rather than their human rights bases or the lack thereof. Even the Chilean delegate seemed to have agreed that the present language would cover both copyrights and patents.

The final argument pertains to the considerable recognition individual inventors have achieved, especially before the Second World War. As children have been taught in elementary schools—whether entirely correct or not47—Samuel Morse invented the telegraph, Alexander Graham

44. Drafting History of the Article 15(1)(c), supra note 37, ¶ 29.
45. Id. ¶ 31.
46. Id.
47. As Mark Lemley declared:
   The canonical story of the lone genius inventor is largely a myth. Edison didn’t invent the lightbulb; he found a bamboo fiber that worked better as a filament in the lightbulb developed by Sawyer and Man, who in turn built on lighting work done by others. Bell filed for his telephone patent on the very same day as an independent inventor, Elisha Gray; the case ultimately went
Bell the telephone, Thomas Edison the gramophone and the light bulb, Guglielmo Marconi the radio, and the Wright Brothers the airplane.\textsuperscript{48} The more we focus on individual inventors and the human dimension of their inventions, the more we are ready to recognize their human rights.\textsuperscript{49}

B. AGAINST

In academic literature, those arguing against the recognition of patent rights as human rights often begin with the need to separate copyrights from patents.\textsuperscript{50} In her book chapter arguing against recognizing patent rights as human rights, for instance, Rochelle Dreyfuss noted the distinction between copyrights and patents:

There may well be important differences between the intellectual endeavors protected by copyrights and the material protected by patents. It is far easier to see a human rights dimension in the case of the former. After all, expression and personality are intimately intertwined. Because one can learn a great deal about a person from what he has said and how he has said it, protecting expression safeguards human dignity. But it is hard to make that case for a product or process, where value resides in functionality and not in the identity of the inventor. There is nothing about a product or a process (or for that matter, a newly discovered principle of nature) that trenches upon the personality of the inventor. For example, we know a great deal about Thomas Edison. But we know it from reading his papers, not from turning on his light bulb. Accordingly, while a case can be made for giving Edison control over his output as an author, it is hard to argue that he deserves that protection as an inventor.\textsuperscript{51}

\textsuperscript{48} For interesting discussions of disputes among major inventors, see generally \textsc{Hal Hellman}, \textsc{Great Feuds in Technology: Ten of the Liveliest Disputes Ever} (2004).

\textsuperscript{49} Cf. Justin Hughes, \textit{The Philosophy of Intellectual Property}, 77 Geo. L.J. 287, 344 (1988) ("With inventions, the object may precede the personality stake, but with time the scientist or engineer comes to identify himself with his scientific or technological advances.").

\textsuperscript{50} See Yu, \textit{Ten Common Questions}, supra note 7, at 721–26 (discussing the question concerning whether patents should be separated from copyrights in the human rights debate).

\textsuperscript{51} Dreyfuss, \textit{Patents and Human Rights}, supra note 32, at 80–81 (footnotes omitted); see also Brinkhof, supra note 32, at 149 ("Article 15(1)(c) mentions neither patents nor inventions. Scientific production is not synonymous with patents. And the provision is extremely vague as to the intended end-result."); Daniel Gervais, \textit{Human Rights and the Philosophical Foundations of Intellectual Property}, in \textsc{Research Handbook}, supra note...
Professor Dreyfuss’s careful observation was well supported by the design of the existing patent system, which has made it problematic to recognize patent rights as human rights in five ways. First, the system does not always protect the first inventor’s human rights. Those inventors who have chosen to commercialize the patented invention or disclose it in a publication without first filing for a patent within the designated period will not be able to obtain protection despite the inalienable nature of the inventors’ human rights.52 In a first-to-file jurisdiction—as opposed to a first-inventor-to-file jurisdiction, such as the United States following its adoption of the Leahy-Smith America Invents Act—questions can also be raised over whether the patentee is actually the inventor and, therefore, whether the patent system adequately protects the inventor’s human rights.53

Second, even when the system protects the first inventor’s human rights, it does not recognize the similar rights of subsequent inventors. As the late Robert Nozick rightly pointed out: “An inventor’s patent does not deprive others of an object which would not exist if not for the inventor. Yet patents would have this effect on others who independently invent the object.”54 Similar to Nozick, Lawrence Becker found the emphasis on the first inventor highly problematic:

Being the first (the oldest known) instance of a given intellectual product is sometimes given unjustified weight. Either later instances were derived from older ones or not. If they were, then credit for originality belongs only with the oldest. If later instances were independent, however, then credit for originality goes to them as well. Temporal primacy should not be confused with originality.55

Thus far, many commentators have argued against the extension of human rights to patents based on the lack of an “independent invention” doctrine56—the patent law equivalent of the copyright law doctrine of

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52. See Gordon, supra note 32, at 166 (“[A] person who authorizes an invention, but who does not invent it, or discloses it in a publication, after a year cannot claim patent protection in it. This may make sense from a utilitarian perspective, but the result is that an ‘author’ lacks rights.” (footnotes omitted)).

53. See id. at 164 (“When nations make ‘first to file’ the test for inventorship it is possible that many persons who were the first to conceive of an invention, or even the first to reduce it to practice, will be denied patents.”).

54. ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 182 (1974).


56. See Gordon, supra note 32, at 166–67 (discussing in the human rights context the problems raised by the failure of patent rights to benefit all independent inventors); see also Samson Vermont, Independent Invention as a Defense to Patent Infringement, 105
When one takes into account the doctrine of equivalents—which broadens the prohibition to cover subsequent inventors whose inventions have been deemed legally “equivalent”—the problem with the existing patent system becomes even more obvious. In view of these many problems, some commentators have called for the introduction of prior user rights or defenses, which allow third parties to continue to use or commercialize the patented inventions based on their usage before the filing of relevant applications.

Third, although individual inventors enjoy the right to have their names attached to a patent, they do not have a legal right to protect the integrity of their inventions. Having the ability to protect against distortion is important, because human rights protect not only the material interests resulting from intellectual productions but also the moral interests resulting from those productions. Indeed, the lack of protection for the integrity of an invention stands in sharp contrast to the ability to protect the integrity of a copyrighted work. In jurisdictions offering strong moral rights protection, the right of integrity (le droit au respect de l’œuvre) pre-


57. See, e.g., Bleistein v. Donaldson Lithographic Co., 188 U.S. 239, 249 (1903) (Holmes, J.) (“Others are free to copy the original. They are not free to copy the copy.”); Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49, 54 (2d Cir. 1936) (Hand, J.) (“[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.”).


59. In the United States, the Leahy-Smith American Invents Act recently expanded the prior user defense beyond business method patents to cover all types of technologies. See 35 U.S.C. § 273 (2012) (providing a defense to infringement based on prior commercial use). The need for prior user rights is also frequently mentioned in the traditional knowledge debate. See Naomi Roht-Arriaza, Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities, 17 Mich. J. Int’l L. 919, 957 (1996) (suggesting as right recipients those communities that “have long used the process or product at issue”); Antony Taubman, Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge, in INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME 521, 545 (Keith E. Maskus & Jerome H. Reichman eds., 2005) [hereinafter INTERNATIONAL PUBLIC GOODS] (providing for an exception “for the continuation of bona fide prior use”).

60. See Paris Convention for the Protection of Industrial Property art. 4ter, Mar. 20, 1883, 21 U.S.T. 1538, 828 U.N.T.S. 305 (revised at Stockholm July 14, 1967) [hereinafter Paris Convention] (stipulating that “the inventor shall have the right to be mentioned as such in the patent”); 35 U.S.C. § 101 (2012) (“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”).

61. See Hughes, supra note 49, at 351.
vents others from distorting, mutilating, or modifying the work in a manner that would prejudice the authors' honor or reputation.\textsuperscript{62}

Fourth, the increased corporatization of industrial research and development\textsuperscript{63} and the simultaneous lack of focus on "heroic inventors" may have colored the perception that patent protection lacks any human rights basis.\textsuperscript{64} In regard to copyright law, commentators have extensively discussed and critiqued the construction of the romantic author.\textsuperscript{65} An equivalent notion of the "lone inventor"\textsuperscript{66} or "lone genius,"\textsuperscript{67} however, does not have the same recognition in patent law except perhaps within the patent bar or in the legislative arena. Indeed, very few contemporary academic commentators have argued for a strong natural rights justification for patents.\textsuperscript{68}

Finally, as Professor Dreyfuss cautioned us, elevating patent rights to human rights could undermine the patent system by significantly reducing the incentives it generates.\textsuperscript{69} As she observed:

\begin{itemize}
  \item[(62).] See Berne Convention for the Protection of Literary and Artistic Works art. 6bis(1), Sept. 9, 1886, 25 U.S.T. 1341, 828 U.N.T.S. 221 (revised at Paris July 24, 1971) [hereinafter Berne Convention] (protecting "the right . . . to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation").
  \item[(63).] As Professor Dreyfuss observed:
\begin{quote}
[The institutions of science are evolving. Universities are now active participants in the patent system, and that development creates demand for a regime that protects the work that universities do—which is to say, patents on upstream research. Furthermore, research is increasingly conducted in small, highly networked knowledge-intensive firms. These firms put new pressure on the patent system because they use patent rights in novel ways: to facilitate cooperation and as signals of technical and business competence.
\end{quote}
Dreyfuss, Patents and Human Rights, supra note 32, at 85 (footnote omitted).
  \item[(64).] For discussions of the "heroic inventor" in patent law, see generally Mark D. Janis, Patent Abolitionism, 17 BERKELEY TECH. L.J. 899, 908-22 (2002); Lemley, Myth of the Sole Inventor, supra note 47.
  \item[(66).] Janis, supra note 64, at 911.
  \item[(67).] Lemley, Myth of the Sole Inventor, supra note 47, at 710.
  \item[(68).] A rare exception is my former colleague, Adam Mossoff. See, e.g., Adam Mossoff, Rethinking the Development of Patents: An Intellectual History, 1550–1800, 52 HASTINGS L.J. 1255 (2001); Adam Mossoff, Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context, 92 CORNELL L. REV. 953 (2007) [hereinafter Mossoff, Thomas Jefferson]. Although few recent commentators have conceptualized patent rights as natural rights, such a conception was common in pre-war patent literature. Writing in the late nineteenth century, for example, William Robinson, the author of the leading patent law treatise of his time, wrote: "It is a law of nature that men should profit by the discoveries and inventions of each other. This is the law which binds society together, and in obedience to which lies all the possibility of moral, intellectual, and material advancement." William Robinson, Law of Patents for Useful Inventions 39 (1890).
  \item[(69).] See Dreyfuss, Patents and Human Rights, supra note 32, at 74.
\end{itemize}
Elevating intellectual property rights to human rights has unfortunate pragmatic consequences. Presumably, human rights can be outweighed only by other human rights. Accordingly, under a human rights approach, the benefit stream flowing from inventive production can be distributed, without a patentee’s authorization, only to meet social needs that are likewise classified as fundamental. (Or to put it another way, every incursion on a patent right would need to be justified by showing that it involved an interest that is not only socially desirable, but that can also be categorized as a human right.) Instead of relying on legislatures and courts to wield well-understood tools embedded in existing patent law, ad hoc rights-balancing leads to unpredictable decision-making. The result, ironically, is an environment less conducive to decisions to invest time and money in intellectual efforts. The new—human rights—justification can, in short, thwart the traditional—utilitarian—goal of limiting protection from free riders as a means of encouraging the advancement of knowledge.\textsuperscript{70}

C. Summary

As shown above, those arguing for recognizing patent rights as human rights have strong textual and historical support from the UDHR and the ICESCR. By contrast, those arguing against such recognition also have strong textual support from existing patent law and strong empirical support from the existing patent system. In a battle between the two camps, neither side will have a decisive victory.

To a large extent, this stalemate can be attributed to the fact that some aspects of patent rights are protected in international or regional human rights instruments while the other aspects do not have any human rights basis. Thus, the arguments for or against recognizing patent rights as human rights are only valid with respect to some but not all aspects of patent rights.

Thus, if we are to develop a robust and sophisticated human rights framework for intellectual property that accurately reflects the limited human rights status of patent rights, we will need to be able to distinguish

\textsuperscript{70} Id. Similarly, Professors Helfer and Austin observed:

Intellectual property commentators, especially those working in the Anglo-American tradition, employ the analytical tools of utilitarianism and welfare economics to evaluate the trade-offs between incentives and access and the consequences for the individuals and firms that create, own, and consume intellectual property products. The international human rights movement, by contrast, engages in a discourse of absolutes that seeks to delineate the negative and positive duties of states to respect and promote inalienable individual freedoms. As a result, to label something as a “human right” often invokes—in rhetoric if not always in reality—a language of trumps and unconditional demands. This emphasis on categorical rights and responsibilities appears ill suited to the rapidly changing technological and economic environment in which intellectual property rules operate, an environment that often engenders calls for incremental recalibrations of the balance between incentives and access.

\textit{Helfer & Austin, supra} note 2, at 504.
between the human rights and non-human rights aspects of patent rights. Such a distinction is needed not only in regard to patent rights and the human rights interests resulting from scientific productions, but also other intellectual property rights as well as the human rights interests resulting from other forms of productions, such as literary or artistic productions.

II. A LAYERED APPROACH

In light of the complexities concerning the limited human rights status of patent rights and the need for a better understanding of the place of these rights in the human rights framework for intellectual property, this Part proposes a layered approach to intellectual property and human rights. It further dissects the framework, breaking it down into seven organizing principles and four structural layers. Although the previous Part focused on only patent rights, this Part broadens the coverage to explore all forms of intellectual property rights. This broader focus is needed because scientific productions can include scientific publications, scientific innovations (including inventions), scientific knowledge, as well as indigenous knowledge, innovations, and practices. Moreover, the human rights framework focuses on the right to the protection of the interests resulting from intellectual productions and does not distinguish between copyright and patent rights. The latter are concepts in the intellectual property regime, not the human rights regime.

In the past decade, the U.N. Sub-Commission’s Resolution 2000/7 on “Intellectual Property Rights and Human Rights”71 and the CESCR’s interpretive comments on Articles 15(1)(a) and 15(1)(c) of the ICESCR 72 have provided considerable guidance on the development of a human rights framework for intellectual property. Nevertheless, commentators have yet to conduct a systematic and holistic study of this framework. This Part therefore seeks to fill the lacuna. Part II.A articulates seven principles that would help organize the human rights framework for intellectual property. Part II.B identifies four structural layers in the framework that warrant distinct treatment and analysis. Part II.C concludes with a brief discussion of the resemblance between the proposed layered approach and other layered approaches advanced by scholars in the intellectual property and related fields. It further outlines four advantages of using the proposed layered approach to intellectual property and human rights.

A. ORGANIZING PRINCIPLES

To help organize the human rights framework for intellectual property, this section develops seven principles based on the texts of the UDHR

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71. Resolution 2000/7, supra note 1.
and the ICESCR, the CESCR’s interpretive comments, and other intergovernmental documents discussing the interplay of intellectual property and human rights: (1) incongruity principle; (2) non-interchangeability principle; (3) essentiality principle; (4) diversity principle; (5) flexibility principle; (6) multiplicity principle; and (7) substitutability principle.

These seven principles are important because they help us better understand how to promote the flexibilities within the intellectual property system as well as to maintain adequate protection of the human rights interests resulting from intellectual productions. As the Special Rapporteur reminded us in her recent report on patent policy, “Whereas from the perspective of trade law, exclusions, exceptions and flexibilities under international intellectual property law, such as the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights, remain optional, from the perspective of human rights, they are often to be considered as obligations.”

1. Incongruity Principle

The first principle is that the human rights framework for intellectual property protects only some aspects of some intellectual property rights. This framework, however, does not protect all intellectual property rights or all aspects of these rights.

Commentators generally separate the discussion of intellectual property and human rights based on whether they subscribe to the conflict approach or the coexistence approach. While the former views the two sets of rights as being in fundamental conflict, the latter considers them essentially compatible. Although these commentators once debated which approach was preferable, most of them, especially those subscribing to a positivist conception of human rights, have now recognized that some aspects of intellectual property rights are recognized as human rights while the other aspects do not have any human rights basis.

74. For discussions of these two approaches, see generally Paul L.C. Torremans, Copyright (and Other Intellectual Property Rights) as a Human Right, in INTELLECTUAL PROPERTY AND HUMAN RIGHTS, supra note 4, at 221, 222–23; Laurence R. Helfer, Human Rights and Intellectual Property: Conflict or Coexistence?, 5 MINN. INT’L PROP. REV. 47, 48–49 (2003); Yu, Ten Common Questions, supra note 7, at 709–11.
75. Professor Richard Falk noted the existence of two jurisprudential schools: The positivists consider the content of human rights to be determined by the texts agreed upon by states and embodied in valid treaties, or determined by obligatory state practice attaining the status of binding international custom. The naturalists, on the other hand, regard the content of human rights as principally based upon immutable values that endow standards and norms with a universal validity. Richard Falk, Cultural Foundations for the International Protection of Human Rights, in HUMAN RIGHTS IN CROSS-CULTURAL PERSPECTIVES: A QUEST FOR CONSENSUS 44, 44 (Abdullahi Ahmed An-Na‘im ed., 1992); see also Thomas W. Pogge, WORLD POVERTY AND HUMAN RIGHTS: COSMOPOLITAN RESPONSIBILITIES AND REFORMS 59 (2d ed. 2008) (discussing the distinction between legal and moral human rights).
In her recent report on copyright policy, for example, the Special Rapporteur declared:

Some elements of intellectual property protection are indeed required—or at least strongly encouraged—by reference to the right to science and culture. Other elements of contemporary intellectual property laws go beyond what the right to protection of authorship requires, and may even be incompatible with the right to science and culture.76

Audrey Chapman also noted the lack of a “basis in human rights to justify using intellectual property instruments as a means to protect economic investments,”77 even though she found that the drafting history of the UDHR supported “relatively weak claims of intellectual property as a human right.”78

In previous works, I questioned the human rights basis of “corporate trademarks and trade secrets, works made for hire, employee inventions, neighboring rights for broadcasters and phonogram producers, database protection, protection for clinical trial data, and other rights that primarily protect the economic investments of institutional authors and inventors.”79 Yet, I recognize the human rights basis of some aspects of copyrights and patent rights.80 Thus, if the human rights framework is to be systematically organized, it is important that the human rights aspects of intellectual property rights be distinguished from the non–human rights aspects of these rights.

2. Non-interchangeability Principle

The second principle is that the human rights framework for intellectual property protects both the moral and material interests resulting from intellectual productions—interests that are not interchangeable.

77. Audrey R. Chapman, Core Obligations Related to ICESCR Article 15(1)(c), in Core Obligations, supra note 38, at 305, 316–17 [hereinafter Chapman, Core Obligations].
78. Id. at 314.
79. Yu, Nonmultilateral Era, supra note 10, at 1061–62; accord Yu, Ten Common Questions, supra note 7, at 727–28 (raising similar questions); see also Drafting History of the Article 15(1)(c), supra note 37, ¶ 45 (“[T]he drafters of the ICESCR do not seem to have been thinking in terms of the corporation-held patent, or the situation where the creator is simply an employee of the entity that holds the patent or the copyright.”); Brinkhof, supra note 32, at 140 (“[T]he human rights aspects of trademark law are less obvious since this is a branch of [intellectual property] law concerned not so much with the intellectual achievements of individuals, but rather with the regulation of competition through the prevention of confusion arising between participants in a market.”); Chapman, Core Obligations, supra note 77, at 316–17 (noting that there is no “basis in human rights to justify using intellectual property instruments as a means to protect economic investments”).
80. See Yu, Nonmultilateral Era, supra note 10, at 1071 (“While not all forms of intellectual property rights should be protected at the level of human rights, copyrights and patents clearly implicate the material interests of individual authors and inventors.”); see also Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1083–92 (discussing the protection of material interests in copyrighted works, patented inventions, and other intellectual creations).
The UDHR, the ICESCR, and other international or regional human rights instruments—such as the American Declaration on the Rights and Duties of Man—have all protected both the moral and material interests resulting from intellectual productions. While the protection of the moral interests “safeguards the personal link between authors and their creations and between peoples, communities, or other groups and their collective cultural heritage,” the protection of the material interests “enable authors to enjoy an adequate standard of living.”

The emphasis on the protection of both interests is important because these protections are not always interchangeable. Just because the law protects the material interests resulting from intellectual productions does not mean that this particular law also protects the moral interests resulting from these productions. Indeed, the high level of economic protection in countries that prioritize economic rights over personality rights does not always enable these countries to discharge those human rights obligations that are related to the protection of the moral interests resulting from intellectual productions.

A case in point is the United States. Although the country already offers moral rights protection to works of visual art—such as paintings, sculptures, and print photographs—such protection remains limited, especially when compared with the protections offered in continental Europe. More problematic, because the protection is confined to works of visual art, such protection does not extend to scientific publications. Thus, the United States arguably does not offer adequate protection to the moral interests resulting from scientific productions even though its copyright and patent systems already protect the material interests from these productions at a very high level.

81. See American Declaration, supra note 36, art. 13 (“[E]very person ... has the right to the protection of his moral and material interests as regards his inventions or any literary, scientific or artistic works of which he [or she] is the author.”).
82. General Comment No. 17, supra note 20, ¶ 2; cf. ICESCR, supra note 19, art. 11(1) (recognizing “the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions”).
85. See 17 U.S.C. § 101 (2012) (“A work of visual art does not include ... any ... technical drawing, diagram, model, ... book, ... periodical, data base, electronic information service, electronic publication, or similar publication ... ”).
86. Similarly, Professor Helfer observed:

A human rights framework for authors’ rights is ... both more protective and less protective than the approach endorsed by copyright and neighboring rights regimes. It is more protective in that rights within the core zone of autonomy [as protected by human rights instruments] are subject to a far more stringent limitations test than the one applicable contained in intellectual property treaties and national laws. It is also less protective, however, in that a state need not recognize any authors’ rights lying outside of this zone.
3. **Essentiality Principle**

The third principle is that the human rights framework for intellectual property requires only minimum essential levels of protection. Under this principle, state parties retain a wide margin of discretion in determining the appropriate *additional* levels of protection based on available resources and local conditions.

Although the UDHR, the ICESCR, and other international and regional human rights instruments recognize the protection of human rights interests resulting from intellectual productions, they do not demand very high levels of protection. Instead, they merely require the provision of "minimum essential levels" of protection, which commentators have further defined as "the essential element or elements without which [a right] loses its substantive significance as a human right."  

Once state parties have satisfied their minimum core obligations, the ICESCR requires them to take "deliberate, concrete and targeted" steps toward the full realization of the stipulated rights. Although *General Comment No. 3* does not explain how the competing demands of these obligations are to be balanced or whether some of these rights are to be protected to a greater extent or with more deliberate speed, the ICESCR stipulates that state parties, without a compelling justification, cannot take retrogressive measures that will lower the existing protection.

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or, if it does recognize such additional rights, it must give appropriate weight to other social, economic, and cultural rights and to the public's interest in access to knowledge.


89. See Helfer, *Toward a Human Rights Framework*, supra note 13, at 996 (noting "the existence of an irreducible core of rights—a zone of personal autonomy in which authors can achieve their creative potential, control their productive output, and lead independent, intellectual lives, all of which are essential requisites for any free society"); Yu, *Reconceptualizing Intellectual Property Interests*, supra note 13, at 1105–13 (discussing the core minimum approach).

90. *General Comment No. 3, supra* note 87, ¶ 2; see also ICESCR, *supra* note 19, art. 2(1) (requiring each state party "to take steps . . . to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures"); see also Matthew C.R. Craven, *The International Covenant on Economic, Social, and Cultural Rights: A Perspective on Its Development* 136–44 (1995) (discussing the phrase "to the maximum of its available resources" in the ICESCR); Yu, *Reconceptualizing Intellectual Property Interests, supra* note 13, at 1113–23 (discussing the progressive realization approach).

91. See ICESCR, *supra* note 19, art. 5(1) ("Any State, group or person . . . [may not] engage in any activity or . . . perform any act aimed at the destruction of any of the rights or freedoms recognized herein, or at their limitation to a greater extent than is provided for in the present Covenant.").
As far as the protection of the material interests resulting from intellectual productions is concerned, the ICESCR only requires a level of protection that will "enable authors to enjoy an adequate standard of living."92 Once state parties have reached this minimum threshold, they will enjoy a wide margin of discretion in determining whether additional protection should be granted. As General Comment No. 17 declares, Article 15(1)(c) of the ICESCR "by no means prevents States parties from adopting higher protection standards in international treaties on the protection of the moral and material interests of authors or in their domestic laws, provided that these standards do not unjustifiably limit the enjoyment by others of their rights under the Covenant."93

Oftentimes, state parties will have to make decisions based on available resources and local conditions.94 For instance, Article 22 of the UDHR specifically states that "the economic, social and cultural rights indispensable for [one's] dignity and the free development of his [or her] personality" are to be realized "in accordance with the organization and resources of each State."95 Likewise, General Comment No. 17 states that the precise application of the essential and interrelated elements in the right to the protection of the interests resulting from intellectual productions "will depend on the economic, social and cultural conditions prevailing in a particular State party."96

This arrangement resonates well with those advocating greater flexibilities within the international intellectual property system as well as those supporting the various development agendas at the World Trade Organization, WIPO and other international fora.97 The low threshold of protection in the human rights regime also explains why the CESCR has repeatedly cautioned us not to equate the protection required by the

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92. General Comment No. 17, supra note 20, ¶ 2; see also CRAVEN, supra note 90, at 287-351 (discussing the "right to an adequate standard of living").
93. General Comment No. 17, supra note 20, ¶ 11 (footnote omitted and emphasis added).
94. See id. ¶ 47 ("The most appropriate measures to implement the right to the protection of the moral and material interests of the author will vary significantly from one State to another. Every State has a considerable margin of discretion in assessing which measures are most suitable to meet its specific needs and circumstances."); see also Laurence R. Helfer, Adjudicating Copyright Claims Under the TRIPS Agreement: The Case for a European Human Rights Analogy, 39 Harv. Int'l L.J. 357, 404-05 (1998) (discussing the margin of appreciation doctrine embraced by the European Court of Human Rights); Helfer, Toward a Human Rights Framework, supra note 13, at 998 ("Governments retain—at least in the near term—a fairly broad 'margin of appreciation' within which to reconcile human rights guarantees, intellectual property protection rules, and other policy objectives.").
95. UDHR, supra note 19, art. 22; see also ICESCR, supra note 19, art. 2(1) ("Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.").
96. General Comment No. 17, supra note 20, ¶ 18.
human rights system with those required by the intellectual property system. As the CESCR declared:

Human rights are fundamental, inalienable and universal entitlements belonging to individuals and, under certain circumstances, groups of individuals and communities. Human rights are fundamental as they are inherent to the human person as such, whereas intellectual property rights are first and foremost means by which States seek to provide incentives for inventiveness and creativity, encourage the dissemination of creative and innovative productions, as well as the development of cultural identities, and preserve the integrity of scientific, literary and artistic productions for the benefit of society as a whole.

Given the rapid expansion of rights in the intellectual property system, it is fair to say that many of these rights offer protection far beyond what is required by international or regional human rights instruments.

To complicate matters even further, international and regional human rights instruments may allow for protections that are prohibited by international trade or intellectual property treaties. A case in point is Article 2(3) of the ICESCR, which states that “[d]eveloping countries, with due regard to human rights and their national economy, may determine to what extent they would guarantee the economic rights recognized in the present Covenant to non-nationals.” Although this provision provides state parties in the developing world flexibility to determine whether non-nationals will receive the same protection granted to nationals for the human rights interests resulting from intellectual productions, such discrimination is expressly prohibited by the national treatment provisions in the Berne Convention for the Protection of Literary and Artistic Works, the Paris Convention for the Protection of Industrial Property

98. As the CESCR elaborated:

In contrast to human rights, intellectual property rights are generally of a temporary nature, and can be revoked, licensed or assigned to someone else. While under most intellectual property systems, intellectual property rights, often with the exception of moral rights, may be allocated, limited in time and scope, traded, amended and even forfeited, human rights are timeless expressions of fundamental entitlements of the human person. Whereas the human right to benefit from the protection of the moral and material interests resulting from one’s scientific, literary and artistic productions safeguards the personal link between authors and their creations and between peoples, communities, or other groups and their collective cultural heritage, as well as their basic material interests which are necessary to enable authors to enjoy an adequate standard of living, intellectual property regimes primarily protect business and corporate interests and investments. Moreover, the scope of protection of the moral and material interests of the author provided for by article 15, paragraph 1(c), does not necessarily coincide with what is referred to as intellectual property rights under national legislation or international agreements.

It is therefore important not to equate intellectual property rights with the human right recognized in article 15, paragraph 1(c).

General Comment No. 17, supra note 20, ¶¶ 2–3.

99. Id. ¶ 1.

100. ICESCR, supra note 19, art. 2(3). Thanks to Professor Helfer for providing this insightful example.
4. **Diversity Principle**

The fourth principle is that the human rights framework for intellectual property recognizes that different types of productions or endeavors may require different forms of protection for the human rights interests involved. As *General Comment No. 17* recognizes and as Part III of this article will show, many different types of scientific productions exist, and the human rights interests resulting from these productions often require protection through different forms of intellectual property rights. For example, the moral and material interests in scientific publications are often protected through the copyright system, which features both economic and non-economic (or moral) rights.10 These publications can also be protected by trademark and unfair competition laws. By contrast, the moral and material interests in scientific innovations are often protected through trade secret and patent laws.104

What type of intellectual property right or whether a combination of different rights will be needed is likely to depend on the type of production or endeavor involved. Although this article focuses mostly on scientific productions, this principle is equally applicable to literary or artistic productions. Nevertheless, it is important to remember that no rigid separation exists between these different types of productions or endeavors. Nor is such a separation universally accepted—for instance, many indigenous communities consider this separation artificial.105

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102. See *Berne Convention*, supra note 62, art. 5(1) ("Authors shall enjoy, in respect of works for which they are protected under this Convention, in countries of the Union other than the country of origin, the rights which their respective laws do now or may hereafter grant to their nationals, as well as the rights specially granted by this Convention."); *Paris Convention*, *supra* note 60, art. 2(1) ("Nationals of any country of the Union shall, as regards the protection of industrial property, enjoy in all the other countries of the Union the advantages that their respective laws now grant, or may hereafter grant, to nationals; all without prejudice to the rights specially provided for by this Convention. Consequently, they shall have the same protection as the latter, and the same legal remedy against any infringement of their rights, provided that the conditions and formalities imposed upon nationals are complied with."); TRIPS Agreement art. 3.1 ("Each Member shall accord to the nationals of other Members treatment no less favourable than that it accords to its own nationals with regard to the protection of intellectual property, subject to the exceptions already provided in, respectively, the Paris Convention (1967), the *Berne Convention* (1971), the *Rome Convention* or the Treaty on Intellectual Property in Respect of Integrated Circuits.").

103. See discussion *infra* Part III.A.

104. See discussion *infra* Part III.B.

105. See discussion *infra* Part III.D.
5. Flexibility Principle

The fifth principle is that the human rights framework for intellectual property neither requires nor endorses any particular modality of protection for the human rights interests resulting from intellectual productions. Because of this lack of specification, the UDHR, the ICESCR, and other international or regional human rights instruments do not endorse one form of protection over another. After all, the effectiveness of the protection concerned is likely to depend on available resources and local conditions. Thus, each state party is free to determine for itself what type of protection will best meet the minimum requirement and suit its own local conditions (Principle 4).

For example, General Comment No. 17 declared the following with respect to the moral interests resulting from intellectual productions:

The term of protection of material interests under article 15, paragraph 1(c), need not extend over the entire lifespan of an author. Rather, the purpose of enabling authors to enjoy an adequate standard of living can also be achieved through one-time payments or by vesting an author, for a limited period of time, with the exclusive right to exploit his [or her] scientific, literary or artistic production.106

Based on this interpretative comment, state parties can therefore satisfy their human rights obligations by relying on the existing property-based intellectual property system. They can also deploy liability rules, unfair competition, or even Soviet-style non-property-based authorship protection.107 As discussed below in regard to Principles 6 and 7, state parties

106. General Comment No. 17, supra note 20, ¶ 16; see also Torremans, supra note 74, at 229 ("[A] lot of freedom is left to Contracting States in relation to the exact legal format of the protection [of the interests of authors and creators].").

107. See Mira T. Sundara Rajan, Copyright and Free Speech in Transition: The Russian Experience, in COPYRIGHT AND FREE SPEECH: COMPARATIVE AND INTERNATIONAL ANALYSES 315, 333 (Jonathan Griffiths & Uma Suthersanen eds., 2005) (noting that the Russian Copyright Act of 1928 granted limited recognition to authors’ interests by “placing them within the broader context of a non-property theory of authorship”). As noted in a 1938 commentary on the Russian Law:

In bourgeois society, the author’s right is a monopoly, establishing the exclusive right to distribute the products of science, literature and art. . . .

[It] is characteristic that, except for a small group of bourgeois authors, the author’s right is the property, in bourgeois society, not of the author, but of the publisher, of a big capitalist, an industrialist. . . . The author’s right in capitalist countries is made into a tool of the interests of the monopolist-publisher, a means of exploiting the author and retarding the cultural growth of the masses of the people. . . .

The basic principles of the Soviet author’s right are completely different. . . . [It] has the objective of protecting to the maximum the personal and property interests of the author, coupled with the assurance of the widest distribution of the product of literature, science and the arts among the broad masses of the toilers.

may even offer protection through laws and policies outside the intellectual property regime.

6. Multiplicity Principle

The sixth principle is that the human rights framework for intellectual property anticipates a multiplicity of protections. The key criterion for satisfying the human rights obligations implicated by this framework is not whether a certain type of protection is offered, but whether meaningful protection is available to the moral and material interests resulting from intellectual productions. As the CESCR declared, "the protection under article 15, paragraph 1(c), need not necessarily reflect the level and means of protection found in present copyright, patent and other intellectual property regimes, as long as the protection available is suited to secure for authors the moral and material interests resulting from their productions."108

Thus, state parties enjoy a wide margin of discretion in determining what types of laws and policies will best offer such protection. For instance, although trade secret protection and patent rights immediately come to mind when one seeks protection for scientific innovations, state parties can easily choose to introduce other forms of protection, such as utility models or unfair competition. State parties can also determine whether trade secret protection has to be adjusted when patent protection is increased—perhaps due to demands unrelated to human rights protection, such as those from recently negotiated bilateral, regional, and plurilateral trade agreements.

In addition, state parties may consider protections outside the intellectual property regime. As far as the protection for the interests resulting from intellectual productions is concerned, there is a tendency to focus on the protection offered under the existing intellectual property system. Such a focus is attractive because the system already provides a wide array of rights, such as copyrights, patents, trademarks, trade names, trade secrets and other undisclosed information, geographical indications, industrial designs, plant varieties, layout designs of integrated circuits, utility models, as well as protection against unfair competition.

Nevertheless, the human rights framework does not require all protections to originate from the intellectual property regime. For example, the moral interests resulting from intellectual productions can be protected by not only moral rights, but also unfair competition, breach of contract, defamation law, or the right to privacy.109 Likewise, the material interests

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108. General Comment No. 17, supra note 20, ¶ 10.
resulting from intellectual productions can be protected through alternative funding models, such as grants, subsidies, prizes, advance market commitments, reputation gains, open source drug discovery, patent pools, and public-private partnerships.110

As Professor Dreyfuss rightly reminded us:

For those who require compensation, patent rights are only one alternative. Indeed, it can be argued that patent protection is a peculiar choice for a remuneration mechanism, given the lack of any affirmative right to practice or license the patented invention or to require the public to buy it.111

In view of the existence of many non-intellectual property alternatives, it is indeed no surprise that the CESCR went out of its way to note that "the purpose of enabling authors to enjoy an adequate standard of living can... be achieved through one-time payments."112 In her recent report on copyright policy, the Special Rapporteur also emphasized the availability of complementary models:

Open access scholarships, open educational resources and public art and artistic expressions are examples of approaches that treat cultural production as a public endeavour for the benefit of all. Those approaches complement the private, for-profit models of production and distribution and have a particularly important role.113

7. Substitutability Principle

The final principle is that the human rights framework for intellectual property allows state parties to substitute one form of protection with another—be it a different intellectual property right or a different form of protection outside the intellectual property regime. Such flexibility is understandable, considering that international or regional human rights instruments do not require the provision of a certain form of intellectual property right. These instruments also mandate that protection be offered

("A common device for privatizing speech is copyright; privatization can similarly be achieved using § 43(a) of the Lanham Act and such common law doctrines as trade secrets, rights of privacy and publicity, and unfair trade practices." (footnotes omitted)).

110. See Dreyfuss, Patents and Human Rights, supra note 32, at 81 ("Other methods of assuring payment include lead time advantages, government or private contracts and research grants, contests, bonuses, prizes, tenure, and professorial chairs."); Yu, Nonmultilateral Era, supra note 10, at 1078 (outlining the different non-patent options); see also Gene Patents and Collaborative Licensing Models: Patent Pools, Clearinghouses, Open Source Models and Liability Regimes (Geertrui Van Overwalle ed., 2009) (collecting articles discussing patent pools, clearinghouses, open source models, and liability regimes); Incentives for Global Public Health: Patent Law and Access to Essential Medicines 133–283 (Thomas Pogge et al. eds., 2010) (collecting articles discussing prizes, patent pools, and open source drug discovery); Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1088–92 (discussing the different acceptable modalities of protection that can be used to realize the right to the protection of interests in intellectual creations).

111. Dreyfuss, Patents and Human Rights, supra note 32, at 81.

112. General Comment No. 17, supra note 20, ¶ 16.

113. Special Rapporteur's Report on Copyright Policy, supra note 11, ¶ 111.
through the intellectual property system, as opposed to other laws and policies.

Indeed, if questions arise over the inadequate protection of a specific form of intellectual property right, such as the protection for pharmaceutical patents or undisclosed clinical trial data, those questions are likely to arise from requirements in the trade regime, as opposed to the human rights regime. If alternative forms of protection already exist to secure the human rights interests resulting from intellectual productions, those alternative protections can easily substitute for weaker protection for pharmaceutical patents or undisclosed clinical trial data. Nevertheless, the existence of these alternative protections may not relieve state parties of their obligations under the international minimum standards stipulated in the TRIPS Agreement or TRIPS-plus bilateral, regional, or plurilateral trade agreements.

B. STRUCTURAL LAYERS

In addition to the seven organizing principles discussed above, this section identifies four structural layers in the human rights framework for intellectual property. It further conceptualizes this framework as a four-layer hierarchical structure. Starting at the very bottom of this structure is the production layer (see Fig. 1). As far as scientific productions are concerned, this layer covers all types of scientific productions, including scientific publications, scientific innovations (including inventions), and scientific knowledge. Many would also include indigenous knowledge, innovations, and practices in the list, although such an inclusion is far from uncontroversial. Identifying these different types of productions or endeavors is important because each type may require different forms of protection, including those within and outside the intellectual property regime (Principles 4 to 6).

<table>
<thead>
<tr>
<th>Limitation Layer</th>
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<tr>
<td>Protection Layer</td>
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<tr>
<td>Interest Layer</td>
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<tr>
<td>Production Layer</td>
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Fig. 1 Structural Layers

The second layer is the interest layer. It covers two different types of human rights interests resulting from intellectual productions: moral and material interests (Principle 2). While most state parties tend to offer very

114. See General Comment No. 17, supra note 20, ¶ 9 (including among “scientific productions” “scientific publications and innovations, including knowledge, innovations and practices of indigenous and local communities”).

115. See id.
strong protection of the material interests—due in large part to the requirements of the TRIPS Agreements as well as WIPO-administered intellectual property conventions—these parties may not have offered adequate protection to the moral interests.

The third layer is the protection layer. It covers the different forms of protection that can be used to address the moral and material interests resulting from intellectual productions. This layer includes not only different intellectual property rights, but also protections outside the intellectual property regime (Principle 6). More importantly, the interaction between this layer and the lower interest layer may provide important insight into the interplay of intellectual property and human rights. For instance, a top-down focus on the interaction between the upper protection layer and the lower interest layer shows how the levels of protection in the current intellectual property regime have exceeded the requirements of international and regional human rights treaties. By contrast, a bottom-up focus on the interaction between the lower interest layer and the upper protection layer helps us locate the appropriate protection for the specific human rights interests identified in the interest layer or determine whether alternative forms of protection exist to secure these interests.

The final layer is the limitation layer. It covers the different limitations on the rights covered in the protection layer. Just because the extant rights in this layer are expansive does not mean that the human rights framework will protect these rights to the fullest extent. Indeed, intellectual property rights are limited by both endogenous and exogenous limits. Because the interest layer already covers both the rights and their endogenous limits, which are internalized within the intellectual property system, the limitation layer covers only their exogenous limits. Examples of these limits are those found in human rights treaties, constitutions, competition law, or in relation to "morality, public order and


118. See Hestermeyer, supra note 5, at 229–55 (discussing TRIPS flexibilities in relation to the protection of human rights); Correa, supra note 10 (discussing the use of human rights obligations to mitigate the impact of high intellectual property standards in developing countries); Geertrui Van Overwalle, Human Rights’ Limitations in Patent Law, in A PARADOX, supra note 4, at 236 (discussing the human rights limitations in patent law); Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1096–99 (discussing human rights-based compulsory licensing).


120. See High Commissioner’s Report, supra note 7, ¶ 64; Jonathan Berger, Advancing Public Health by Other Means: Using Competition Policy, in NEGOTIATING HEALTH: INTELLECTUAL PROPERTY AND ACCESS TO MEDICINES 181, 182 (Pedro Roffe et al. eds., 2006) [hereinafter NEGOTIATING HEALTH] (exploring how developing countries can use
the general welfare in a democratic society."\textsuperscript{121}

Consider, for instance, the human rights–based limits on intellectual property rights. In previous works, I noted the need to separate the conflicts between human rights and intellectual property rights into two sets of conflicts: external conflicts and internal conflicts.\textsuperscript{122} While internal conflicts exist only within the human rights regime, thereby requiring approaches to resolve competing fundamental rights, external conflicts suggest that intellectual property rights have expanded beyond the requirements of international or regional human rights instruments. Thus, in the event of a conflict between intellectual property and human rights, one can apply the principle of human rights primacy, which subordinates the non–human rights aspects of intellectual property rights to human rights obligations. The U.N. Sub-Commission endorsed this particular principle in Resolution 2000/7 on "Intellectual Property Rights and Human Rights."\textsuperscript{123}

Although this Part conceptualizes the human rights framework for intellectual property as a four-layer hierarchical structure, based largely on a positivist reading of international and regional human rights instruments, the proposed organizational principles and structural layers can

\textsuperscript{121} UDHR, supra note 19, art. 29(2) ("In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society."); see also ICESCR, supra note 19, art. 4 ("The States Parties to the present Covenant recognize that, in the enjoyment of those rights provided by the State in conformity with the present Covenant, the State may subject such rights only to such limitations as are determined by law only in so far as this may be compatible with the nature of these rights and solely for the purpose of promoting the general welfare in a democratic society."); Convention on the Grant of European Patents art. 53(a), Dec. 21, 1978, 1065 U.N.T.S. 255 ("European patents shall not be granted in respect of . . . inventions the commercial exploitation of which would be contrary to 'ordre public' or morality . . ."); TRIPS Agreement art. 27.2 ("Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality . . .").

\textsuperscript{122} For discussions of these conflicts, see generally Yu, Nonmultilateral Era, supra note 10, at 1091–96; Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1075–123.

\textsuperscript{123} See Resolution 2000/7, supra note 1, ¶¶ 2, 3 (reminding governments "of the primacy of human rights obligations over economic policies and agreements" and the importance of other human rights, such as the rights to food and health); Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1092–93 (discussing the principle of human rights primacy).
still be used even if one subscribes to a naturalist or philosophical conceptualization of human rights. Under the latter approach, different layers may exist, and each layer may interact with each other differently. Indeed, there is no requirement that all four structural layers be present. There is also neither a necessary structure nor a necessary relationship between each structural layer.124

Even if one subscribes to a positivist conceptualization of human rights—an approach taken in this article—the structural layers could change if the language in the underlying human rights instruments is significantly modified. Nevertheless, given the slow and path-dependent evolution of international and regional human rights instruments, such a significant modification is highly unlikely in the near future.

C. Advantages

Thus far, commentators have not yet organized the human rights framework for intellectual property into different structural layers based on recognized principles. Nevertheless, the use of layered approaches is not new to scholars in the intellectual property or related fields. For example, Lawrence Solum and Minn Chung proposed “the layers principle,” arguing that internet regulation should respect the integrity of the network’s underlying architecture.125 Michael Risch also used empirical data to demonstrate how the patent system can be better understood as a system consisting of a complex set of layers, including enforcement, patenting, and technology.126

Organizing the human rights framework into structural layers based on recognized principles has at least four advantages. First, these principles and layers will help provide clarity to the overall framework. By compelling scholars and policymakers to be clear about the specific layer they seek to address, the proposed layered approach will facilitate a systematic analysis of this framework. Such an analysis is particularly important considering the wide array of intellectual property rights and policy issues involved. The debate on the protection of traditional knowledge and traditional cultural expressions, for instance, has “impact[ed] on a wide variety of policy areas, including agricultural productivity, biological diversity, cultural patrimony, food security, environmental sustainability, business ethics, global competition, human rights, international trade, public health, scientific research, sustainable development, and wealth distribution.”127

Second, the proposed layered approach will underscore the complexity of the debate on intellectual property and human rights. As the past dec-

124. Thanks to Joshua Sarnoff for pushing the Author on this particular point.
ade has shown, this debate is no longer solely about the human rights impact of intellectual property protection, although such an impact remains of considerable concern. The debate has also moved beyond whether intellectual property rights are human rights. After all, some aspects of these rights have human rights status while the other aspects do not (Principle 1). Indeed, given the groundwork commentators have already laid down in regard to this debate, it is about time we had a much more sophisticated and nuanced debate concerning issues lying at the intersection of intellectual property and human rights.

Third, the identification of the different layers in the human rights framework enables policymakers and commentators to see more clearly the framework's different orientation from that of an intellectual property regime. The intellectual property regime is a top-down regime that starts with the protection layer. As a result, some of the protections available in this regime are simply economic rights with no human rights basis. By contrast, the human rights regime is a bottom-up regime that starts with individual contributions through literary, artistic, or scientific productions. Once we identify these contributions in the production layer, we will have to locate the different human rights interests in these contributions before finally figuring out how to protect these interests.

Thus, if we take a bottom-up approach that is common to the human rights regime, the protections available in the intellectual property system will not only have more support and legitimacy, but it will also align better with the needs of individual authors and inventors, creative and inventive communities, and society at large. It is therefore no surprise that the U.N. Sub-Commission, the U.N. High Commissioner for Human Rights, the CESCR, the Special Rapporteur, and legal commentators have all advocated the use of human rights to curb the excess of intellectual property law and policy.128

Finally, the multiple layers in the human rights framework will pave the way for a further exploration of the complex interrelationships between the different layers. The previous section already discussed the different insights one can draw from the interaction between the interest and protection layers based on whether a top-down or bottom-up approach is to be used. Although this article does not allow for a greater exploration of

128. See, e.g., Resolution 2000/7, supra note 1, ¶ 3 (reminding governments “of the primacy of human rights obligations over economic policies and agreements”); General Comment No. 17, supra note 20, ¶ 2 (“In contrast to human rights, intellectual property rights are generally of a temporary nature . . . and can be revoked . . .”); High Commissioner's Report, supra note 7, ¶ 60 (“Members should . . . implement the minimum standards of the TRIPS Agreement bearing in mind both their human rights obligations as well as the flexibility inherent in the TRIPS Agreement, and recognizing that ‘human rights are the first responsibility of Governments.’”); Special Rapporteur's Report on Copyright Policy, supra note 11, ¶¶ 94–98 (noting the need to “[e]nsure[e] the compatibility of copyright laws with human rights”); Correa, supra note 10 (discussing the use of human rights obligations to mitigate the impact of high intellectual property standards in developing countries); Van Overwalle, supra note 118 (discussing the human rights limitations in patent law).
the interaction between these layers, the insights drawn from a further exploration of the interrelationship between and among these layers are likely to be conducive to developing a more robust and sophisticated human rights framework for intellectual property.

In the Anglo-American tradition, the primary justification for intellectual property protection remains utilitarian or instrumental.129 Greater protection of intellectual property rights is needed to provide incentives to enable individual creators and inventors to engage in literary, artistic, and scientific productions. The interrelationship between the production and protection layers can be analyzed both theoretically and empirically. This interrelationship, for example, is the focus of a number of recent empirical studies.130 The more difficult question concerns the interest layer, which falls uncomfortably between the production and protection layers. How this layer interacts with the other two layers deserves our greater attention.

To be fair, this layered framework does not explain how much intellectual property protection a country should offer. What level of protection will be optimal is, by and large, an economic inquiry. Its outcome often varies from country to country; it may also depend on the type of industry or scientific production. Among the oft-cited influential factors are the country's economic conditions, imitative or innovative capacity, productive and research capabilities, and institutional and budgetary constraints.131

129. See Register of Copyrights, 87th Cong., 1st Sess., Copyright Law Revision 5 (Comm. Print 1961) (stating that the primary purpose of copyright is "to foster the creation and dissemination of intellectual works for the public welfare"); see also Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 432 (1984) ("The ultimate aim is . . . to stimulate artistic creativity for the general public good.") (quoting Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975)).

130. See, e.g., Jessica Silbey, The Eureka Myth: Creators, Innovators, and Everyday Intellectual Property (2014) (exploring the relationships between intellectual property law and creative and innovative activities based on fieldwork involving artists, scientists, as well as their employers, lawyers and managers); Christopher J. Buccafusco & Christopher Jon Sprigman, The Creativity Effect, 78 U. Chi. L. Rev. 31 (2011) (providing the results of an experiment demonstrating that intellectual property transactions are subject to a creativity effect—"a valuation anomaly . . . that may affect the way in which the originators of creative works assign value to their creations"); Christopher J. Buccafusco & Christopher Jon Sprigman, Valuing Intellectual Property: An Experiment, 96 Cornell L. Rev. 1 (2010) (providing the results of an experiment demonstrating that a substantial valuation asymmetry exists between creators and purchasers of intellectual property, with creators valuing their work more than twice as highly as potential buyers do); Stuart J.H. Graham et al., High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey, 24 Berkeley Tech. L.J. 1255 (2009) (drawing on the responses of 1,332 technology startups to show the varied and subtle reasons for using the patent system, including whether it is used to provide an "incentive to invent").

Nevertheless, when the proposed framework reveals that the level of intellectual property protection has far exceeded what is supported by the human rights interests, the discrepancy will call into doubt the necessity of the excess protection. Such protection will also raise questions about the justification and expediency of the existing intellectual property system. In fact, if conflicts arise between the protection offered by this system and the protection of other human rights interests, the country's international human rights obligations will require policymakers to make appropriate adjustment to the intellectual property system to ensure that the obligations be properly discharged.\(^{132}\) As the Special Rapporteur succinctly stated in her recent report on patent policy, "The human rights perspective demands that patents do not extend so far as to interfere with individuals' dignity and well-being. Where patent rights and human rights are in conflict, human rights must prevail."\(^{133}\)

III. ILLUSTRATIONS INVOLVING SCIENTIFIC PRODUCTIONS

To illustrate the organizing principles and structural layers discussed in Part II, this Part provides illustrations from four different types of scientific productions: (1) scientific publications; (2) scientific innovations (including inventions); (3) scientific knowledge; and (4) indigenous knowledge, innovations, and practices. The analysis begins with the production layer before proceeding to the interest layer and then the protection layer. This analysis, however, does not examine the limitation layer, as the exogenous limits to intellectual property rights, while important and varied, tend to operate the same way regardless of the type of scientific production involved.

Although this Part focuses only on scientific productions, the same organizing principles and structural layers can apply to artistic or literary productions. After all, the human rights framework for intellectual property cover the moral and material interests resulting from any type of production—be it literary, artistic, or scientific.

A. SCIENTIFIC PUBLICATIONS

As with all scientific productions, scientific publications involve two different types of human rights interests: moral and material interests. Moral interests in scientific publications are generally protected by moral

\(^{132}\) See discussion infra Part II.B (discussing the limitation layer and the human rights limits on intellectual property rights).

\(^{133}\) Special Rapporteur's Report on Patent Policy, supra note 17, summary.
Anatomy of Human Rights Framework

rights. For instance, the right of attribution (le droit à la paternité) ensures the proper identification and attribution of a creative work. The right of integrity (le droit au respect de l'œuvre) prevents that work from being distorted, mutilated, or otherwise modified in a manner that would prejudice the author's honor or reputation. If these rights are unavailable, they can be substituted with alternative forms of protection. For example, although pre–World War II Russia did not recognize economic rights in copyrighted works, it recognized some forms of non-property-based authorial protection. As noted earlier, one could also protect moral interests through unfair competition, breach of contract, defamation law, or the right to privacy.

Material interests in scientific publications are generally protected by economic rights in the copyright system. In the United States, for instance, the system protects the rights to reproduce, distribute, adapt, publicly display, publicly perform, and digitally transmit creative works. These rights remain important and widely recognized throughout the

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Figure 2: Scientific Publications

Material interests in scientific publications are generally protected by economic rights in the copyright system. In the United States, for instance, the system protects the rights to reproduce, distribute, adapt, publicly display, publicly perform, and digitally transmit creative works. These rights remain important and widely recognized throughout the

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134. The Special Rapporteur's recent report on copyright policy, however, suggested that moral rights alone may not adequately protect the authors' moral interests: Copyright regimes may under-protect the moral interests of authors because producers/publishers/distributors and other "subsequent right-holders" typically exercise more influence over law-making than individual creators, and may have opposing interests when it comes to those rights. That makes it important to look beyond moral rights already recognized in copyright regimes to discern additional or stronger moral interests from a human rights standpoint, such as, in particular, the interest of artists and researchers in creative, artistic and academic freedom, freedom of expression, and personal autonomy.

Special Rapporteur's Report on Copyright Policy, supra note 11, ¶ 38.

135. See Berne Convention, supra note 62, art. 6bis(1) (protecting "the right to claim authorship of the work").

136. See id. (protecting "the right . . . to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation").

137. See discussion supra note 107.

138. See Kwall, Copyright and the Moral Right, supra note 109, at 17–33.

139. The length of the bars in Figures 2 to 4 may vary, depending on one's perspective on the scope of coverage in each layer as well as the level of protection under the existing intellectual property system. For example, some observers may find certain bars too long while others may find them too short. The goal of these figures is not to state precisely the length of each bar. Rather, it is to further an understanding of how the different layers operate and interact with each other.

world—thanks to their historical evolution and the repeated transplant of trade norms, such as through the TRIPS Agreement and TRIPS-plus bilateral, regional, and plurilateral agreements. Nevertheless, the human rights framework does not prevent copyright protection from being replaced by other forms of protection (Principle 7).

Finally, scientific publications inherently cover scientific knowledge, which Part III.C will discuss in greater detail. In virtually all jurisdictions, the copyright system distinguishes between ideas and expressions and between facts and expressions. The lack of protection of ideas therefore remains a key “ceiling” for copyright protection. For example, Article 9(2) of the TRIPS Agreement states that “[c]opyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such.” Article 10 further provides that the protection of “[c]ompilations of data or other material shall not extend to the data or material itself.”

The free availability of scientific data is particularly important to scientific productions. As Richard Claude observed:

Intellectual property rights related to science should promote scientific progress and broad access to its benefits. To do so, these protections must respect the free exchange of scientific data indispensable for scientific research and creative activity. Intellectual property regimes must also encourage the development of international contacts and co-operation in the scientific field.

B. Scientific Innovations (Including Inventions)

Similar to scientific publications, scientific innovations (including inventions) involve two different types of interests: moral and material interests. The protection of moral interests in scientific innovations is particularly challenging because these innovations are widely covered by the patent system and no direct moral right equivalents exist in this system. Although first inventors are generally recognized in patents—thus suggesting some form of protection for attribution—subsequent inventors are not. Even worse, neither first nor subsequent inventors can protect the integrity of their inventions.

As if the lack of integrity rights were not harmful enough, inventors may not always be recognized for their contributions. A continuous debate exists about who actually invented some of the most important inventions in the past two centuries, ranging from the steam engine to the cotton gin and from the telegraph to the radio. Those sympathetic to African American inventors have also questioned whether the patent system has been historically biased against minority inventors to the point that they have largely failed to recognize the moral interests of these
By contrast, the material interests in scientific innovations receive more considerable protection. Such interests are generally protected by either trade secret or patent law. Trade secret law protects undisclosed information that has commercial value as long as the inventors take reasonable steps to keep the information secret. If the inventors prefer not to keep their innovations secret, they could secure a limited term of property rights in the inventions through the patent system in exchange for the disclosure of those inventions. The secured rights would allow them to exclude others from manufacturing, distributing, importing, selling, or offering to sell their patented inventions.

In addition to trade secret and patent laws, other forms of protection exist. Jerome Reichman, for instance, developed a pioneering proposal for using compensatory liability rules to address problems concerning the protection of traditional knowledge and subpatentable inventions. Under his proposal, second comers will be required “to pay equitable compensation for borrowed improvements over a relatively short period.

145. See Lateef Mtima, An Introduction to Intellectual Property Social Justice and Entrepreneurship: Civil Rights and Economic Empowerment for the 21st Century, in INTELLECTUAL PROPERTY, ENTREPRENEURSHIP AND SOCIAL JUSTICE: FROM SWORDS TO PLOUGHSHARES 1, 15–16 (Lateef Mtima ed., 2015) (“Slaves, being property themselves, could not hold patents as a matter of law. From Bessie Smith to Elijah McCoy to Henrietta Lacks, the artistic revelations, technological inventions, scientific contributions and entrepreneurial innovations of African Americans have been systematically misappropriated or undermined by majority enterprises and individuals who enjoy the advantages of racial and financial capital.”); Keith Aoki, Distributive and Syncretic Motives in Intellectual Property Law (with Special Reference to Coercion, Agency, and Development), 40 U.C. DAVIS L. REV. 717, 722 (2007) (discussing the invention of the cotton gin and the role of black inventors in the early days of the U.S. patent system); K.J. Greene, Idea Theft: Frivolous Copyright-Lite Claims, or Hollywood Business Model?, 7 HASTINGS SCI. & TECH. L.J. 119, 125 (noting that the phrase “real McCoy” “refers to an uncredited black inventor”).


148. See J.H. Reichman, Of Green Tulips and Legal Kudzu: Repackaging Rights in Subpatentable Innovation, 53 VAND. L. REV. 1743, 1776–91 (2000) [hereinafter Reichman, Of Green Tulips]. This proposal has been further extended to address problems concerning the protection of traditional knowledge. See Jerome H. Reichman & Tracy Lewis, Using Liability Rules to Stimulate Local Innovation in Developing Countries: Application to Traditional Knowledge, in INTERNATIONAL PUBLIC GOODS, supra note 59, at 337, 348–65.
of time."  

Unlike the property-based intellectual property system, his alternative regime "could stimulate investment without chilling follow-on innovation and without creating legal barriers to entry."  

Outside the intellectual property regime, commentators have also called for the use of alternative forms of protection, such as grants, subsidies, prizes, and open source arrangements. Although these protections do not reside in the intellectual property regime, they may provide inventors with the needed protection of their material interests.

Patent Protection / XIP=Non-IP Protection / XP=Non-Patent Protection  
UI=Undisclosed Information / Inv=Investment-based Protection

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<thead>
<tr>
<th>Pat</th>
<th>XIP</th>
<th>XP</th>
<th>Pat</th>
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<tr>
<td>Moral Interests</td>
<td>Material Interests</td>
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Scientific Innovations (Including Inventions)

To further complicate matters, scientific innovations are often broadly defined in non-intellectual property fields, such as economics and development studies. As a result, these innovations could include types of innovations that do not meet the standards found in intellectual property laws and treaties. For example, imitations could be considered innovations, even though such imitations often lack novelty. Nevertheless, from the standpoint of developing a human rights framework for intellectual property, it is important to recognize the human rights interests involved regardless of whether these innovations meet the requirements of the intellectual property system.

Finally, like scientific publications, scientific innovations inherently cover scientific knowledge, which Part III.C will further discuss. Similar to the idea-expression or fact-expression dichotomy in copyright law, patent protection is generally not extended to "laws of nature, natural phenomena, and abstract ideas."  

Although the Paris Convention does not define what constitutes an invention, Article 27.2 of the TRIPS Agree-

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149. Reichman, Of Green Tulips, supra note 148, at 1777.
150. Id. at 1746.
151. See sources cited supra note 110.
152. See Diamond v. Diehr, 450 U.S. 175, 185 (1981) ("This Court has undoubtedly recognized limits to § 101 and every discovery is not embraced within the statutory terms. Excluded from such patent protection are laws of nature, natural phenomena, and abstract ideas."); see also Dreyfuss, Patents and Human Rights, supra note 32, at 73 ("[A]t least on the patent side, there is little reason to think that the human rights concerns associated with creative labor must be furthered by recognizing a right to full control over information that creative labor produces.").
153. See Gervais, Human Rights, supra note 51, at 91 ("[The Paris Convention] is mostly about applications for a registration of patent, design and trademark rights. It fails
ment, which incorporated the Convention by reference, allows WTO
member states to “exclude from patentability inventions, the preven-
tion . . . of the commercial exploitation of which is necessary to protect
ordre public or morality.’” 154 Article 27.3 further allows these states to
exclude from patentability “diagnostic, therapeutic and surgical methods
for the treatment of humans or animals” as well as “essentially biological
processes for the production of plants or animals other than non-biologi-
cal and microbiological processes.” 155

C. SCIENTIFIC KNOWLEDGE

The protection of scientific knowledge is highly controversial.156 Indeed,
because human rights instruments only protect “the moral and ma-
terial interests resulting from any scientific, literary or artistic produc-
tion of which he [or she] is the author,” 157 one could debate whether scientific
knowledge is part of the protected authorial production. For instance, if
the knowledge concerned is purely scientific, the one who discovers or
acquires such knowledge can hardly be considered its author.

The reluctance to protect scientific knowledge, especially the material
interests in such knowledge, is understandable. As Framen Thomas Jeffer-
son, the author of the 1793 Patent Act and the “first administrator of [the
U.S.] patent system,” 158 wrote in his famous 1813 letter to inventor Isaac
McPherson:

Stable ownership is the gift of social law, and is given late in the
progress of society. It would be curious then, if an idea, the fugitive
fermentation of an individual brain, could, of natural right, be
claimed in exclusive and stable property. If nature has made any one
thing less susceptible than all others of exclusive property, it is the
action of the thinking power called an idea, which an individual may
exclusively possess as long as he keeps it to himself; but the moment
it is divulged, it forces itself into the possession of every one, and the
receiver cannot dispossess himself of it. Its peculiar character, too, is
that no one possesses the less, because every other possesses the
whole of it. He who receives an idea from me, receives instruction
himself without lessening mine; as he who lights his taper at mine,
receives light without darkening me. That ideas should freely spread
to provide even a definition of what is protected (terms such as ‘patent’ and
‘trademark’)).” 154. TRIPS Agreement art. 27(2).
155. Id. art. 27(3).
156. This section does not provide any figure for scientific knowledge. If such a figure is
to be provided, the four layers will remain the same. It remains unclear, however, how
much protection will be available in the protection layer. Although intellectual property
rights generally do not protect scientific knowledge, the protection for ideas, knowhow,
and trade secrets is available through intellectual property laws, knowhow contracts, and
technological protection measures. See discussion infra text accompanying notes 179–182.
It is also debatable how much of the protection layer is covered by the limitation layer,
thereby rendering the laws and protective measures identified in the protection layer
inappropriate.
157. UDHR, supra note 19, art. 27(2); ICESCR, supra note 19, art. 15(1)(c).
from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody.159

This portion of Jefferson’s letter was quoted in full in the seminal case of *Graham v. John Deere Co.*, 160 in which the U.S. Supreme Court clarified the non-obviousness requirement of the patent system.

Moreover, just because the moral interests resulting from scientific productions should be protected does not mean that the material interests should also be protected to the same extent. It is no coincidence that the human rights framework separates the moral interests from the material interests (Principle 2). Indeed, the disclosure of scientific knowledge is the quid pro quo that has been repeatedly used to justify the need for a limited monopoly in the copyright or patent system. Regardless of the system, however, there is a general expectation that the protection is for limited duration.

More importantly, even when intellectual property rights are granted, limitations and exceptions exist in the copyright or patent system to allow others to use scientific knowledge under specified conditions. These conditions include fair use, 161 exhaustion of rights, 162 exceptions for research, 163 early working, 164 and the development of diagnostics, 165 as well

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159. Id. at 8 n.2; see also Mossoff, *Thomas Jefferson*, supra note 68, at 959–67 (discussing the Jeffersonian story of patent law).

160. 383 U.S. at 8 n.2.


162. See, e.g., id. § 109(a).


164. See *Comm’n on Intellectual Prop. Rights, Integrating Intellectual Property Rights and Development Policy* 50 (2002) (discussing the importance of the Bolar exception, which “makes it legal for a generic producer to import, manufacture and test a patented product prior to the expiry of the patent in order that it may fulfill the regulatory requirements imposed by particular countries as necessary for marketing as a generic”).

165. See TRIPS Agreement art. 27.3(a) (“Members may . . . exclude from patentability . . . diagnostic, therapeutic and surgical methods for the treatment of humans or ani-
as special arrangements for compulsory licensing, parallel importation, and government use. These conditions are particularly important because the intellectual property system aims to promote dissemination of knowledge and transfer of technology. In the TRIPS Agreement, Article 7 expressly states its objectives as follows:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

To further complicate matters, the UDHR, the ICESCR, and other international or regional human rights instruments have all recognized the right to “enjoy the benefits of scientific progress and its applications.” If scientific knowledge could be completely protected, it is difficult to see how one could still enjoy and exercise this important right. As the Special Rapporteur reminded us:

The right to have access to scientific knowledge is pivotal for the realization of the right to science. At the juncture of the right to education and the right to information, it implies a right to science education, understood as a right to be introduced to and informed about main scientific discoveries and their applications, regardless of frontiers. It also entails education instilling a spirit of scientific inquiry. Popularizing science outside schooling is also important. Interesting measures such as “science week”, the introduction of “science cafes” and the opening of science museums with specific educational approaches contribute to this objective.

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167. TRIPS Agreement art. 7; see also Peter K. Yu, The Objectives and Principles of the TRIPS Agreement, 46 Hous. L. Rev. 979, 1000–08 (2009) (discussing Article 7 of the TRIPS Agreement). Article 7 of the TRIPS Agreement is highly important because the Vienna Convention on the Law of Treaties stipulates that “[a] treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.” Vienna Convention on the Law of Treaties art. 31.1, May 23, 1969, 1155 U.N.T.S. 331.

168. UDHR, supra note 19, art. 27(1); ICESCR, supra note 19, art. 15(1)(b).

169. Special Rapporteur’s Report on the Right to Science, supra note 25, ¶ 27 (footnotes omitted); see also id. ¶ 65 (“The Special Rapporteur stresses the need to guard against promoting the privatization of knowledge to an extent that deprives individuals of opportunities to take part in cultural life and to enjoy the fruits of scientific progress, which would also impoverish society as whole.”); Claude, supra note 38, at 259 (“[T]he State obligation to ensure the ‘development of science’ necessarily involves the right to education, a wellspring from which science is developed as an activity beneficial to mankind.”); id. at 267–68 (discussing science education).
To some extent, the need for access to scientific knowledge has raised questions about how to resolve competing human rights. On the one hand, the human rights instruments recognize the right to the protection of the interests resulting from scientific productions. On the other hand, those instruments also recognize the right to enjoy the benefits of scientific progress and its applications. Although this article does not allow for a further exploration of how to resolve conflicts between competing rights within the human rights framework, such resolution is likely to play a very important role in the debate on intellectual property and human rights.

Thus far, commentators have employed different approaches to resolve these conflicts. For example, they have discussed the distinction between true conflicts and false conflicts, drawing on conflict-of-law jurisprudence and scholarship. They have also explored the use of hierarchies, balancing techniques, the proportionality doctrine, and interpretations.

170. See Sharon E. Foster, The Conflict Between the Human Right to Education and Copyright, in *Intellectual Property and Human Rights*, supra note 4, at 335, 365-66 (arguing that market failures can precipitate false conflicts).


172. See generally Jaccio Bomhoff, *Balancing Constitutional Rights: The Origins and Meanings of Postwar Legal Discourse* (2013) (providing a historical and comparative analysis of how U.S. and German courts balanced constitutional rights after the Second World War); Leto Cariolou, *The Search for an Equilibrium by the European Court of Human Rights*, in *Conflicts Between Fundamental Rights*, supra note 171, at 249 (discussing the balancing approach used by the European Court of Human Rights); Thilo Marauhn & Nadine Ruppel, *Balancing Conflicting Human Rights: Konrad Hesse’s Notion of “Praktische Konkordanz” and the German Federal Constitutional Court*, in *Conflicts Between Fundamental Rights*, supra note 171, at 273 (discussing how the German notion of “praktische konkordanz” (practical concordance) can be used to balance not only conflicting rights but also human rights with other competing interests).

173. See *General Comment No. 17, supra note 20*, ¶ 23 (“Limitations must therefore be proportionate, meaning that the least restrictive measures must be adopted when several types of limitations may be imposed.” (emphasis added)); Jonas Christoffersen, *Human Rights and Balancing: The Principle of Proportionality, in Research Handbook*, supra note 4, at 19 (discussing the use of the proportionality principle to balance conflicting interests and adjudicate disputes placed before the European Court of Human Rights); Henning Grosse Ruse-Khan, *Proportionality and Balancing Within the Objectives for Intellectual Property Protection*, in *Intellectual Property and Human Rights*, supra note 4, at 185 (calling for the use of proportional balancing as a guiding principle in the interpretation of the TRIPS Agreement); Wouter Vandenhole, *Conflicting Economic and Social Rights: The Proportionality Plus Test*, in *Conflicts Between Fundamental Rights*, supra note 171, at 559 (calling for the introduction of a “proportionality plus test,” which prioritizes vulnerable groups and emphasizes the core of the rights).
by reference to external norms—such as scientific norms in relation to
the right to enjoy the benefits of scientific progress and its applications.\footnote{174} In addition, the Ontario Human Rights Commission introduced a Policy on Competing Human Rights,\footnote{175} which outlines a process for reconciling competing human rights claims and providing case-by-case accommodation of individual and group rights. In an earlier work, I also outlined three different approaches that can be used to resolve these conflicts: (1) just remuneration; (2) core minimum; and (3) progressive realization.\footnote{176}

\footnote{174} See Amy Kapczynski, Professor of Law, Yale Law School, Remarks at the Workshop on “Patent Regimes and the Right to Science and Culture,” Yale Law School (Oct. 29, 2014). In a widely cited 1942 essay, Robert Merton stated that “[f]our sets of institutional imperatives—universalism, communism, disinterestedness, organized skepticism—are taken to comprise the ethos of modern science.” ROBERT K. MERTON, The Normative Structure of Science, in THE SOCIOLOGY OF SCIENCE: THEORETICAL AND EMPIRICAL INVESTIGATIONS 267, 270 (Norman W. Storer ed., 1973). As he declared:
The institutional conception of science as part of the public domain is linked with the imperative for communication of findings. Secrecy is the antithesis of this norm; full and open communication its enactment. The pressure for diffusion of results is reenforced by the institutional goal of advancing the boundaries of knowledge and by the incentive of recognition which is, of course, contingent upon publication. A scientist who does not communicate his important discoveries to the scientific fraternity . . . becomes the target for ambivalent responses. He is esteemed for his talent and, perhaps, for his modesty. But, institutionally considered, his modesty is seriously misplaced, in view of the moral compulsive for sharing the wealth of science.

\footnote{175} Policy on Competing Human Rights, supra note 171. The Policy articulated eight “main legal principles that organizations must consider when they deal with competing rights situations”:

1. No rights are absolute
2. There is no hierarchy of rights
3. Rights may not extend as far as claimed
4. The full context, facts and constitutional values at stake must be considered
5. Must look at extent of interference (only actual burdens on rights trigger conflicts)
6. The core of a right is more protected than its periphery
7. Aim to respect the importance of both sets of rights
8. Statutory defences may restrict rights of one group and give rights to another.

\footnote{176} See Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1094–123. As I explained in an earlier work:
The just remuneration approach is ideal for situations involving an inevitable conflict between two human rights—for example, between the right to the protection of interests in intellectual creations and the right to freedom of expression. Under this approach, authors and inventors hold a right to remuneration (rather than exclusive control) while individuals obtain a human rights–based compulsory license (as compared to a free license). The core minimum approach, in contrast, provides guidance on the minimum essential levels of protection a state has to offer to comply with its human rights obligations. That approach seeks to balance the state’s obligations against the inevitable constraints created by a scarcity of natural and economic resources. Finally, the progressive realization approach offers insight into the
Under the just remuneration approach, for instance, authors and inventors hold a right to remuneration (rather than exclusive control) while individuals obtain a human rights-based compulsory license (as opposed to a free license).\(^{177}\)

Finally, just because the protection of scientific knowledge is controversial and considered inappropriate by many does not mean that such knowledge cannot, and will not, be legally protected. For example, Peter Lee reminded us that, "[f]ollowing World War I, there was an international movement, primarily based in Europe, to protect scientific property' with exclusive rights."\(^{178}\) Even today, many jurisdictions, especially WTO member states, have laws protecting trade secrets and other undisclosed information.\(^ {179}\) In addition, knowhow contracts and technological protection measures have been widely used to protect ideas,\(^ {180}\) despite criticisms by the Special Rapporteur and other commentators.\(^ {181}\) In the past decade, some commentators have also explored the need for greater protection of ideas.\(^ {182}\)
D. Indigenous Knowledge, Innovations, and Practices

Like scientific knowledge, the protection of indigenous knowledge, innovations, and practices is highly controversial.\(^{183}\) Apart from the debate on whether this type of production is scientific at all, such protection has raised four sets of highly complex and difficult-to-resolve questions. First, no clear distinction exists between scientific publications and scientific innovations. Also unclear is the distinction between copyright and patent or between traditional cultural expression and traditional knowledge. Many indigenous communities, for instance, do not make these distinctions, considering them artificial.\(^{184}\)

Second, indigenous communities may not distinguish between moral and material interests. Nor do they always pay attention to material interests, given their reluctance to commodify knowledge, innovations, and practices.\(^{185}\) Nevertheless, compensation and benefit sharing remain an

\(^{183}\) Like the earlier section, this section does not provide any figure for indigenous knowledge, innovations, and practices. If such a figure is to be provided, the four layers will remain the same. It remains unclear, however, how much protection will be available in the protection layer, given the ongoing negotiations surrounding the protection of genetic resources, traditional knowledge, and traditional cultural expressions. See discussion infra text accompanying notes 192–196.

\(^{184}\) As WIPO noted in its booklet on Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions:

> While in discussions about [intellectual property] protection, TCEs [traditional cultural expressions] are generally discussed distinctly from TK [traditional knowledge], this is not to suggest that these are distinguished in the traditional context. The distinction between TK and TCEs does not necessarily represent any of the particular holders' holistic comprehension of their own integrated heritage. For many holders, TK and its form of expression are seen as an inseparable whole. For example, a traditional tool may embody TK but also may be seen as a TCE in itself because of its design and ornamentation.

World Intellectual Prop. Org., Pub. No. 933(E), Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions 13 (2015); see also Christoph Antons, Introduction to Traditional Knowledge, Traditional Cultural Expressions, and Intellectual Property Law in the Asia-Pacific Region 1, 4 (Christoph Antons ed., 2009) ("[T]he distinction between traditional knowledge 'in the strict sense' and [traditional cultural expressions] has frequently been criticized and analysts have pointed out that in the world-view of many indigenous and local communities, cultural expressions are inseparable from the social and natural environment, in which they are produced.").

\(^{185}\) As Erica-Irene Daes, the former Special Rapporteur of the Sub-Commission on Prevention of Discrimination and Protection of Minorities, observed:

> [I]ndigenous peoples challenge the fundamental assumptions of globalization. They do not accept the assumption that humanity will benefit from the construction of a world culture of consumerism. Indigenous peoples are acutely aware, from their own tragic experience over the past five hundred years, that consumer societies grow and prosper at the expense of other peoples and the environment. Indigenous peoples realize that the cancer of consumerism is fundamentally dependent upon "eating other people's future," as the great Bengali philosopher Tagore once put it. In fact, most of the indigenous peoples I meet are opposed to the phrase "sustainable development," which they regard as a code phrase for the illusory goal of continuous growth of human consumption.

Erica-Irene Daes, Intellectual Property and Indigenous Peoples, 95 Am. Soc'y Int'l. Proc. 143, 143 (2001); see also U.N. Econ. & Social Council, Sub-Comm'n on Prevention of Dis-
important part of the debate on traditional knowledge and traditional cultural expressions. It would indeed be misleading to claim that indigenous communities have no interest in protecting the material interests in their knowledge, innovations, and practices.

Third, there remains a lack of consensus on what type of law or policy should be used to protect indigenous knowledge, innovations, and practices. Although strong arguments exist to allow indigenous communities to determine for themselves what type of protection should be available, indigenous communities have yet to achieve a consensus on how their knowledge, innovations, and practices are to be protected. Nor have indigenous communities across the world agreed on how such protection is to be secured at the global level.

Finally, it is difficult to draw the line between indigenous knowledge and indigenous innovations and practices. While the protection of the latter will present fewer challenges, considering that scientific publications and innovations are routinely protected, the protection of the former can become quite controversial. Notwithstanding this controversy, there is still no easy way to determine when knowledge constitutes or becomes an innovation.

Apart from these four sets of highly challenging questions, the debate on indigenous knowledge, innovations, and practices has been complicated by the plight and historical mistreatment of traditional and indigene
nous communities. Many international or regional instruments, for example, have called for granting special protection to these communities. Article 31(1) of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which the United Nations General Assembly adopted in September 2007, states:

Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.

Likewise, General Comment No. 17 declared: "States parties should adopt measures to ensure the effective protection of the interests of indigenous peoples relating to their productions, which are often expressions of their cultural heritage and traditional knowledge." Paralleling the UNDRIP language, General Comment No. 21 stipulated:

Indigenous peoples have the right to act collectively to ensure respect for their right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literature, designs, sports and traditional games, and visual and performing arts. States parties should respect the principle of free prior and informed consent of indigenous peoples in all matters covered by their specific rights.

In sum, as far as indigenous knowledge, innovations and practices are concerned, complete information about the different layers of the human right framework remains unavailable. While the UNDRIP, the ICESCR, and other intergovernmental documents indicate that the production layer includes indigenous knowledge, innovations, and practices, it remains unclear what interests the interest layer will cover. Some indigenous communities will certainly recognize the existence of both moral and material interests. Others, however, may consider inappropriate the emphasis on the latter, especially in regard to sacred knowledge, innovations, and practices. Some indigenous communities may also be willing

188. See Special Rapporteur's Report on Copyright Policy, supra note 11, ¶ 56 ("Intellectual property regimes have historically failed to take into account the unique concerns of indigenous peoples.").
190. General Comment No. 17, supra note 20, ¶ 32.
191. General Comment No. 21, supra note 72, ¶ 37.
192. As Thomas Greaves explained:
to strike a compromise between stronger material protection and weaker moral recognition if they do not foresee any success in obtaining meaningful protection for the latter.

To make the analysis even more difficult, the protection layer remains widely undetermined. Despite more than a decade and a half of international negotiations, the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore has yet to come up with a formal international instrument, or instruments, to address the protection layer. Although the Committee submitted the draft texts of three separate instruments—on genetic resources, traditional knowledge, and traditional cultural expressions—for consideration by the WIPO General Assembly in September 2014, the WIPO member states failed to agree on a work program concerning this Committee. The Committee’s work was temporarily suspended in early 2015 and did not resume until its mandate was renewed at the 2015 WIPO General Assembly.

The control of traditional ideas and knowledge identifies places, customs and beliefs which, if publicly known, will destroy parts of a people’s cultural identity. Sometimes it is knowledge entrusted only to properly prepared religious specialists. Disclosure to other, unqualified members destroys it. Sometimes it is knowledge shared among all of a society's members, but not with outsiders. Such knowledge charters a society’s sense of self; to disclose it loosens the society’s self-rationale.


193. Established in September 2000, the Committee sought to explore “the development of an international legal instrument or instruments for the effective protection of traditional cultural expressions and traditional knowledge, and to address the intellectual property aspects of access to and benefit-sharing in genetic resources.” WIPO, *Traditional Knowledge*, http://www.wipo.int/tk/en/ [https://perma.cc/B3BH-5XAF].


IV. AN ALTERNATIVE HUMAN RIGHTS BASIS

When the human rights framework for intellectual property is being explored, commentators have suggested that the human right basis for intellectual property protection does not have to originate, or originate solely, from the right to the protection of interests resulting from intellectual productions. Instead, an alternative (or supplemental) human rights basis can be derived from the right to own private property. It is therefore no surprise that the Special Rapporteur's recent report on copyright policy recalled the recurring debate concerning whether this right can provide "[a]n alternative human rights basis for intellectual property protection."197

Moreover, recent human rights developments in Europe support the use of the right to own private property to provide an alternative human rights basis for intellectual property protection. For instance, in Anheuser-Busch, Inc. v. Portugal,198 the Grand Chamber of the European Court of Human Rights extended the protection of "the peaceful enjoyment of . . . possessions" in Article 1 of Protocol No. 1 to the European Convention of Human Rights199 to cover both registered trademarks and trademark applications of a multinational corporation. Intellectual property is also explicitly covered in the right to property provision in Article 17(2) of the Charter of Fundamental Rights of the European Union,200 which entered into force in December 2009201 following the adoption of the Lisbon Treaty on the Functioning of the European Union.202

While I am aware of these developments in Europe and understand why policymakers, commentators, and intellectual property industries are eager to push for an alternative human rights basis for intellectual property protection, I remain unconvinced that the right to own private property would provide a satisfactory basis.203 First, the norms articulated in

\[\text{knowledge-design-sets-policy-for-new-offices/ [https://perma.cc/D58S-P5CW] (reporting} \]

197. Special Rapporteur's Report on Copyright Policy, supra note 11, ¶ 52.
199. Protocol to the Convention for the Protection of Human Rights and Fundamental Freedoms art. 1, Mar. 20, 1952, 213 U.N.T.S. 262 ("Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law.").
the European Convention of Human Rights and the Charter of Fundamental Rights of the European Union are regional by nature; they neither reflect an international consensus nor have universal appeal. Second, for many human rights experts, including CESCR members and the Special Rapporteur, it is problematic that the European Court of Human Rights extended human rights protection beyond individuals to cover corporations, such as Anheuser-Busch, Inc. Third, although the right to own private property focuses mostly on the material interests resulting from intellectual productions, it does not satisfactorily protect the equally important moral interests resulting from these productions.

Indeed, serious complications arise when intellectual property rights are subsumed under the right to own private property. In general, those relying on this right to advocate the protection of intellectual property rights as human rights make their claims based on the following syllogism:

Premise 1: Intellectual property rights are rights to own private property.

...
Premise 2: The rights to own private property are human rights.

Conclusion: Intellectual property rights are therefore human rights.

The problem with this logic is that, if either Premise 1 or Premise 2 fails, the conclusion that intellectual property rights are human rights will not follow. Even worse, as shown below, there is a strong likelihood that not only one premise will fail, but that both premises will fail—not to mention that many continue to question whether intellectual property rights (in the first premise) should exist in the first place.\(^{207}\)

Part IV.A focuses on the first premise. It discusses how intellectual property rights are not always private property rights or subsumed under the right to own property. It also recalls two recent developments in the copyright arena that have deemphasized property ownership and therefore put property rights advocates at odds with intellectual property industries. Part IV.B targets the second premise. It shows why it remains problematic to claim the recognition of the right to own private property as a human right.

A. INTELLECTUAL PROPERTY RIGHTS AS PRIVATE PROPERTY RIGHTS

Policymakers, intellectual property industries and some commentators have equated intellectual property rights with private property rights. As two advocates of strong property rights declared:

[Intellectual property] protection has long been recognized as a basic human right, and the tension between the rights of the creators and the rights of consumers has been successfully resolved by the development and modification of intellectual property protections over the years.

Those who want to weaken [intellectual property] protections are really tapping into a failed and discredited economic theory that the public doesn’t benefit from privately owned goods. However, expropriation of others’ property not only undermines creation and invention, it also undermines economies and societies. It is, ironically, one of the most “anti-human rights” actions governments could take.\(^{208}\)

Similar to these advocates, the entertainment industries have repeatedly condemned the unauthorized use of copyrighted materials as “theft” and illegal file-sharers as “shoplifters.”\(^{209}\) According to Frances Preston,
the former president and CEO of Broadcast Music, Inc., a U.S. performing rights organization: "[I]llegal downloading of music is theft, pure and simple. It robs songwriters, artists and the industry that supports them of their property and their livelihood."210 In an anti-piracy video featuring vivid images of thefts and background music interlaced with police sirens, the Motion Picture Association of America also declared, "You wouldn't steal a car / You wouldn't steal a handbag / You wouldn't steal a television / You wouldn't steal a movie / Downloading / Pirated / Films / Is stealing / Stealing / Is against / The law / Piracy. It's a crime."211

These efforts to equate intellectual property rights with private property rights are both understandable and unsurprising. After all, copyrights, patents, trade secrets and many other forms of intellectual property rights are protected as property rights. Nevertheless, the limited scope and duration of intellectual property rights have led commentators to distinguish these rights from what we traditionally conceive as property rights. For example, Jakob Cornides questioned "whether intellectual property corresponds to the classic concept of property—i.e. a plenary and unlimited right to possess, use, exploit or destroy something, or to grant or deny access to it—or whether it is a sui generis right fulfilling a different purpose."212 Daniel Gervais also noted that scholars have recognized copyright not as an "ordinary" property, but "a 'hybrid property right' or a 'transmuted right.'"213 He went even further to suggest that, "[b]y moving away from property, whether as a human right or as an economic tool, copyright can transcend this debate and find a new, balanced justification based on a human rights framework in which protection and access are seen as complementary objectives."214

Moreover, not all intellectual property rights are protected under a property-based regime. As noted earlier, such a regime does not provide adequate protection to the moral interests resulting from intellectual productions, such as those protected through moral rights or other non-eco-

210. Id. (quoting Frances Preston, former president and CEO of Broadcast Music, Inc.). But see Peter K. Yu, P2P and the Future of Private Copying, 76 U. Colo. L. Rev. 653, 667-68 (2005) (discussing why the recording industry did not make the right analogy when it compared individual file-sharers to shoplifters).


212. Cornides, supra note 203, at 146.

213. Gervais, Intellectual Property and Human Rights, supra note 204, at 22 (footnote omitted); see Christophe Geiger, Re-conceptualizing the Constitutional Dimension of Intellectual Property, in INTELLECTUAL PROPERTY AND HUMAN RIGHTS, supra note 4, at 115, 159 (suggesting that "intellectual property . . . is a property of a special kind, which should not be equated with physical property and which has to be considered as having an even more limited nature than the latter"); Gervais, Human Rights, supra note 51, at 92-94 (discussing copyright as a trade right); Michel Vivant, Authors' Rights, Human Rights, 174 REVUE INTERNATIONALE DU DROIT D'AUTEUR 60, 84 (1997) (noting the potential "transmutation" of copyright).

nomic rights. Some intellectual property rights, such as trademarks, also
do not fit well with a property-based regime; these rights are protected
mostly as entitlements against unfair competition. As the United States
Supreme Court declared a century ago in the seminal case of United Drug
Co. v. Theodore Rectanus Co.:

There is no such thing as property in a trade-mark except as a right
appurtenant to an established business or trade in connection with
which the mark is employed. The law of trade-marks is but a part of
the broader law of unfair competition; the right to a particular mark
grows out of its use, not its mere adoption; its function is simply to
designate the goods as the product of a particular trader and to pro-
tect his good will against the sale of another's product as his; and it is
not the subject of property except in connection with an existing
business.\footnote{United Drug Co. v. Theodore Rectanus Co., 248 U.S. 90, 97 (1918).}

Thus, even if the right to own private property is used to support the
recognition of intellectual property rights as human rights, this right does
not provide support for all intellectual property rights. Those unsup-
ported rights will still need an alternative human rights basis, such as
what is provided by the right to the protection of interests resulting from
intellectual productions. It is worth recalling that the UDHR, the
ICESCR, and other international or regional human rights instruments
neither endorse nor reject the use of property-based models to protect
interests resulting from intellectual productions. Instead, these instru-
ments merely identify two distinct interests that are covered by the right
to the protection of interests resulting from intellectual productions:
moral and material interests.

To complicate matters even further, two recent developments in the
copyright arena have deemphasized property ownership. In a surprising
turn of events, these developments have put property rights advocates at
odds with intellectual property industries. The first development involves
the U.S. Copyright Office's most recent rulemaking proceeding concern-
ing the anti-circumvention provision of the Digital Millennium Copyright
Act of 1998 (DMCA).\footnote{This triennial rulemaking proceeding aims to "determine whether users would be,
or are likely to be, ‘adversely affected by the prohibition ... to make noninfringing uses ...
of a particular class of copyrighted works." Yu, Anticircumvention and Anti-anticircum-
vention, supra note 180, at 33.}

In its submission arguing against the introduction of exceptions in Class 21 for "vehicle software—diagnosis, repair, or
modification," John Deere claimed that those who purchased its tractors
did not have ownership interests in those vehicles; instead, they merely
“receive[d] an implied license for the life of the vehicle to operate the
vehicle, subject to any warranty limitations, disclaimers or other contractual
limitations in the sales contract or documentation.”\footnote{Comments of Deere & Company to the U.S. Copyright Office, Exemption to
Prohibition on Circumvention of Copyright Protection Systems for Access Control Technolo-
John_Deere_Class21_1201_2014.pdf [https://perma.cc/7ZW5-KA6B]; see also Kyle Wiens,
manufacturers also made similar arguments supporting the post-sale control of cars they produced. As General Motors stated in its submission, those who own its cars do not own the computer software in the vehicles even though such software, it admits, is essential to the vehicle's safe operation.218

Although the arguments advanced by John Deere and General Motors seem bizarre, they are somewhat understandable when viewed from the manufacturers' self-interested perspectives. If the purchasers of the vehicles managed to get unfettered property rights, as many car purchasers certainly expected, it would be difficult for these manufacturers to justify the post-sale deployment of technological protection measures to control the use of the vehicles—the subject of the DMCA inquiry. Moreover, the manufacturers do have valid concerns about the potential reputation harms caused by safety issues that may arise when the vehicle's software is inappropriately modified. It is therefore not difficult to understand why car manufacturers are eager to use technological protection measures to prevent vehicle owners from tinkering with the software inside the purchased car.

Nevertheless, for the purpose of this article, the arguments advanced by John Deere and General Motors have greatly undermined the property rights rhetoric that intellectual property industries have repeatedly deployed. If car or tractor purchasers can no longer own vehicles, or the essential software that operate those vehicles, what does it mean when the motion picture industry analogizes movie downloading to car theft?219 Is the industry trying to suggest that downloading movies is as complicated as stealing vehicles that buyers may or may not be able to own? Or has the property right in vehicles dramatically evolved in recent years to the point that these rights are now different from those implicated by movie downloading?


218. See Comments of General Motors LLC to the U.S. Copyright Office, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, at 10 (Mar. 27, 2015), http://copyright.gov/1201/2015/comments-032715/class%202015/General_Motors_Class21_1201_2014.pdf [https://perma.cc/RVU6-VWQ4] ("Proponents incorrectly conflate ownership of a vehicle with ownership of the underlying computer software in a vehicle."). But see Mike Masnick, GM Says That While You May Own Your Car, It Owns the Software in It, Thanks to Copyright, TECHDIRT (Apr. 23, 2015, 4:01 AM), https://www.techdirt.com/articles20150421/23581430744/gm-says-that-while-you-may-own-your-car-it-owns-software-it-thanks-to-copyright.shtml [https://perma.cc/KQM8-LKF5] ("[T]he real conflation here is by GM, John Deere, and others, in thinking that because they hold a copyright to some software, that somehow gives them ownership over what you do with the copy you legally purchased with the car itself.").

219. To make this analogy work, let us temporarily forget that nobody has ever downloaded a car. See Peter K. Yu, Digital Copyright and Confuzzling Rhetoric, 13 VAND. J. ENT. & TECH. L. 881, 892 (2011) ("Given the[] significant differences between tangible and intangible property, it is no surprise that nobody has ever downloaded a car."); see also Loughlan, supra note 211, at 402 ("The use of the language of theft in the discourse of intellectual property ought at least to be constantly noted for what it is, that is, an inaccurate and manipulative distortion of legal and moral reality.").
Moreover, if most people do not acquire property rights in things they purchased and only a minority few can have these rights, why are property rights socially expedient? More importantly to our discussion, why should the right to own private property be recognized as a human right? As British delegate Freda Corbet rightly observed during the drafting of the UDHR, “[T]he declaration of human rights should be universal in nature and only recognize general principles that were valid for all men [and women].” Similarly, British delegate Geoffrey Wilson and Indian delegate Hansa Metha “felt that no special group should be singled out for attention,” thus raising questions concerning whether human rights protection should be recognized in a subclass of individuals—namely, authors and other intellectual laborers.

Another troubling recent development that has eroded the mass appeal of property rights is the increasing push away from property ownership to distribution models that support only content access. For instance, through the use of streaming platforms such as Apple Music, Pandora, Spotify, and YouTube, consumers increasingly do not own digital copies of copyrighted songs despite making continuous payments. Instead, they merely acquire rights to access these songs based on a subscription plan or a pay-per-access model.

While commentators, myself included, have widely questioned the benefits of these platforms to professional songwriters, an oft-overlooked question concerns whether the widespread use of these platforms will ultimately undermine the property rights rhetoric that intellectual property industries have repeatedly deployed. After all, when most people no longer own copies of songs, movies, or game software despite making continuous payments, at some point these people will become confused about the nature and justification of property ownership. Some may even begin to question the legitimacy of property rights.

Worse still, the recent move from property ownership to access-based models has greatly alienated a core group of supporters that have consistently and continuously stood on the side of the intellectual property industries in their quest for ever-strengthening levels of protection and enforcement. To some extent, the position taken by these industries has
suggested their wrongful belief that their intellectual property has given them what Cynthia Ho described as "über rights:"—rights that trump other rights, such as the purchasers' property rights. This concept is highly dangerous from a human rights standpoint because it may eventually create the misimpression that these rights also trump individual human rights.

B. PRIVATE PROPERTY RIGHTS AS HUMAN RIGHTS

The second premise concerns the recognition of the right to own property as a human right. Those who call for using this right to provide an alternative basis for intellectual property protection tend to commit to a specific conception of property rights—that is, the right to own private property. Although the need for and benefit of this right cannot be more obvious in liberal societies, it remains debatable how much of this specific right has been recognized in existing international or regional human rights instruments.

Due to Cold War politics and concerns raised by Socialist countries, neither the International Covenant on Civil and Political Rights nor the ICESCR includes a provision on the right to own private property. There was also no evidence that the delegates agreed to provide special recognition to property rights resulting from intellectual productions. Even today, more than two decades after the end of the Cold War, it remains unclear whether countries will readily agree to a new provision on such a right. Thus, the text of the ICESCR and its drafting history suggest that the right to own private property has not achieved international consensus and that the right protected in Article 15(1)(c) should exist independently of the right to own property.

The only major international human right instrument that contains the right to own property is the UDHR. Although this instrument does not have the same legal effect as the ICESCR, it is important because many commentators consider that the UDHR has achieved the status of customary international law. Specifically, Article 17 of the UDHR states:

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225. See Yu, Reconceptualizing Intellectual Property Interests, supra note 13, at 1085 n.179.

226. Nevertheless, as Graeme Austin suggested to the Author a few years ago when the latter began exploring the development of the human rights framework for intellectual property, the holistic approach adopted in the United Nations Declaration on the Rights of Indigenous Peoples may provide some helpful hints about how the right to property may be addressed in a post-cold-war environment. See UNDRIP, supra note 189.

227. See John P. Humphrey, Human Rights & the United Nations: A Great Adventure 75–76 (1984) (providing evidence that the UDHR “is now part of the customary law of nations”); Claude, supra note 38, at 252 (“[A]fter fifty years, the Universal Declaration . . . has begun to take on the qualities of ‘customary international law.’”); Torremans, supra note 74, at 227 (“[W]here initially Member States were not obliged to implement [the Declaration on the basis that it is merely aspirational or advisory in nature], it has now gradually acquired the status of customary international law and of the single most authori-
(1) Everyone has the right to own property alone as well as in association with others.

(2) No one shall be arbitrarily deprived of his property.228

The specific language of this provision is important. As much as property rights advocates want to argue otherwise, this provision does not unambiguously protect the right to own private property.229 Due to concerns similar to those raised by the Soviet Union and other Eastern bloc countries during the drafting of the ICESCR as well as a strong push by Latin American countries during the drafting of the UDHR, the delegates eventually reached a compromise by omitting the word “private” and then including the phrase “alone as well as in association with others.”230 As Mary Ann Glendon recounted:

The United States strongly supported a right to own private property and to be protected against public taking of private property without due safeguards. The United Kingdom’s Labour government representatives, however, took the position that the article should be omitted, arguing that regulation of property rights was so extensive everywhere in the modern world that it made no sense to speak of a right to ownership. Many Latin Americans took an entirely different tack: they wanted the article to specify a right to enough private property for a decent existence. The Soviets, for their part, objected to the idea that a decent existence should be grounded in private property and insisted that the article should take account of the different economic systems in various countries.231

In the end, Article 17(1) of the UDHR “omitted the word private,” was reduced to “a high level of generality,”232 and “openly acknowledge[d] both the capitalist and communist way of organizing a national economy.”233 This provision now reads: “Everyone has the right to own property alone as well as in association with others.”234 While “the right
228. UDHR, supra note 19, art. 17.
230. UDHR, supra note 19, art. 17(1).
231. Mary Ann Glendon, A World Made New: Eleanor Roosevelt and the Universal Declaration of Human Rights 182 (2001); see also Morsink, supra note 39, at 139–52 (discussing the drafting of the right to property provision); Chapman, Core Obligations, supra note 77, at 314 (“The socialist bloc’s opposition to property rights had already played a major role in the decision of the Covenant’s drafting committee not to include the text of Article 17 of the UDHR recognising the right to tangible forms of property in the Covenant.”).
232. Glendon, supra note 231, at 183.
233. Morsink, supra note 39, at 147.
234. UDHR, supra note 19, art. 17(1).
to own property alone" undoubtedly provides a strong textual basis for unqualified intellectual property rights, the "right to own property... in association with others" could provide a compelling textual basis for the creation of a rich public domain and for unrestricted access to protected materials if the word "others" refers to members of the public.\(^{235}\) Because of these different possible interpretations, Article 17(1) is at best ambiguous about whether the right to own private property provides the basis for the right to the protection of material interests resulting from intellectual productions in Article 27(2).

Compared with the UDHR, the ICCPR, and the ICESCR, the regional instruments have offered more explicit protection to the right to own private property. For example, Article 28 of the American Declaration on the Rights and Duties of Man states that “[e]very person has a right to own such private property as meets the essential needs of decent living and helps to maintain the dignity of the individual and of the home.”\(^{236}\) Nevertheless, as Chilean delegate Hernan Santa Cruz elaborated on this particular provision during the UDHR drafting process, “[o]wnership of anything more than [what is required by this language] might not be considered a basic right.”\(^{237}\) The right to the protection of interests resulting from intellectual productions therefore does not include the protection of interests that are generally not required to meet the essential needs of decent living and to maintain human dignity.

In sum, although virtually all countries now protect the right to own private property, it is questionable that this right has been recognized as a human right in the UDHR, the ICCPR, or the ICESCR. It is even more dubious that international human rights instruments require the protection of a property-based intellectual property regime, as opposed to a regime that recognizes the existence of a robust and rich public domain. While the former is supported by “the right to own property alone” in

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235. This conception of the public domain stands in sharp contrast to the one that views the public domain as "a residual category of material that for various reasons is not protected by a property right." Robert P. Merges, *A New Dynamism in the Public Domain*, 71 U. Chi. L. Rev. 183, 184 n.2 (2004); see also Edward Samuels, *The Public Domain in Copyright Law*, 41 J. Copyright Soc'y U.S.A. 137, 137 (1993) (exploring whether the public domain is "simply whatever is left over after various tests of legal protection have been applied").

236. American Declaration, *supra* note 36, art. 23. Known as the Bogotá Declaration and adopted shortly after the Second World War, this Declaration influenced the drafting of the UDHR. See Claude, *supra* note 38, at 251 ("Attachment to [the American Declaration] language helped to ensure that the Latin American delegates were unified in their voting against strong opposition from Soviet allies."); Yu, *Reconceptualizing Intellectual Property Interests*, *supra* note 13, at 1055 (discussing how the French delegates' incorporation of the language from the American Declaration into the draft Article 27 of the UDHR flattered the delegates from Chile and Uruguay, leading to their immediate support of the proposed language).

237. MORSINK, *supra* note 39, at 145; see also JAMES W. NICKEL, *MAKING SENSE OF HUMAN RIGHTS: PHILOSOPHICAL REFLECTIONS ON THE UNIVERSAL DECLARATION OF HUMAN RIGHTS* 100 (1987) (denying that "there is a good case on moral grounds for a secure claim to property rights in land and other major productive resources" and that "the expropriation of such property, when it does not threaten one's ability to obtain the necessities of life, is a violation of human rights").
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Article 17 of the UDHR, the latter can be supported by "the right to own property . . . in association with others," a right that the provision also expressly recognizes. 238

CONCLUSION

This article highlights the complex interactions among scientific productions, intellectual property, and human rights. Not only does it explain why only some aspects of intellectual property rights (including patent rights) can be recognized as human rights, it also advances a layered approach to intellectual property and human rights. This approach aims to foster a better understanding of the structure of the human rights framework for intellectual property as well as the interactions between and among the framework's different structural layers.

It is my hope that this article will facilitate a more systematic and holistic study of this framework and a more sophisticated understanding of the interplay of intellectual property and human rights. Although this article focuses primarily on scientific productions, the proposed layered approach and its analysis is likely to apply equally well to literary or artistic productions. The approach and analysis will therefore enable us to go beyond the usual debates on the human rights limits to intellectual property rights, intellectual property and human rights, and intellectual property as human rights.

Taking the establishment of the human rights framework for intellectual property as its starting point, this article identifies the framework's different organizational principles and structural layers. It also explores how the different layers interact with each other in the context of scientific productions. In doing so, the article seeks to advance a new approach that will be applicable to all forms of intellectual productions—be they literary, artistic, or scientific.

238. UDHR, supra note 19, art. 17(1). One may wonder whether this language refers to what intellectual property commentators generally discuss in the context of joint authorship. However, the drafting history of the UDHR has shown otherwise.