JORDANA R. GOODMAN*

ABSTRACT

Though the patent prosecution process may be perceived as culturally blind, it is constructed from an almost exclusively majoritarian viewpoint. As a result, inventors leveraging marginalized cultural capital to invent may be held to a different standard than those leveraging majority cultural capital. Structural and procedural aspects of the U.S. patent prosecution system can deny equity to non-white, non-Christian, and non-native-born U.S. inventors who leverage their lived experiences to invent.

In this Article, I highlight the inequities inventors from marginalized backgrounds can face in the patent prosecution process for inventions related to their culture through three novel case studies. From Black hair care industries to religious inventions, those in marginalized communities bear the additional burden of explaining their culture to a fictitious reasonable person constructively ignorant of their culture and traditions. Simultaneously, the United States Patent and Trademark Office ("USPTO") fails to adequately search unwritten sources of prior art. The USPTO search processes can overlook Indigenous and traditional community knowledge when evaluating novelty and obviousness of new inventions.

These examples draw attention to the greater inequitable messaging of the patent system, which necessarily derives from these inequitable structural and procedural dynamics. Because the USPTO fails to develop a shared epistemic reality that draws on marginalized people's experiences, it fails to objectively evaluate patent applications.

Should subsequent data collection confirm that the issues discussed in this Article are indicative of systemic inequalities and not isolated anecdotes, the

^{*} Jordana Goodman is an assistant professor at Illinois Institute of Technology, Chicago-Kent College of Law and an Innovator in Residence at Massachusetts Institute of Technology. You can reach her at jgoodman3@kentlaw.iit.edu. Special thanks to my village of commenters: Jason Rantanen, Sean Tu, Amy Motomura, Samantha Zyontz, Keith Robinson, Gregory Reilly, Bruce Boyden, David Papke, Michael Meurer, Justin Simard, Jennifer Carter-Johnson, David Papke, Amy Landers, Carolyn Shapiro, Sarah Fackrell, David Simon, Nikolas Datzov, Kali Murray, the faculty at Chicago-Kent College of Law, participants of the 2024 Chicagoland Junior Scholars Conference, the Junior Faculty Works-in-Progress Conference at Marquette University Law School, Intellectual Property Junior Scholars Conference, the Junior Intellectual Property Scholars Association Summer Workshop, and the Mosaic Intellectual Property Law Conference for their generous support throughout this project. Thank you to Brianna DeFrank for her invaluable research assistance for this Article.

proposals herein could provide a foundation for addressing the broader structural concerns. For example, the USPTO can consider remedying these concerns through revising their classification system, modifying their intake form to include declarations of cultural reliance, and including a modified version of public comment to include more marginalized voices in the patent prosecution process.

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INTRODUCTION

Law students are familiar with the reasonable person standard, which asks others to construct a fictious individual and place that individual into the defendant's situation.¹ Scholars have long recognized that, by only accounting for limited characteristics like age and education level, the reasonable person standard discounts "female and non-white perspectives"² and can "serve as a vehicle for importing discriminatory views into the heart of the legal standard."³ This Article's novelty rests in exploring how these issues impact an area of law traditionally viewed as a space void of bias: patent law.⁴

This Article sheds light on some of the fundamental invisible inequities baked directly into the patent prosecution system,⁵ especially when subjectively evaluating reasonableness. Although all inventors should receive patent protection for inventions that are new, nonobvious, and disclosed adequately,⁶ the current processes and procedures at the United States Patent and Trademark Office ("USPTO") fail to create an equitable patent system.⁷ Systems structured

³ Mayo Moran, *The Reasonable Person: A Conceptual Biography in Comparative Perspective*, 14 LEWIS & CLARK L. REV. 1233, 1233 (2010).

⁴ See Matthew Sag, Tonja Jacobi & Maxim Sytch, *Ideology and Exceptionalism in Intellectual Property: An Empirical Study*, 97 CALIF. L. REV. 801, 802-04 (2009) (describing the popular belief that intellectual property law is not impacted by "political preferences and attitudes held by judges").

⁵ Patent prosecution refers to the time starting when an entity applies for a patent through the time the patent issues or the application is abandoned.

⁶ Christian Sternitzke, *Patents and Publications as Sources of Novel and Inventive Knowledge*, 79 SCIENTOMETRICS 551, 554-55 (2009).

⁷ Jordana R. Goodman, *Sy-STEM-ic Bias: An Exploration of Gender and Race Representation on University Patents*, 87 BROOK. L. REV. 853, 855 (2022); W. Michael Schuster, R. Evan Davis, Kourtenay Schley & Julie Ravenscraft, *An Empirical Study of Patent Grant Rates as a Function of Race and Gender*, 57 AM. BUS. L.J. 281, 281-83 (2020); see

¹ Vaughan v. Menlove (1837) 132 Eng. Rep. 490, 493; 3 Bing. (N.C.) 468, 471.

² Samantha Stephey, Note, *Reasonable for Whom? A Consideration of the Appropriate Reasonableness Standard Where Battered Woman Syndrome Evidence Is Relevant to a Duress Defense*, 52 U. BALT. L. REV. 507, 509 (2023) (explaining how the reasonable person standard disadvantages women in criminal defense context); *cf.* Sandra F. Sperino, *Retaliation and the Reasonable Person*, 67 FLA. L. REV. 2031, 2052-55 (2015) (explaining how the reasonable person standard harms plaintiffs alleging retaliation for reporting workplace discrimination); Mark D. Alicke & Stephanie H. Weigel, *The Reasonable Person Standard: Psychological and Legal Perspectives*, 17 ANN. REV. L. & Soc. Sci. 123, 129-34 (2021) (comparing the reasonable person standard with proposed subjective standards for judging conduct in civil and criminal cases); Laura A. Heymann, *The Reasonable Person in Trademark Law*, 52 ST. LOUIS U. L.J. 781, 783 (2008) (explaining trademark law incorporates a "monolithic" reasonable person standard with "certain assumed set of characteristics"). *But see* Alan D. Miller & Ronen Perry, *The Reasonable Person*, 87 N.Y.U. L. REV. 323, 367 (2012) (arguing reasonable person standards should contain element of normative moral standard).

around majority cultural assumptions, like the USPTO, can disadvantage inventors whose innovations draw from nonmajority cultural knowledge. Those who may not fully recognize the cultural gaps embedded in patent prosecution may be less equipped to anticipate or navigate the procedural hurdles that result from cultural mismatches. The patent system is not developed in a way to equitably serve inventors leveraging nonmajority cultural capital.⁸

I go beyond the standard story of patent prosecution by using three case studies to highlight prosecutorial inequities. The examples of inventions relating to Black hair care, traditional medicine, and Jewish ritual objects show how patent prosecution proceedings can frustrate, intimidate, and erase people from the inventive population.⁹ I focus on three sources of inequity in patent prosecution: the subject matter (art unit) classification process, the prior art search, and the linguistic standards constructed by the patent examiner.

In my first case study, I highlight how Bruce Boyd and Brigitte Gopou's hair sponge invention transformed the Black haircare industry.¹⁰ However, because the USPTO improperly categorized their corresponding patent application as a cleaning product, Mr. Boyd and Ms. Gopou never received the patent protection their invention deserved.

I also review the case of the Shkedi family, who applied for patent protection on a new kosher ink for Jewish ritual objects.¹¹ When the examiner rejected their initial claims because the examiner considered their reference to "kosher" to be indefinite (despite the applicants' inclusion of a definition in the application), it

also JESSICA C. LAI, PATENT LAW AND WOMEN: TACKLING GENDER BIAS IN KNOWLEDGE GOVERNANCE 116-17 (2022); Colleen V. Chien, Increasing Diversity in Innovation by Tracking Women, Minority, and Startups Innovators that Patent and Supporting Experimentation in Inclusive Innovation 5 (June 30, 2019) (unpublished manuscript), https://ssrn.com/abstract=3413805; Kara W. Swanson, *Race and Selective Legal Memory: Reflections on* Invention of a Slave, 120 COLUM. L. REV. 1077, 1080-82 (2020).

⁸ Cultural capital, such as knowledge, is a resource derived from a culture, which can enable or foster social and educational advancement. *See* Pierre Bourdieu, *The Forms of Capital* (Richard Nice trans.), *in* HANDBOOK OF THEORY AND RESEARCH FOR THE SOCIOLOGY OF EDUCATION 241, 243 (John G. Richardson ed., 1986). In contrast, nonmajority cultural capital refers to cultural capital held by a group that comprises no more than 50% of a given population. *See generally* Jenna R. Sablan & William G. Tierney, *The Changing Nature of Cultural Capital*, *in* 29 HIGHER EDUCATION: HANDBOOK OF THEORY AND RESEARCH 153, 169-71 (Michael B. Paulsen ed., 2014) (discussing nondominant cultural capital).

⁹ The examples herein focus on utility patent applications, but the inequitable themes discussed herein likely apply to design patents as well. *Compare, e.g.*, U.S. Patent No. D1,000,000 (filed Sept. 26, 2023) (showing a narrow design patent for a dispensing comb), *and* U.S. Patent No. D715,513 (filed Oct. 14, 2014) (showing a narrow design patent for a menorah, a candelabra used in Jewish rituals), *with* U.S. Patent No. D618,678 (filed Feb. 3, 2009) (showing a broad design patent for the front of smartphone or other electronic device).

¹⁰ See infra Section II.A.

¹¹ See infra Section II.C.

became clear that the USPTO did not recognize the validity of all speech communities in the United States equitably.

My case studies do more than just highlight how marginalized inventors may fail to get a patent application. Contrasting with the above studies, I show how biopiracy allows bad actors to misappropriate inventions rightfully belonging to marginalized communities. When the University of Mississippi Medical Center received a patent for using turmeric for wound healing, the country of India had to expend additional resources to supplement the USPTO patent search and show that Indian people were practicing this invention for over 100 years before the patent application filing date.¹²

These are not the only contributors to inequity in patent prosecution. From obviousness to enablement standards to doctrine of equivalents determinations, fictitious person standards in patent law are constructed to fill gaps where subjectivity is introduced.¹³ The examples herein highlight a hypothesized larger problem in patent law: culture and knowledge of culture matters in the patent prosecution process, a theme I intend to explore further in future work. Should this be mishandled, ignored, or otherwise improperly addressed, the prosecution process may create discriminatory experiences and perpetuate discriminatory practices.

I do not argue that patents should be distributed more freely or less freely, nor do I argue for or against the merits of patent inventorship. I do not propose that the standards for obviousness, written description, or enablement should be altered for certain groups at the USPTO. Instead, I advocate for the theoretical promise of patenting—that everyone (not just professional technicians) has the right to profit from their inventive work.¹⁴ Patent standards should apply equitably, regardless of an inventor's or invention's reliance on majority or nonmajority cultural capital.¹⁵

¹² See infra Section II.B.

¹³ See KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 417 (2007) (deciding whether an invention is obvious with reference to a fictious person of ordinary skill standard to assess an invention's obviousness); Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 901 (2014) (establishing a standard for reasonable certainty of patent claims that incorporates a fictitious person skilled in relevant art); Acceleration Bay LLC v. Take-Two Interactive Software, Inc., 612 F. Supp. 3d 408, 415 (D. Del. 2020) ("The most familiar framework for evaluating equivalence is whether the accused product performs substantially the same function in substantially the same way to obtain substantially the same result.").

¹⁴ See, e.g., B. Zorina Khan, The Democratization of Invention 2 (2005).

¹⁵ Equity is not a self-defining topic and encompasses many definitions. *See, e.g.*, Kali Murray, *Status, Subject, and Agency in Innovation*, 72 EMORY L.J. ONLINE 36, 48-49 (2023), (discussing access, inclusion, and empowerment manifestations of equity). Deeper theoretical discussions and a precise definition of equity are both outside the scope of this paper. Equity issues highlighted in this Article are not identical in the contexts of Black hair care patents, traditional knowledge biopiracy, and Jewish patents. The ways they are not identical raise interesting theoretical questions about equity—especially with respect to the cultural

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With further investigation into the issues surfaced in this Article, we can explore revising procedures at the USPTO to better meet these standards.¹⁶ First, we can revise the art unit classification process to recognize distinctions related to cultural capital in application sorting procedures. For example, there is no reason to have a rosary bead art unit when there are no art units for similarly specific religious artifacts corresponding to religions that do not use the rosary.¹⁷ Second, by revising the initial patent application paperwork, we can ensure that inventors alert the USPTO to their reliance on marginalized cultural capital. Then, through a team of historians, sociologists, and anthropologists, these applications can receive additional support to ensure the burden of explaining the underlying cultural capital is borne equitably across inventors relying on majority and marginalized culture. Finally, by including a modified version of public comment, patent applications can receive additional input outside the patent office, diluting the currently dominant procedures that inadvertently disregard the importance of developing a shared epistemic reality for all actors participating in the patent process.

The remainder of this Article proceeds as follows. In Part I, I provide a background in patent prosecution, including biases in the classification, prior art searching, and examination processes. In Part II, I highlight three cases where procedural patterns suggest the possibility of bias contributing to inequitable outcomes in patent prosecution. These cases illustrate how the current approach to patent examination and prosecution may reflect cultural preferences that align more closely with Western and majority cultural norms, potentially marginalizing other forms of knowledge during the following processes:¹⁸ when searching for prior art, when evaluating mechanisms of persuasion and communication, and when defining characteristics of an ordinary fictitious

¹⁸ "Culture is a notoriously difficult term to define." Alessandra Bucci, *Global Marketing*, SAPIENZA UNIVERSITÀ DI ROMA 6 (2024), https://management.web.uniroma1.it/sites/default/files/allegati/2024-

knowledge imputed to the Person Having Ordinary Skill In The Art ("PHOSITA") and known by the "average" patent examiner. Additionally, the ways that they *are* parallel also raise interesting concerns about equity, and those parallels are explored herein.

¹⁶ For a full discussion of these proposed reforms, see *infra* Section III.

¹⁷ See USPTO & EUR. PAT. OFF., A44C: PERSONAL ADORNMENTS, E.G. JEWELLERY; COINS 47 (2022), https://www.uspto.gov/web/patents/classification/cpc/pdf/cpc-definition-A44C.pdf [https://perma.cc/78QF-53NL] (displaying a list of Cooperative Patent Classification definitions including A44C 2300—rosaries).

^{10/}Global%20Marketinged3%20-%20CH_3%20rev.pdf [https://perma.cc/GC5R-MAA4]; see also MICHAEL MINKOV, CROSS-CULTURAL ANALYSIS: THE SCIENCE AND ART OF COMPARING THE WORLD'S MODERN SOCIETIES AND THEIR CULTURES 10 (2013) (highlighting that the anthropological concept of culture lacks consensus). However, I most align with anthropologist Franz Boas's definition of culture: "an integrated system of symbols, ideas and values." ADAM KUPER, CULTURE: THE ANTHROPOLOGISTS' ACCOUNT 62 (1999). "[O]ne should never differentiate high from low culture, and one ought not differentially valorize cultures as savage or civilized." KEVIN AVRUCH, CULTURE & CONFLICT RESOLUTION 7 (1998)

person. Part III proposes structural solutions to remedy these imbalances and build a more knowledgeable, worldly, and equitable patent system.

I. INEQUITABLY CONSTRUCTING PATENT PROSECUTION

To receive patent protection for an invention, an applicant sends an application to the USPTO, who then sorts the application by subject matter into art units and sends it to an examiner specializing in that subject matter.¹⁹ The examiner examines the application on behalf of the United States government and grants a patent for an invention if it is novel,²⁰ nonobvious to a Person Having Ordinary Skill In The Art ("PHOSITA"),²¹ and described such that any person skilled in the art can make and use that invention without undue experimentation.²² They will search databases to find prior art—information publicly disclosed before the inventor filed the patent application—and compare this prior art to the patent application disclosure.²³ If the examiner rejects the application (in a document known as an "office action"), the applicant must successfully respond to the rejection and persuade the examiner that either the original application or a revised application meets patentable standards to get a patent.²⁴

Inequities in subjective evaluations can permeate the entire patent prosecution process. From the categorization process and finding prior art to determining whether the application meets patentable standards, the examiner and the USPTO construct a Foucauldian "intentional and normative" version of the facts in a case "designed to induce particular modes of thinking and to legitimize particular exercises in power."²⁵

Legitimizing one set of facts can sometimes result in negating another equally valuable, if not *more* valuable, set of facts. Those in the patent office can induce others to conform to an imposed view of a patent application, and many strive to leverage their social capital to attain the power necessary to impose their views on others.

¹⁹ Patent Process Overview, USPTO, https://www.uspto.gov/patents/basics/patent-process-overview [https://perma.cc/5E7R-CLYX] (last updated Feb. 5, 2025, 11:11 AM).

²⁰ 35 U.S.C. § 102.

²¹ 35 U.S.C. § 103.

²² 35 U.S.C. § 112. This is among a myriad of other requirements, including subject matter eligibility, 35 U.S.C. § 101, not discussed in this Article.

²³ See MPEP § 904 (9th ed. Rev. 1, Jan. 2024) (instructing patent examiners how to search for prior art when evaluating patent applications for novelty and nonobviousness); *id.* § 2103 (describing the general sequence of steps examiners must take to evaluate patent applications).

²⁴ Responding to Office Actions, USPTO, https://www.uspto.gov/patents/maintain/ responding-office-actions [https://perma.cc/2STJ-5GRR] (last updated Apr. 2, 2025, 7:03 AM).

²⁵ Isaak Dore, *Foucault on Power*, 78 UMKC L. REV. 737, 744 (2010) (referencing Foucault's notion of truth as "another technology of power").

Pierre Bourdieu discussed the subject of cultural capital, which can be leveraged to access prestige and power of an economically or socially dominant class in society.²⁶ This Article expands this definition of cultural capital in light of previous literature to include all people's knowledge, skills, and education gained from both academic and nonacademic experiences.²⁷ Dominant cultural capital includes knowledge, skills, and education shared by the dominant (often majority) social group, whereas nondominant cultural capital would be shared by a smaller group of individuals within a dominant culture.²⁸ I use the terms majority and nonmajority or minority cultural capital throughout this Article when possible, rather than dominant and nondominant, to avoid implying that one culture should necessarily be viewed as superior to another.²⁹

In the patent system, the lived experiences of a person, as inherited from their social network, can be leveraged to facilitate economic and social mobility or can be harmful in their pursuit of patent protection. "A patented invention reflects and shapes the culture within which it arises."³⁰

If an inventor describes their invention in a culturally acceptable way and an examiner finds the invention different enough from the prior art the examiner deemed relevant, the inventor will get a patent and the opportunity to increase their economic and social mobility. If the inventor does not describe their invention in a culturally acceptable way that is understandable to the examiner, or if the examiner perceived the invention to be obvious to a PHOSITA in light of the prior art deemed relevant by the examiner, the inventor will not get a patent. These subjective gaps are filled mostly by examiner discretion—and if examiners are raised and entrenched in the majority culture, these gaps will be viewed and filled in accordance with principles dictated by that culture.

Factors to construct PHOSITA are limited and often exclude nonmajority cultural capital factors. When nonmajority cultural capital is excluded,

²⁶ Bourdieu, *supra* note 8, at 243.

²⁷ See David Throsby, *Cultural Capital*, 23 J. CULTURAL ECON. 3, 4-5 (1999) (examining overlaps between cultural and human capital across sociology, economics, and environmental systems theory.

²⁸ Uğur Aslan, 'Mediating Cultural Capital' In-Between Dominant/Non-Dominant Cultural Capital: A Case of M1strli Ahmet, 16 YEDI 23, 24 (2016) (Turk.), https://dergipark.org.tr/en/download/article-file/228097 [https://perma.cc/92CZ-74ST] (discussing the terms "lower" and "higher" in relation to cultural capital). In such light, I have revised the definition for the purposes of this Article. See Prudence L. Carter, "Black" Cultural Capital, Status Positioning, and Schooling Conflicts for Low-Income African American Youth, 50 SOC. PROBS. 136, 136 (2003) (using Bourdieu's framework to distinguish dominant from nondominant cultural capital in educational stratification).

²⁹ See, e.g., Inkeri Rissanen, School-Muslim Parent Collaboration in Finland and Sweden: Exploring the Role of Parental Cultural Capital, 66 SCANDINAVIAN J. EDUC. RSCH. 1, 3 (2022) (proposing minority-specific forms of cultural capital to challenge deficit-based views of nondominant groups).

³⁰ Shubha Ghosh, Identity, Invention, and the Culture of Personalized Medicine Patenting 205 (2012).

uncredited, or disparaged during the prosecution process, the constructed PHOSITA is often unfamiliar with the basic knowledge of billions of people throughout the world. As a result, the patent office creates an imbalanced, majoritarian PHOSITA in the patent prosecution file, and requires others to bear the financial and emotional burden of correcting the record.

"To some extent, every invention stems from a person's collective set of experiences."³¹ Everyone has cultural capital, from the patent attorney to the examiner to the inventor. Cultural capital can influence how individuals proceed through the patent prosecution process—including their starting vocabulary, their understanding of the prior art, and their interactions with other actors during patent prosecution.³² Moreover, cultural capital can work as a type of information, requiring inventors to explain knowledge derived from cultural capital to obtain patent protection on their invention. The patent office and the examiners implement policies and procedures that effectively ensure some cultural capital is valued more than others in patent prosecution.³³ Although it would be impossible to create a completely bias-free system where one could objectively determine the intrinsic value of the cultural capital itself, the examples in this Article highlight the patent system's inherent inequities so that we can strive to reach a more equitable system.

Herein, I focus on three areas of inequality in patent prosecution: classification, prior art searching, and written description and enablement requirements.

A. Inequality in Classification

A patent's scope is defined by its claims. If the claims are directed to a novel and nonobvious invention, the applicant is eligible for a patent.³⁴ If a patent is asserted in court, the claims set the boundaries of an infringement test.³⁵ However, before a patent examiner can evaluate the claims, the patent application is classified into a subject matter art unit.

The USPTO uses a centralized taxonomic process to sort filed patent applications into subject-matter-specific art units.³⁶ Once an application is filed,

³¹ Jordana R. Goodman & Khamal Patterson, *Access to Justice for Black Inventors*, 77 VAND. L. REV. 109, 110 (2024).

³² *Id.* at 119-21.

³³ This is especially true with respect to information derived from cultural capital that is assumed to be known (or unknown) by any relevantly skilled individual, but the full extent of this divide is reserved for a future work.

³⁴ See 35 U.S.C. §§ 102-103. The claimed invention must also be subject matter-eligible. MPEP § 2106 (9th ed. Rev. 1, Jan. 2024).

³⁵ E.g., Tun-Jen Chiang, Fixing Patent Boundaries, 108 MICH. L. REV. 523, 524 (2010).

³⁶ Saurabh Vishnubhakat, *The Field of Invention*, 45 HOFSTRA L. REV. 899, 904 (2017). *See generally* JOAN GOODBODY, OFF. OF INT'L PAT. COOP., PATENT CLASSIFICATION THROUGH THE AGES (2018), https://www.uspto.gov/sites/default/files/documents/Timeline.pdf [https://perma.cc/KDL3-7DHQ].

"classification specialists assign to the application a primary technology class and several search classes. The purpose of the primary class is to identify directly the application's field of invention."³⁷ These primary classes, or "art units," are fixed before a patent application is submitted, much like the Dewey Decimal system's subject matter classifications are fixed before a book is written. Art units are periodically updated to "account for the continually evolving nature of technology and systems for classifying technology."³⁸

The USPTO uses this classification system in three main ways: determining "(a) the proper classification of an application for examination, (b) a proper field of search, or (c) the required or 'mandatory' classification(s) for an issuing patent grant."³⁹ In patent prosecution, this classification helps to define "the particular 'art' in which the PHOSITA is deemed to have ordinary skill."⁴⁰

This is, of course, subjective. Two people from different backgrounds—with different knowledge bases—may classify the proposed invention differently, depending on how they perceive the invention. The inventor, however, gets little to no input in the classification process. The decision is firmly in the hands of the USPTO. It creates classifications, grouping similar inventions together. It also has the power to sort proposed inventions into classifications to be examined. The fate of a patent application can rest on which art unit it is sorted into⁴¹ and, as shown below, biases in the sorting process can impact those who are inventing outside of the familiarity of the powerful sorters.

⁴¹ See Austin Underhill, *These Are the 20 Hardest and Easiest Art Units*, IPWATCHDOG (May 21, 2015, 9:30 AM), https://ipwatchdog.com/2015/05/21/hardest-easiest-art-units/id=57864/ [https://perma.cc/35TR-N8HV] (noting stark contrasts in patent grant rates across different art units).

³⁷ Vishnubhakat, *supra* note 36, at 904 (footnote omitted).

³⁸ *Id.* at 904-05.

³⁹ USPTO, HANDBOOK OF CLASSIFICATION 9 (2005), https://www.uspto.gov/sites/default/ files/web/offices/opc/documents/handbook.pdf [https://perma.cc/U4V8-MYBN].

⁴⁰ Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1188 (2002). Of note to litigators: The PHOSITA construction in litigation can, and often is, more tailored to the invention within the four corners of the patent document. Laura Pedraza-Fariña & Ryan Whalen, The Ghost in the Patent System: An Empirical Study of Patent Law's Elusive "Skilled Artisan," 108 IOWA L. REV. 247, 249-52 (2022) (noting that PHOSITA construction may not play an outcome-determinative role in patent dispute resolution, according to recent studies). Even if PHOSITA construction is not outcomedeterminative, the law is written such that it should be outcome-determinative in litigation and during prosecution. See 35 U.S.C. § 103. It should be noted that, in litigation, almost no attorney or judge uses the art unit classification when defining the PHOSITA-and the field of invention is also rarely discussed. See Vishnubhakat, supra note 36, at 908-09. In patent prosecution, because of the structured nature of the art unit structure, the PHOSITA is more rigidly characterized by the predefined art units. USPTO, OVERVIEW OF THE U.S. PATENT CLASSIFICATION SYSTEM (USPC), at I-3 (2012), https://www.uspto.gov/sites/default/ files/patents/resources/classification/overview.pdf [https://perma.cc/H2DD-DNCY]. The consequences of the PHOSITA construction as described in this Article are primarily directed to the construction during patent prosecution, not litigation.

B. Prior Art Searching: Biased Construction

Once a patent application is classified, it is sent to an examiner with relevant expertise to begin the examination process.⁴² This art unit is the starting point for the examiner to begin searching for prior art⁴³—information publicly available before the patent application filing date that can be used to evaluate whether the claimed invention is novel or obvious to a PHOSITA.⁴⁴ A PHOSITA is "familiar with the full range of prior art in that field,"⁴⁵ regardless of language or national origin. Prior art is not limited to printed information, but rather any information that is disclosed or documented without indication that such information is meant to remain confidential.⁴⁶

Though the sources of the PHOSITA's knowledge are not limited, the subject matter of the references is restricted by the classification and subject matter of the patent application. For an invention to be declared obvious in view of prior art, the reference must be either in the same field of endeavor of the invention or reasonably pertinent to the problem being solved.⁴⁷ Otherwise, the art cannot be considered in an obviousness evaluation.

The examiner constructs this world of familiarity—this knowledge base—by searching databases and websites to find prior art that they deem to be in the same field of endeavor or reasonably pertinent to the problem being solved in accordance with their view. After finding all relevant art (according to the examiner), the examiner will craft an office action explaining why they believe the patent application is allowable or not allowable based on the prior art.

Though the examiner will rarely list their search methodologies, clues as to their processes can be found in the patent application file. For example, the file

⁴⁶ See Overview of Public Disclosure, Nw. UNIV.: INNOVATION + NEW VENTURES, https://www.invo.northwestern.edu/invention-management/understanding-disclosures/what/overview-public-disclosure.html [https://perma.cc/E54S-T224] (last visited Apr. 13, 2025).

⁴⁷ In re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004) ("Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem"); see MPEP § 2141 (9th ed. Rev. 1, Jan. 2024); see also Jihwang Yeo, Federal Circuit Clarifies the "Reasonably Pertinent" Analogous Art Standard, NAT'L L. REV. (Nov. 30, 2020), https://www.natlawreview.com/article/federal-circuit-clarifies-reasonably-pertintent-analogous-art-standard [https://perma.cc/H5L2-WEL2].

⁴² See Vishnubhakat, supra note 36, at 904; How Classification Works at the USPTO: Targeted Drafting to Influence Prosecution Outcomes, LEXISNEXIS (June 16, 2020), https://www.lexisnexisip.com/resources/how-classification-works-at-the-uspto/ [https://perma.cc/6QQV-G23D].

⁴³ Vishnubhakat, *supra* note 36, at 904.

⁴⁴ USPTO, PATENT SEARCHING AND SEARCH RESOURCES -- AN INTRODUCTION 5 (2021), https://www.uspto.gov/sites/default/files/documents/Basics-of-Prior-Art-Searching.pdf [https://perma.cc/44UW-H5EC].

⁴⁵ Vishnubhakat, *supra* note 36, at 932.

will list the references cited against the application, as well as the art unit classification codes used to classify the invention.⁴⁸ This will provide context for the examiner's construction of the PHOSITA and their idea of relevant prior art subject matter. The applicant can disagree in a response and protest what is relevant prior art subject matter.⁴⁹ However, third parties who create relevant art not found or acknowledged by the examiner have little power to make themselves known before an application is granted.⁵⁰ Even then, the process to correct the record (as shown below) is a costly and time-consuming burden to bear.

C. Written Description and Enablement: Different Worldviews

35 U.S.C. § 112(a) requires that a patent specification has a written description of the invention (the written description requirement) and of the manner and process of making and using the invention (the enablement requirement).⁵¹ It states:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same \dots .⁵²

This clarity is not for every person in the country, but rather for a person skilled in the art to which the invention pertains. As discussed in *Nautilus, Inc. v. Biosig Instruments, Inc.*,⁵³ there is a "delicate balance" between "the inherent limitations of language"⁵⁴ and the public notice function of patents, but patents must "inform, with reasonable certainty, those skilled in the art about the invention."⁵⁵ This inquiry on definiteness looks to "the understanding of a skilled artisan at the time of the patent application" and not the court's later ability to "ascribe *some* meaning to a patent's claims."⁵⁶ Although the analysis below focuses on the written description and enablement standards, this

⁴⁸ MPEP § 707 (describing examiners' office actions).

⁴⁹ See id. § 2266.

⁵⁰ As discussed *infra* in Section III.D, there is a third-party submission option in patent prosecution, but unlike trademarks, patents are rarely made widely known for public comment.

⁵¹ MPEP § 2161.

^{52 35} U.S.C. § 112(a).

⁵³ 572 U.S. 898 (2014).

⁵⁴ *Id.* at 909 (quoting Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 731 (2002)).

⁵⁵ *Id.* at 901. 35 U.S.C. § 112(b) sets forth a definiteness requirement, requiring that "claims particularly point[] out and distinctly claim[] the subject matter which the inventor . . . regards as the invention." 35 U.S.C. § 112(b); *see* MPEP § 2173.

⁵⁶ See Nautilus, 572 U.S. at 911.

requirement to construct the language of a patent around the understanding of the hypothetical skilled artisan pertains to all requirements under § 112.

The written description and enablement requirements are distinct requirements, even if they fall under the same statutory section.⁵⁷ An invention can be described without an enabling disclosure, in the case where there is no explanation a skilled person can follow to make the invention, but there is a full description of the final product. A specification can also have an enabling disclosure without specifics necessary to support its written description. For example, a specification can teach a skilled person how to combine certain ingredients to make a product without undue experimentation but lack description of the final product because the product does not yet exist.⁵⁸

Although these are distinct, they both rely on subjectivity, stemming from the original patent application classification as well as the construction of the fictitious evaluator—the person skilled in the art.

The patentability standards rely, in part, on construction of a legal fiction. The PHOSITA is built to judge whether the claimed invention is nonobvious.⁵⁹ Similarly, a constructed ordinary user of the technology—referred to in § 112 as "any person skilled in the art" (also herein referred to as PHOSITA)—is a fictitious standard used to judge whether the invention is described sufficiently, such that the applicant is entitled to a patent.⁶⁰

Much like the "reasonable person" standard in criminal and tort law,⁶¹ people define these standards using a set of guidelines tailored to the situation at hand. The reasonable person standard is meant to serve as a benchmark for an egalitarian society, setting expectations for both the defendant and greater

⁶¹ See Alina Ng Boyte, *The Conceits of Our Legal Imagination: Legal Fictions and the Concept of Deemed Authorship*, 17 N.Y.U. J. LEGIS. & PUB. POL'Y 707, 717 (2014) ("In addition to promoting fairness and efficiency, legal fictions also set normative standards against which social activity can be evaluated. For instance, the hypothetical 'reasonable man' in tort and criminal law is used to establish standards for reasonable conduct that individuals are expected to meet.").

⁵⁷ Ariad Pharms., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

⁵⁸ *Id.* at 1352 ("[R]equiring a written description of the invention plays a vital role in curtailing claims that do not require undue experimentation to make and use, and thus satisfy enablement, but that have not been invented, and thus cannot be described.").

⁵⁹ Pedraza-Fariña & Whalen, *supra* note 40, at 249.

⁶⁰ Burk & Lemley, *supra* note 40, at 1190; *see also* 3A DONALD S. CHISUM, CHISUM ON PATENTS: A TREATISE ON THE LAW OF PATENTABILITY, VALIDITY AND INFRINGEMENT (2022). The knowledge and construction distinctions between the PHOSITA in § 103 and "any person skilled in the art" in § 112 are reserved for future work. *See generally* Timothy R. Holbrook & Mark D. Janis, Response, *How the Supreme Court Ghosted the PHOSITA:* Amgen *and Legal Constructs in Patent Law*, 109 IOWA L. REV. ONLINE 83 (2024). However, the PHOSITA is still a standard used to judge enablement. *See, e.g.*, Knowles Elecs. LLC v. Cirrus Logic, Inc., 883 F.3d 1358, 1365 (Fed. Cir. 2018).

society.⁶² A person is expected to act within the norms of a reasonable person, and society can expect that everyone will act as a reasonable person in a given scenario. If not, the law creates a remedy to right the wrong, whether in criminal or civil law.⁶³

The norms of a reasonable person in patent law are particularly dependent on the subject matter of the invention. The patent examiner can determine the PHOSITA's awareness of innovations and other technology relevant to the invention's subject matter, as well as the PHOSITA's educational background.⁶⁴ Under this framing, the examiner can also use the language requirements of their perceived PHOSITA's experience to govern whether the PHOSITA can learn how to make and use the invention in the patent application. The description of patent prosecution as a neutral, objective process is just as much of a legal fiction as the PHOSITA itself.⁶⁵

As with the reasonable person construction in tort and criminal law,⁶⁶ many refer to the examination process and the construction of PHOSITA as "objective."⁶⁷ Evaluators—namely jurors (in the case of tort and criminal law) and examiners (in the case of patent law)—are told not to "substitute their own subjective standard of behavior for that of the *objective, reasonable person*" when assessing whether a person acted as a reasonable person, and any solicitation to do so may constitute misconduct.⁶⁸

The PHOSITA has objective and subjective components. The PHOSITA fabrication differs based on education level, type of problem encountered in the art, prior art solutions to those problems, rapidity with which innovations in the art are generated, sophistication of the technology, and education level of other workers in the field.⁶⁹ These standards are ultimately crafted by biased

⁶⁴ Mintz v. Dietz & Watson, Inc., 679 F.3d 1372, 1376 (Fed. Cir. 2012) ("Factors that may be considered in determining level of skill include: type of problems encountered in art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." (quoting Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962 (Fed. Cir. 1986))).

⁶⁵ See Dan L. Burk, *Do Patents Have Gender*?, 19 AM. U. J. GENDER SOC. POL'Y & L. 881, 895 (2011) ("The reasonably prudent person still reflects the isolated, self-regarding, rights-based regime of the reasonably prudent man.").

⁶⁶ See, e.g., Oquendo v. State, 357 So. 3d 214, 217 (Fla. Dist. Ct. App. 2023) (relying on an "objective standard of reasonableness").

⁶² See Scott Astrada & Marvin L. Astrada, *The Enduring Problem of the Race-Blind Reasonable Person*, AM. CONST. SOC'Y (May 11, 2020), https://www.acslaw.org/expertforum/the-enduring-problem-of-the-race-blind-reasonable-person/ [https://perma.cc/9Z5Y-FJAD].

⁶³ See OLIVER WENDELL HOLMES, THE COMMON LAW 108 (1909) (explaining that the law holds individuals to an objective standard to ensure uniform expectations and liability for harmful conduct).

⁶⁷ See Pedraza-Fariña & Whalen, supra note 40, at 254.

⁶⁸ See People v. Mendoza, 171 P.3d 2, 14 (Cal. 2007).

⁶⁹ Env't Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 696 (Fed. Cir. 1983).

individuals—the patent examiner, juries, judges, and patent practitioners.⁷⁰ They determine if the specification has the "clear, concise, and exact" terms required to merit a patent grant.⁷¹

The PHOSITA construction theoretically serves at least two notice purposes. One is for the inventor, in that the inventor must give enough information so that a skilled person in their field can make and use the invention without undue experimentation.⁷² The inventor must also convince the examiner that a PHOSITA—not the public—would view the invention as nonobvious.⁷³

The second notice purpose is for the public. The public expects to continue using inventions and obvious variations that have been passed down over generations, because (1) a PHOSITA would be aware of these inventions, and (2) a person cannot patent something that is obvious to a PHOSITA based on publicly accessible information and resources.⁷⁴ Although the USPTO does not have a public notice and comment period for patents (unlike trademarks),⁷⁵ the public can view patent applications after they have been published and should feel secure in using inventions that have been publicly known for many years.⁷⁶

The USPTO and examiner hold the ultimate power in constructing the true PHOSITA in patent prosecution and determining if the fictional construction would understand the language and contents of the application as presented by the inventors.

II. CASE STUDIES: TALES OF INEQUITABLE PATENT PROSECUTION

The patent prosecution process includes many subjective decisions, including deciding how to categorize a patent application, whether a PHOSITA would find

⁷¹ 35 U.S.C. § 112(a); *see also* Jonathan J. Darrow, *The Neglected Dimension of Patent Law's PHOSITA Standard*, 23 HARV. J.L. & TECH. 227, 236 (2009) (describing the PHOSITA standard as a legal fiction for the court to evaluate patentability).

⁷⁰ For an in-depth discussion about how these biases can impact inventors, especially those whose inventions derive from minority or nondominant cultural capital, see Goodman & Patterson, *supra* note 31, at 110-15. Though these individuals can affect prosecution and litigation, the entities listed above do not explicitly rely on the art unit to describe PHOSITA characteristics. *See* Vishnubhakat, *supra* note 36, at 933 ("The underlying question of how to define the field of invention remained unanswered").

⁷² See 35 U.S.C. § 112.

⁷³ See 35 U.S.C. § 103.

⁷⁴ See Barry Irwin & Ifti Zaim, *Isn't It Obvious? The Constitutional Origin of Patent Law's Non-Obviousness Requirement*, JD SUPRA (May 8, 2024), https://www.jdsupra.com/ legalnews/isn-t-it-obvious-the-constitutional-7639182/ [https://perma.cc/SEK8-4MTR].

⁷⁵ See Approval for Publication, USPTO, https://www.uspto.gov/trademarks/ basics/approval-publication [https://perma.cc/W643-LX2W] (last updated Nov. 30, 2023, 4:30 PM) ("Publication [of a trademark] begins a 30-day period during which any member of the public who thinks they'll be harmed by the registration of your trademark may oppose it.").

⁷⁶ Specifically, the lifetime of a patent—now twenty years from the time of patent application filing. *See* 35 U.S.C. § 154.

the invention obvious, whether any person skilled in the art would find the language of the specification clear and concise, and whether those skilled in the art are informed "with reasonable certainty" about the invention's scope.⁷⁷ It is very unlikely that these gaps are filled equitably by examiners and attorneys, especially in spaces where the subjectivity gap must be filled by cultural knowledge. Failed communications between inventors, attorneys, and examiners—especially in areas of cultural communication—"can result in a hermeneutical injustice, where the knower (inventor) attempts to share their knowledge, but due to prejudicial flaws in a system, their communication does not get the knower to a place of justice."⁷⁸

This Part highlights some examples of these hermeneutical injustices. It explores examples of cultural blindness at the USPTO, specifically in the art unit classification process, the prior art search and application process, and the written description and enablement evaluation. These are presented as concrete stories illustrating some examples of what I perceive to be systemic injustices in the USPTO but are in no way meant to serve as quantification for how pervasive these problems are. Regardless of whether it is even possible to quantify the inequities some inventors face at the USPTO,⁷⁹ this Article serves as a means of elevating stories of inequity and potential solutions to reduce and remedy inequitable actions when they do arise.

Many entities are responsible for inequitable patent examination processes, including attorneys, examiners, and the inventors themselves. These stories highlight systemic injustices embedded in the patent system but are in no way

⁷⁷ Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 910 (2014).

⁷⁸ Goodman & Patterson, *supra* note 31, at 114 (citing MIRANDA FRICKER, EPISTEMIC INJUSTICE: POWER & THE ETHICS OF KNOWING 147, 152 (2007)) (discussing "hermeneutical injustice, wherein someone has a significant area of their social experience obscured from understanding owing to prejudicial flaws in shared resources for social interpretation").

⁷⁹ See Letter from Elizabeth Warren, U.S. Sen. & Sheila Jackson Lee, Member of Cong., to Kathi Vidal, Under Sec'y of Com. for Intell. Prop. & Dir. of USPTO 2 (Feb. 13, 2023), https://www.warren.senate.gov/imo/media/doc/2023.02.13%20Letter%20to%20USPTO%2 0on%20diversity%20gaps%20in%20patent%20success.pdf [https://perma.cc/HLE2-84E5] (explaining that the USPTO does not collect or track race, gender, ethnicity, or nationality demographic information from its patent applications, and "[f]urther evaluating the extent of the issue" regarding lack of inventor diversity "requires data"). Although these case studies discuss race, ethnicity, and religion as sources of inequities in the patent system, I expect that gender is also a source of inequity. See, e.g., Spanx's Founder Couldn't Afford a Patent Attorney. So She Figured Out How to Protect Her IP Herself., PITCHMARK (Jan. 27, 2022), https://www.mynewsdesk.com/sg/pitchmark/news/spanxs-founder-couldnt-afford-a-patentattorney-so-she-figured-out-to-protect-her-ip-herself-441341 [https://perma.cc/ZM3P-Y9RB] (noting inventor of Spanx had to use a male patent attorney because "there were no female patent attorneys at all in Georgia" and "the process of convincing [the male attorneys] that Spanx was a great business idea turned out to be as tough as she had expected"). See generally Jordana R. Goodman, The Social Dynamics of Research and the Impact on Patenting in the United States, in A RESEARCH AGENDA FOR INTELLECTUAL PROPERTY LAW AND GENDER 125 (Jessica C. Lai & Kathy Bowrey eds., 2024).

meant to absolve responsibility of the other individuals who contribute to unjust patent examination processes. If we wait to fully solve the problems of biased attorneys, uneducated inventors, or individually flawed examiners before we attempt to correct potential systemic issues, I fear we will be waiting forever.

I recognize that those deriving their experiences mainly from majority culture can overcome their biases and judge minority-culture-based applications fairly (when it is within their power to do so). I also recognize that cultural identity includes many components-including cultural knowledge, category label, and social connections.⁸⁰ As such, individuals can have in-depth cultural knowledge of a culture that they do not identify with, and others can identify with a particular culture but lack in-depth cultural knowledge. Some who have a majority culture identity may have in-depth minority cultural knowledge, and others who have a minority culture identity may lack in-depth cultural knowledge about their self-identified minority culture. Discussions regarding overcoming bias, including inclusion of nonmajority knowledge into patent analyses, and correlations between identity and knowledge are in no way meant to obviate the distinction between identity and knowledge.⁸¹ To overcome biases in the patent system, individuals must recognize that gaps in their individual cultural knowledge are not necessarily the same as gaps in others' cultural knowledge. Moreover, the distinct gaps are often derived from access to that knowledge,⁸² which can overlap significantly with one's lived experiences, including the cultural identity of those in a person's community.

This Article does not suggest that individuals stop making strides toward better understanding others' culture and how it can impact their patent process. However, as shown below, it is likely much more difficult to bridge cultural gaps in an equitable way for those who do not understand nonmajority culture or how to access different views on culture. Furthermore, especially for areas like the classification process, the ability to equitably assess and factor in culture is outside an individual's power and within the realm of systemic inequities permeating the patent process.

A. The Hair Sponge and Inequitable Subject Matter Misclassification

The art unit classification sorting process—the process of sorting patent applications into subject matter areas and assigning the applications to patent

⁸⁰ See Ching Wan & Pony Yuen-Ga Chew, *Cultural Knowledge, Category Label, and Social Connections: Components of Cultural Identity in the Global, Multicultural Context*, 16 ASIAN J. SOC. PSYCH. 247, 247 (2013) (analyzing a tripartite model of cultural identity as a pathway for associating self with culture in a global context).

⁸¹ Id. at 251.

⁸² See id. at 248 ("The cultural knowledge component of cultural identity involves an individual's psychological connection with a culture through the individual's personal endorsement of the culture's shared knowledge.").

examiners specializing in that subject matter⁸³—can set the tone for an inequitable patent examination, especially for inventors leveraging their nonmajority cultural capital for their claimed invention. After receiving a submitted patent application, the USPTO sends the application to the Office of Patent Classification to be sorted into art units.⁸⁴ These preexisting art units serve as a "starting point when searching for prior art," and the search classes show where the examiner should begin "to locate additional potentially relevant prior art."⁸⁵ This starting point can be effective in certain fields, but it can also damage the patent prosecution proceedings. For inventions reliant on nonmajority cultural capital, the art units preconstructed by those having majority cultural capital can initiate an inequitable patent prosecution process.⁸⁶

The patent prosecution history of Bruce Boyd and Brigitte Gopou highlights the classification issue firsthand. Their invention, directed to a hair styling tool for twists, starting dreadlocks, and other styles for very curly hair, was misclassified and their patent prosecution process subsequently suffered.⁸⁷

Mr. Boyd and Ms. Gopou's invention, referred to as a hair sponge, can quickly style hair, reducing the time to create a finger coiling-like style from hours to minutes.⁸⁸ Before debuting the sponge at the Bronner Bros. Hair Show,⁸⁹ a hair show specifically for styling Black hair, the inventors filed a U.S. patent application to protect both the hair sponge product and the method of using the product on curly hair.⁹⁰ The patent application claimed: "A handheld device for sculpting hair" and a method of sculpting hair.⁹¹

Lacking an art unit for Black hair care inventions, the USPTO sorted their patent application for a hair styling tool into two art units: hair deformation (U.S. Patent Office Classification 132/210) and cleaning sponge (15/244.1).⁹² The

⁸⁷ See Goodman & Patterson, *supra* note 31, at 141-43 (explaining how Boyd and Gopou's hair product was classified as sanitary equipment and rejected as being preempted by certain cleaning sponges).

⁸⁸ Bianca Lambert, *This Curl Sponge Twists Short, Natural Hair in Minutes*, BYRDIE, https://www.byrdie.com/curl-sponge-short-hair-tutorial-4692993 [https://perma.cc/6VZN-E9KZ] (last updated Mar. 25, 2022, 1:58 PM).

⁸⁹ BRONNER BROS., https://www.bronnerbros.com/ [https://perma.cc/TL7B-HYHU] (last visited Apr. 13, 2025); *see* Plaintiff's First Amended Complaint at 13 ¶ 34, Nu-You Techs., LLC v. Eltoweissy, No. 15-cv-3434 (N.D. Tex. Jan. 25, 2016) (describing Mr. Boyd and Ms. Gopou's company attending Bronner Bros. International Hair Show).

⁸³ See Patent Classification, USPTO, https://www.uspto.gov/patents/search/class ification-standards-and-development [https://perma.cc/9LNR-NQ3S] (last updated Mar. 25, 2025, 2:31 PM).

⁸⁴ See Vishnubhakat, supra note 36, at 903-04.

⁸⁵ Id.

⁸⁶ See Goodman & Patterson, supra note 31, at 120.

⁹⁰ Goodman & Patterson, *supra* note 31, at 136-37.

⁹¹ U.S. Patent Application Serial No. 10/925,126, at 2, 4 (filed Aug. 24, 2004).

⁹² See U.S. Patent No. 7,198,050 (issued Apr. 3, 2007). Some of these art units may seem

application is directed to a tool for deforming hair, not a cleaning tool.⁹³ Despite never mentioning the word "clean" or "sponge," the application was sorted into a cleaning art unit, meaning a PHOSITA is a person with ordinary skill in the field of cleaning sponges.⁹⁴ Not only could this be considered a confusing and potentially offensive sorting assignment for a Black hair product, but it created additional barriers for the inventors during the examination process.

In the first office action, the examiner rejected the application over cleaning product patents: U.S. Patent No. 1,943,365 ("Borden") and U.S. Patent No. 2,588,773 ("Smith").⁹⁵ Borden and Smith describe soap sponges with patents issued in 1934 and 1952, respectively.⁹⁶ Despite Mr. Boyd and Ms. Gopou's claims explicitly mentioning hair and the invention's functionality to cause sections of "hair to be formed at substantially regular intervals," neither of these references mentions hair.⁹⁷ The examiner can certainly use extrinsic evidence to fill gaps in references if a "reference is silent about the asserted inherent characteristic," it is "clear that the missing descriptive matter is necessarily present in the thing described in the reference, and . . . it would be so recognized by persons of ordinary skill."⁹⁸ However, the examiner makes no such explicit argument, failing to acknowledge that the references do not discuss hair deformation and failing to provide insight into his thoughts in applying these references and extrinsic information to bridge the "gap in the reference."⁹⁹

Later, the examiner rejected claims over U.S. Patent No. 6,325,565 ("Giradot") (a deodorant applicator) and U.S. Patent No. 5,003,659 ("Paepke") (a kitchen cleaner).¹⁰⁰ By using soap sponge, kitchen cleaners, and deodorant

⁹⁵ See Non-Final Office Action dated Feb. 3, 2004, U.S. Pat. App. No. 10/925,126, at 2.

extremely specific. With over 150,000 subclassifications to choose from, the USPTO does offer many hyper-specific subject matter categories for patent applications. *See* USPTO, *supra* note 40, at I-3.

⁹³ See About Us, NUDRED, https://shopnudred.com/about-us/ [https://perma.cc/PA5N-5WSS] (last visited Apr. 13, 2025).

⁹⁴ The potentially racist implications of sorting a product meant for styling a Black person's hair into a cleaning art unit, despite the lack of any indication within the application other than a potentially misconstrued depiction of a Black person in the drawings, is simultaneously troubling and outside the scope of this paper. I am using the term "sponge" to describe the invention because I am centering the inventors' description of their invention (as a sponge), rather than the attorney's choice of language. For more explanation as to the differences in linguistic choice between the inventors and the attorney representing the inventors during patent prosecution, see Goodman & Patterson, *supra* note 31.

⁹⁶ U.S. Patent No. 1,943,365 (issued Jan. 16, 1934); U.S. Patent No. 2,588,773 (issued Mar. 11, 1952).

⁹⁷ See Non-Final Office Action dated Feb. 3, 2004, supra note 95, at 4-5.

⁹⁸ Cont'l Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1268 (Fed. Cir. 1991).

⁹⁹ See id.; Non-Final Office Action dated Feb. 3, 2004, supra note 95, at 3.

¹⁰⁰ Non-Final Office Action dated Aug. 24, 2004, U.S. Pat. App. No. 10/925,126, at 2-4.

applicators as prior art, the examiner asserted that a PHOSITA would be familiar with soap sponges when developing the hair care product.¹⁰¹

Over the course of patent prosecution, the examiner failed to cite a single patent application relevant to the hair deformation art unit.¹⁰² However, after citing several prior art references relevant to the cleaning sponge art unit, the applicants withdrew their claims directed to their hair sponge apparatus.¹⁰³ On April 3, 2007, Mr. Boyd's and Ms. Gopou's patent issued only with claims directed to the method of using the hair sponge.¹⁰⁴

Because the applicants have a patent with only method claims, they must prove that a company *used* a knock-off hair sponge to assert direct infringement, not just that a company manufactured a knock-off hair sponge.¹⁰⁵ In other words, a method patent is a more limited patent with more limited litigation options. If the applicants had received a patent on their product, they could have asserted their patent on any company that manufactured a hair sponge with spaced apart bores in the bottom surface.¹⁰⁶ Though the applicants "have been very successful in litigation . . . there is no way to determine how much money could have been earned" if the applicants had patent protection over their novel product.¹⁰⁷

The attorney who was prosecuting this case bears significant responsibility for its outcome. "Every interaction with another human can be tainted by bias, and the patent process is no exception."¹⁰⁸ There is evidence that the attorney failed to put his clients' inventive language in the patent application, and instead chose to substitute his own description of the invention.¹⁰⁹ The attorney failed to amend the claims to include structural limitations, differentiating the product at hand from the cited prior art.¹¹⁰ The attorney did not argue that the cited art was irrelevant.¹¹¹

However, more than one party can bear responsibility for the unfortunate outcome in this case. Not only must we train attorneys to be more culturally aware and increase their cultural knowledge base,¹¹² but we also must understand that the patent system is constructed in a way that can disparately and negatively impact those inventing from a nonmajority culture knowledge base—likely disproportionately minority inventors and those without resources

¹⁰¹ See id.; Non-Final Office Action dated Feb. 3, 2004, supra note 95, at 2-5.

¹⁰² See generally Non-Final Office Action dated Feb. 3, 2004, *supra* note 95; Non-Final Office Action dated Aug. 24, 2004, *supra* note 100.

¹⁰³ See U.S. Patent No. 7,198,050.

¹⁰⁴ See id.; Remarks to Amendment dated Aug. 7, 2006, U.S. Pat. App. No. 10/925,126.

¹⁰⁵ See Goodman & Patterson, supra note 31, at 149.

¹⁰⁶ See id. at 148.

¹⁰⁷ *Id.* at 149.

¹⁰⁸ *Id.* at 119.

¹⁰⁹ *Id.* at 140.

¹¹⁰ *Id.* at 142-43.

¹¹¹ *Id.* at 143.

¹¹² *Id.* at 149.

to overcome cultural knowledge gaps at the patent office. If we wait for attorney training to fix every problem in biased patent prosecution, I fear we will be waiting too long to see equity in my lifetime. The fundamental structure and content of the examination process itself must also be remedied.

This case may be considered an example of cultural blindness at the USPTO, specifically in the realm of art unit classification. Classification "is at the basis of pattern recognition, learning, and sense-making."¹¹³ It can shape scientific thought,¹¹⁴ future research,¹¹⁵ and even appropriate level of government-sanctioned punishment.¹¹⁶ Classification itself is subjective—grouping what one person or one group perceives to be similar and excluding what is different.

The art unit classification system at the USPTO begins with a preset list of categories for the filed patent application. This rigidity constricts the prosecution process—and especially the examiner—to proceed with subject matter fitting the bounds of the chosen classification, rather than the bounds of the application itself. The categories create a lens through which the examiner can find prior art and make determinations about the novelty and obviousness of the invention.

The classification system is built to be "exhaustive of all patentable subject matter under patent laws."¹¹⁷ The scheme is built so that, ideally, every new invention has a classification tailored to its subject matter. This classification system is built off a system created in 1900¹¹⁸—before computers, before hair dryers, before penicillin, and certainly during a time where women and people of color were treated as second class citizens, at best.

According to Kaplan's Law of the Instrument, "Give a small boy a hammer, and he will find that everything he encounters needs pounding."¹¹⁹ To change the classification system to include another category, examiners and practitioners need to recognize that not all inventions neatly fit into a preexisting category. If they all believe that the inventions neatly fit into the categories and

¹¹³ François Lafond & Daniel Kim, *Long-Run Dynamics of the U.S. Patent Classification System*, 29 J. EVOLUTIONARY ECON. 631, 634 (2019).

¹¹⁴ See, e.g., Marta Paterlini, *There Shall Be Order: The Legacy of Linnaeus in the Age of Molecular Biology*, 8 EMBO REPS. 814, 814-16 (2007) (discussing Carl Linnaeus's system of classifying animals).

¹¹⁵ See, e.g., Angmary Brito, María A. Rodríguez & Mansoor Niaz, A Reconstruction of Development of the Periodic Table Based on History and Philosophy of Science and Its Implications for General Chemistry Textbooks, 42 J. RSCH. SCI. TEACHING 84, 105-06 (2004) (discussing Mendeleev's contribution to the periodic table).

¹¹⁶ Crimes classified as misdemeanors are given different punishments than crimes classified as felonies, but some crimes may be classified differently depending on the state government decision. *See generally* Eisha Jain, *Proportionality and Other Misdemeanor Myths*, 98 B.U. L. REV. 953 (2018) (explaining how crimes are categorized based on severity).

¹¹⁷ USPTO, *supra* note 39, at 1.

¹¹⁸ Id.

¹¹⁹ Abraham Kaplan, The Conduct of Inquiry: Methodology for Behavioral Science 28 (1964).

need no further nuance, there will never be discussion about a new category or subcategory.

To develop new categories, those in the process of categorization must recognize that there is a problem. Examiners must recognize that certain inventions have better subject matter classifications than others, matching on both an academic and a cultural level. However, recognizing that some inventions need another category (or subcategory) can be a difficult leap, especially if there is a certain quantity threshold required to create a new classification category.¹²⁰

Inventors typically invent using their own lived experiences, and the smaller the group that shares that lived experience, the smaller the number of inventive solutions derived from that lived experience—even if everyone in a society had an equitable opportunity to invent and file. Further, as discussed in detail by numerous scholars, women and people of color have been historically excluded from receiving patent protection for their inventions.¹²¹ With fewer resources to pursue patent protection, as well as structural racism and overt sexism throughout the patent prosecution, it is very likely that patent applications directed at solving problems related to the daily lives of women and people of color went unfiled or misappropriated.¹²² These issues, still relevant today,¹²³ likely contribute to the underrepresentation of art unit classes tailored to minority cultural capital-related inventions and viewpoints around classification in general.

If the classifier has never been exposed to a sponge for styling hair—likely because it had not been invented before—the classifier may initially believe that the patent application should be categorized as all sponges before were historically categorized: as a cleaning product.¹²⁴ This misclassification of a Black hair product represents a case where entities at the patent office viewed the hair sponge primarily as a cleaning product invention rather than a haircare invention. The worldview of the classifier likely shaped this decision.

¹²² Swanson, *supra* note 121, at 361.

¹²³ Jordana Goodman, *Addressing Patent Gender Disparities*, 376 Sci. 706, 706 (2022); Goodman & Patterson, *supra* note 31, at 111.

¹²⁰ USPTO, *supra* note 40, at I-15 ("When the number of documents classified in a particular subclass becomes too large to efficiently search, the subclass can be broken down into a group of new subclasses with each having fewer classified documents.").

¹²¹ Nicole Martin, Lack of Patent Prosecution for Minority Business Owners and Entrepreneurs, AM. U. INTELL. PROP. BRIEF, April 2022, at 1, 9-10; Miriam Marcowitz-Bitton & Emily Michiko Morris, Unregistered Patents, 95 WASH. L. REV. 1835, 1837-38 (2020); Kara W. Swanson, Centering Black Women Inventors: Passing and the Patent Archive, 25 STAN. TECH. L. REV. 305, 358-59 (2022); Dan L. Burk, Racial Bias in Algorithmic IP, 106 MINN. L. REV. HEADNOTES 270, 276 (2022); Olivia Constance Bethea, The Unmaking of "Black Bill Gates": How the U.S. Patent System Failed African-American Inventors, 170 U. PA. L. REV. ONLINE 17, 20 (2021).

¹²⁴ See, e.g., U.S. Patent No. 5,311,634 (issued May 17, 1994) (patent for a disk-shaped sponge cleaning pad).

The inequalities of the classification process then snowball into a second inequitable construct—relevant prior art. For the examiner to have the best chance of finding the closest prior art, the classifier will direct the examiner to search categories with other sponges—the cleaning categories.

The misclassification and resulting examination process may seem more egregious to some than others. Some may recognize that the cleaning category is not truly in an ordinary hair product inventor's field of invention, nor is it "reasonably pertinent to the particular problem with which the inventor was concerned,"¹²⁵ while others may see this as a logical subject matter search. This is a key issue because, in an obviousness determination, the examiner considers prior art reasonably pertinent to the field of invention, as well as all prior art from the field of invention—even if it is irrelevant to the problem addressed in the patent application at hand.¹²⁶

For those working in the Black hair space, this invention was simultaneously innovative and intuitive in the hair care world. As soon as the hair sponge was brought to market, it quickly gained popularity as people in that community recognized that it was a beauty product.¹²⁷ People in that community recognized that this was a beauty product. A kitchen sponge (or deodorant applicator) would not have worked in the same way; if they did work in the same way, there is no reason for the original customers to have purchased the hair sponge. However, those who have never styled very curly hair may look at this product and the claims and draw parallels to inventions they already use in their daily lives—such as kitchen sponges.¹²⁸

Like the famous "My Wife and My Mother-in-Law" optical illusion adopted by William Ely Hill,¹²⁹ each actor in the patent prosecution process is limited by their initial viewpoint, seeing only what their cultural background influences them to see. If they are more familiar with sponges, they will see a cleaning product and classify the invention accordingly. If they are more familiar with hair products, they will see a hair product and classify it accordingly. As such, USPTO classifiers may have difficulty seeing past their initial perspective based on both their own cultural biases and exposures, as well as the stringencies of the classification process. Inventors may also not see how a USPTO classifier

¹²⁵ MPEP § 2141.01(a) (9th ed. Rev. 1, Jan. 2024).

¹²⁶ See Yeo, supra note 47.

¹²⁷ About Us, supra note 93 ("[T]he Nudred Sponge . . . quickly gained popularity for its simplicity and effectiveness").

¹²⁸ *Cf. How to Use a Curl Sponge to Style Natural Hair*, L'ORÉAL PARIS (May 29, 2020), https://www.lorealparisusa.com/beauty-magazine/hair-style/hairstyle-trends/hair-curlsponge-tutorial [https://perma.cc/F3FF-VWWP] (explaining how to use sponge on natural curly hair).

¹²⁹ Yasemin Saplakoglu, *What You See in This Famous Optical Illusion Could Reveal How Old You Are*, LIVE SCI. (Sept. 21, 2018), https://www.livescience.com/63645-optical-illusion-young-old-woman.html [https://perma.cc/A9SP-B6JT] (describing the ambiguous image that can be seen as either a young woman or an old woman, depending on the viewer's cognitive biases).

may look at their invention differently than the original intent in the application. This could spell classification disaster for some inventors, especially when the invention stems from a minority culture and most classifiers' knowledge base is primarily situated in their majority cultural background.¹³⁰

Categories may one day be more inclusive of cultural-based inventions, but classification evolution is always a hindsight analysis. For example, although the nanotechnology classification category was created in 2004, over 100 granted patents that were directed to nanotechnology were filed before 1994.¹³¹ After many patents were filed on this subject, the USPTO needed to develop a new classification to better categorize future inventions in this subject.

Not all inventors are as lucky as nanotechnologists. Inventors cannot request that the USPTO create a new classification for their new technology. If the invention is novel enough, it likely needs to get sorted into an ill-fitting predefined category until the inventive field is crowded enough that the USPTO recognizes the need for a new subject matter class. This creates two areas where inventions derived from nonmajority culture may be at a disadvantage. First, there must be a certain quantity of similar inventions filed for an invention to be classified in a category on its own. Second, the USPTO must recognize the persistent misclassification of these inventions to create a new class. There is a lower likelihood that either of these will happen for nonmajority-culture-based inventions than for majority-culture-based inventions.

Another imbalance in patent categorization is the ability to challenge the category. If an inventor decides that the patent application was classified incorrectly and wants to try to recategorize their invention due to a perceived misunderstanding, they likely have no option except to appeal to the examiner. To my knowledge, there is no formal procedure to appeal the classification process to form a new subcategory after filing. Although patent applications may shift classifications if the claims change substantially or if a classification is abolished during patent prosecution, only the examiner can choose to update the art unit classification of an invention.¹³² Those with miscategorized inventions, or inventions without a proper category currently on record, must adapt to the category assigned to them at the USPTO.

This adaptation cannot happen after the application is sorted into the art unit. Inventors do not choose their art unit classification, and they are assigned their

¹³⁰ Even if the classifiers were more diverse, improper classification may still occur for inventions stemming from minority culture due to current category constraints. *See infra* notes 276-79 and accompanying text (detailing categories).

¹³¹ See GOOGLE PATENTS, https://patents.google.com (last visited Apr. 13, 2025) (search for "Nanotechnology"; then narrow by patent office to "US"; then specify filing before 1994) (listing about 115 results).

¹³² MPEP § 903 (9th ed. Rev. 1, Jan. 2024).

classification post-submission. Companies like Patent Bots¹³³ and LexisNexis¹³⁴ have business models where applicants pay for a classification estimate, but there is no guarantee of a match once they actually submit the patent application. Applicants, therefore, must construct their application with many art unit possibilities in mind, because they will be unable to correct their application's contents later. If the USPTO misclassifies more patent applications relying on nonmajority cultural capital than majority cultural capital,¹³⁵ this could create systemically disparate experiences for inventors.

B. The Modern-Day Columbus: Biopiracy in Patenting Existing Traditional Knowledge

Inequitable constructions continue to manifest during the examination process. The public relies on the USPTO to ensure no one is granted a monopoly to an invention already in use.¹³⁶ However, the existence of inventions already in use must be evident to the examiner during the prior art search process.¹³⁷ If the examiner is unaware of, inattentive to, or ignorant of prior art, patent prosecution proceeds as if the prior art never existed.

Once sorted into art units, the examiner can begin a detailed search of prior art. During patent prosecution, an examiner must determine if the claimed invention is novel and nonobvious in light of this prior art.¹³⁸ This search theoretically comprises all "information known publicly before the effective filing date" of the application.¹³⁹ This is another source of imbalanced power and inequity, where the examiner decides what exists and what does not. To add to or alter this determination, either the inventor or a third party must make the examiner aware of art not found in the original search.¹⁴⁰

- ¹³⁷ USPTO, *supra* note 44, at 4.
- ¹³⁸ 35 U.S.C. §§ 102-103.
- ¹³⁹ USPTO, *supra* note 44, at 5.

¹⁴⁰ Compare MPEP § 609 (9th ed. Rev. 1, Jan 2024) (explaining process for how inventor submits knowledge with information disclosure statement), with Third-Party Preissuance Submissions, USPTO, https://www.uspto.gov/patents/initiatives/third-party-preissuance-submissions [https://perma.cc/BRM6-ERLM] (last updated Sept. 9, 2024, 9:34 AM) (explaining process for how a third party submits information with third-party preissuance submission).

¹³³ Art Unit Predictor, PAT. BOTS, https://www.patentbots.com/about-art-unit-predictor [https://perma.cc/M3EP-9TEV] (last visited Apr. 13, 2025).

¹³⁴ *Predict Art Unit*, LEXISNEXIS, https://supportcenter.lexisnexis.com/app/answers/ans wer_view/a_id/1097268/~/predict-art-unit (last visited Apr. 13, 2025).

¹³⁵ I will be studying quantification of misclassification in a future article. To clarify, randomized misclassification would indicate that every applicant is equally likely to be inadvertently disadvantaged in the prosecution process. Systemic misclassification would disparately impact inventors in one category, such as inventors of color, female inventors, or inventions relating to cultural capital derived from their perceived lived experiences.

¹³⁶ See 35 U.S.C. § 101.

In 1995, the USPTO granted a patent to Suman K. Das and Harihar Kohli¹⁴¹ for the oral and topical use of turmeric powder to heal surgical wounds and ulcers.¹⁴² Like every patent application, the USPTO assigned the application to a subject matter art unit: drug, bio-affecting, and body treating compositions (class 424).¹⁴³ The examiner would then proceed to search the existing relevant body of literature to determine if the patent application claims were novel and nonobvious to the person having ordinary skill in drug, bio-affecting, and body treating compositions.

Examiner Rose determined that the method of "administering a woundhealing agent consisting of an effective amount of turmeric powder to said patient" was novel and nonobvious over a plethora of patent documents and publications, including publication discussing the treatment of digestive ulcers with turmeric extract.¹⁴⁴ For a year and a half, the University of Mississippi Medical Center—the patent assignee—could assert their patent over others practicing this treatment in the United States.¹⁴⁵ They could prevent others from making, using, selling, offering to sell, or importing methods to treat wounds with "an effective amount of turmeric" in the United States.¹⁴⁶ Theoretically, if left unchallenged, the assignee could have asserted this patent until 2012, seventeen years after it issued.¹⁴⁷

On October 28, 1996, India's Council of Scientific and Industrial Research ("CSIR") brought a reexamination proceeding, requesting that the USPTO revoke the patent.¹⁴⁸ The CSIR cited thirty-two publications, the earliest dating to 1920, showing that the use of turmeric to heal wounds was not novel and was obvious.¹⁴⁹ They argued this invention was "known in every household" in India

¹⁴¹ Sourabh Ganpatye, *The Battle of Haldighati: India's Fight for Traditional Knowledge*, LEGALOGY (July 9, 2020), https://www.legalogy.in/the-battle-of-haldighati/ [https://per ma.cc/G839-KJV8].

¹⁴² See U.S. Patent No 5,401,504 (issued Mar. 28, 1995). The patent was assigned to the University of Mississippi Medical Center. *Id.*

¹⁴³ Class 424: Drug, Bio-Affecting and Body Treating Compositions, USPTO, https://www.uspto.gov/web/offices/ac/ido/oeip/taf/moc/424.htm (last updated June 30, 2000).

¹⁴⁴ See '504 Patent.

¹⁴⁵ See id.

¹⁴⁶ See id.

¹⁴⁷ See K. Russell Griggs, *What Is the Life of a Patent in the US?*, TRASKBRITT, https://www.traskbritt.com/what-is-the-life-of-a-patent-in-the-us/ [https://perma.cc/ZPG5-WQTM] (last visited Apr. 13, 2025) (noting that patents had a seventeen-year term, calculated from the date of issuance, until June 7, 1995).

¹⁴⁸ See Requests for Reexaminations Filed, USPTO (Dec. 3, 1996), https://www.uspto.gov/news/og/1996/week49/patrequ.htm [https://perma.cc/J6HC-PKDR] (listing Reexamination No. 90/004,433 for the '504 patent, filed on October 28, 1996).

¹⁴⁹ K.S. Jayaraman, US Patent Office Withdraws Patent on Indian Herb, 389 NATURE 6, 6 (1997).

and had been part of the traditional Indian knowledge base.¹⁵⁰ Therefore, they argued, it was not entitled to patent protection.

Most references cited by the CSIR in the reexamination proceeding were in Sanskrit, Urdu, and Hindi,¹⁵¹ three languages primarily spoken in India and surrounding countries. There is no evidence that the examiner read or was made aware of any of the thirty-two publications cited by the CSIR at the time of the original patent application examination. The CSIR challenged the original patent office decision—that the claimed invention was novel—by showing the USPTO that the prior art existed and was overlooked by the examiner in the initial prosecution process. In other words, the initial examination process was blind to the existence of an invention—known to one party (people in India and people whose cultural knowledge stemmed from India) and unknown to or unrecognized by another (the examiner).¹⁵²

In the original patent application, the inventors only disclosed a small number of Indian references, specifically discussing how turmeric was used as a food colorant and as a treatment for sprains and inflammatory conditions.¹⁵³ It also discussed the use of turmeric as an anti-inflammatory and its reduction in the production of fat cells.¹⁵⁴ The examiner found seven publications related to turmeric, but only cited three patent applications as relevant to the patent examination process.¹⁵⁵

¹⁵⁰ Anusree Bhowmick, Smaranika Deb Roy & Mitu De, *A Brief Review on the Turmeric Patent Case with Its Implications on the Documentation on the Documentation* [sic] *of Traditional Knowledge*, 1 NDC E-BIOS 83, 87 (2021), https://www.ndcebios.in/v1n1/2021010110.pdf [https://perma.cc/C4GQ-XPFV]. Vandana Shiva's premise that biopiracy should be a central concern globally is an important topic that warrants future discussion, outside the scope of this work. *See generally* Vandana Shiva, PROTECT OR PLUNDER? UNDERSTANDING INTELLECTUAL PROPERTY RIGHTS 49 (Zed Books Ltd. 2001).

Since US-style patent laws are designed to grant patents for new inventions based on denial or non-recognition of prior art elsewhere, they allow patents to be granted for existing knowledge. This is the basis of biopiracy. Paradoxically then, a legal system aimed at preventing 'intellectual piracy' is itself based on legitimizing piracy.

Id. at 18 (emphasis omitted). Although I recognize that not every person in India was necessarily aware of this use of turmeric, India's CSIR highlights the assumed connection between cultural knowledge and cultural identity, in that someone who identifies as Indian is likely to also have the cultural knowledge about turmeric.

¹⁵¹ Bhowmick et al., *supra* note 150, at 86 (noting that "32 references were located in different languages," including "Sanskrit, Urdu and Hindi").

¹⁵² Under U.S. patent law, any public disclosure is prior art and prevents others from patenting subsequent inventions. FENN MATHEW, USPTO, UNDERSTANDING PRIOR ART AND ITS USE IN DETERMINING PATENTABILITY 6 (2018), https://www.uspto.gov/sites/default/files/documents/May%20Info%20Chat%20slides%20%28003%29.pdf [https://perma.cc/E8RJ-MWRR]. This includes communication in any language. *See* MPEP § 609 (9th ed. Rev. 1, Jan. 2024) (detailing requirements for non-English language information).

¹⁵³ See U.S. Patent No. 5,401,504, at col. 1, 1. 35.

¹⁵⁴ *Id.* at col. 2.

¹⁵⁵ *Id*.

The USPTO agreed with the arguments brought by the CSIR—namely that, if the examiner was aware of these documents, the examiner would not have allowed the patent to issue—and revoked the patent on April 21, 1998.¹⁵⁶

Indian scientists celebrated the results of the reexamination process, "claim[ing] that it was the first time a developing country was able to overturn a patent of the United States on their traditional remedy."¹⁵⁷ This was seen as a step in reversing Western appropriation of traditional knowledge, referred to as "biopiracy."¹⁵⁸ The inventors and assignee were blocked from asserting patent rights based on the fallacy that the inventors discovered something novel and nonobvious. The CSIR showed that the claimed invention already existed, despite the determination in the initial examination. At the end, the CSIR spent about \$10,000 and two years fighting this case and restored the "intangible value" of recognition to those who held traditional knowledge.¹⁵⁹

This case brought to light the lack of resources that patent offices have for searching traditional knowledge and the difficulties associated with proving the existence of traditional knowledge according to USPTO standards.¹⁶⁰ Determining what exists and what does not exist relies on the two fundamental actions of discovery and disclosure. The infrastructure of the USPTO helped to construct one worldview, in that the initially presented invention was novel and nonobvious. Other advocates—the CSIR—used their power to correct the record and show that previous disclosures (especially those potentially deemed inaccessible to the USPTO examiner) showed that the invention was discovered long before the patent application's filing date.

Though prior art can constitute written material in any language and orally disclosed material in some cases, in practice, the examiner's search is limited primarily to written material.¹⁶¹ "[I]n practice, 'patent examiners only conduct

¹⁵⁹ Bhowmick et al., *supra* note 150, at 87.

¹⁶⁰ See id. at 87. Although improved search mechanisms may help to close this knowledge gap somewhat, the lack of written information concerning traditional knowledge will likely still serve as a barrier for years to come.

¹⁶¹ Greg Reilly, *Decoupling Patent Law*, 97 B.U. L. REV. 551, 576 (2017) [hereinafter Reilly, *Decoupling*] (explaining that patent examiners typically only search printed works for

¹⁵⁶ Bhowmick et al., *supra* note 150, at 86.

¹⁵⁷ *Id.*; *see infra* note 178 (discussing similar lawsuits regarding patents on Basmati rice and neem).

¹⁵⁸ See, e.g., Poku Adusei, Regulatory Diversity as Key to the "Myth" of Drug Patenting in Sub-Saharan Africa, 54 J. AFR. L. 26, 38-40 (2010) ("In essence, (mis-)appropriating traditional knowledge and patenting is after scientific tinkering, without recognizing its true source and factoring in the interest of dispossessed communities, is unethical, if not illegal."); *cf.* RUTH L. OKEDIJI, CIGI PAPERS NO. 176, TRADITIONAL KNOWLEDGE AND THE PUBLIC DOMAIN 4 (2018), https://www.cigionline.org/sites/default/files/documents/Paper% 20no.176web.pdf [https://perma.cc/JA8F-HMEQ] (explaining how "developing countries and Indigenous groups justifiably perceive the . . . concept of the public domain with deep hostility" because many scientists view traditional knowledge as freely available for use).

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prior art searches for printed materials² and leave the searching of nonprinted publicly disclosed information to the litigators.¹⁶² The absence of orally disclosed information in the prior art process necessarily creates a reality with incomplete, unbalanced knowledge. Not only is the search process void of any orally disclosed prior art (or any non-written disclosed prior art), but the search is also likely biased against poorly translated non-native English disclosures.

CSIR Director R. Mashelkar remarked that it was important to document "traditional knowledge, to provide evidence of prior knowledge."¹⁶³ Theoretically, if the USPTO had better access to documentation regarding traditional knowledge, the examiner would have been successful in their search for prior art and would have rejected the patent application in the first place. After this case, the Traditional Knowledge Digital Library ("TKDL") was established to prevent patent grants to traditional knowledge in India—specifically in the traditional medicine space.¹⁶⁴ The World Intellectual Property Organization ("WIPO") also responded to the reexamination on the neem and turmeric patents by publishing a toolkit to document traditional knowledge worldwide.¹⁶⁵ Collectively, these initiatives are meant to preserve oral traditions in written form to enable examiners to have a better prior art search processes, such that their processes do not harm those with minority cultural capital by preventing them from making and using well-known, preexisting inventions.

However, this still imposes the Westernized notion of written proof—that someone must provide written documentation such that an examiner can understand whether the prior art publicly existed before the patent application filing date. Despite their contributions, the WIPO toolkit and the TKDL operate within a system that continues to marginalize nonwritten forms of knowledge by prioritizing written documentation as the primary means of recognition. The current process creates an unbalanced PHOSITA, biased towards written

prior art); Michael Risch, *The Failure of Public Notice in Patent Prosecution*, 21 HARV. J.L. & TECH. 179, 183 (2007) ("Although prior knowledge or use of an invention can be prior art, patent examiners only conduct prior art searches for printed materials."); *see also* Greg Reilly, *The Complicated Relationship of Patent Examination and Invalidation*, 69 AM. U. L. REV. 1095, 1119-20 (2020) [hereinafter Reilly, *Complicated Relationship*] (discussing shortcomings of examination in source material and language). I note that pure oral disclosure without printed or recorded accompaniment is not always sufficient to meet the standard of prior art. This was especially true before the America Invents Act ("AIA"). *See* JONATHAN S. MASUR & LISA LARRIMORE OUELLETTE, PATENT LAW: CASES, PROBLEMS, AND MATERIALS 61 (3d ed. 2023) ("Electronic publications, including digital videos, can be printed publications, although a purely oral presentation that is not recorded cannot."). "The Federal Circuit has yet to decide a case that squarely implicates" new wording in the AIA, "but an oral presentation, unaccompanied by any printed matter, might well be an example of something that is 'otherwise available to the public."" *Id.* at 67.

¹⁶² Reilly, *Decoupling*, *supra* note 161, at 576.

¹⁶³ Bhowmick et al., *supra* note 150, at 87.

¹⁶⁴ Id.

¹⁶⁵ Id.

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disclosures and discarding or overlooking oral disclosures and non-English disclosures that may preempt the claims in the patent application.

Even if this is a necessary imbalance—in that we have developed recorded writing as a cross-cultural means of access to knowledge,¹⁶⁶ we can also simultaneously recognize that this imbalance unfairly burdens those who document their culture's knowledge through oral tradition and language rarely translated to English, which is a burden disproportionately borne by communities with minority cultural capital. Even if a group wanted to supplement the USPTO construction, the burden of proof is still set with a bias towards written proof dated prior to the date of patent application filing.

There are always times where an examiner misses an important piece of prior art, and litigation and Patent Trial and Appeal Board ("PTAB") actions are meant to correct for these scenarios. However, one cultural group should not be continually overburdened with these expensive, time-consuming tools to correct knowledge gaps at the USPTO. Inventors should not be allowed to continually engage in patent biopiracy¹⁶⁷ when the USPTO can use their power to invest in resources to protect the publicly known and publicly used intellectual property.

This example highlights how known disclosures can be disregarded in the patent prosecution process. The original prior art search and resulting knowledgebase to evaluate the obviousness of the filed invention was constructed without at least thirty-two vital pieces of well-known, publicly disclosed information. As a result, traditional medicine communities were overlooked as prior inventors, and the invention was judged as if the traditional medicine community was nonexistent.

This underlies a greater problem in the prosecution process. The structure of the USPTO's search process relegates those who transmit knowledge through non-written means as insignificant and fails to acknowledge it.

The PHOSITA is "deemed to have looked at and read publicly available documents and to know of public uses in the prior art. [The PHOSITA] understands all languages and dialects."¹⁶⁸ This is an impossibly fictitious standard, but patent law relies on this fiction. The search process is only built to search printed publications,¹⁶⁹ and even if examiners were to hear oral testimony

¹⁶⁶ Wolfgang Röllig, Asia Minor as a Bridge Between East and West: The Role of the Phoenicians and Aramaeans in the Transfer of Culture, in GREECE BETWEEN EAST AND WEST: 10TH–8TH CENTURIES BC 93, 96 (Günter Kopcke & Isabelle Tokumaru eds., 1992), https://archiv.ub.uni-heidelberg.de/propylaeumdok/1080/1/Roellig_Asia_minor_as_a_bridg e_1992.pdf [https://perma.cc/L6HB-A26S] (discussing how Phoenicians developed the alphabet to disseminate ideas and create cross-cultural contacts).

¹⁶⁷ *Patents & Biopiracy*, ETC GROUP, https://www.etcgroup.org/issues/patents-biopiracy [https://perma.cc/9T9W-E6XQ] (last visited Apr. 13, 2025).

¹⁶⁸ D.P.S. Parmar, *The Many Faces of the 'Person Skilled in the Art' (PSITA)*, ASIA IP (Dec. 31, 2022), https://web.archive.org/web/20240814063512/https://www.asiaiplaw.com/ article/the-many-faces-of-the-person-skilled-in-the-art-psita.

¹⁶⁹ Reilly, Decoupling, supra note 161, at 564; Myra Khan, The Role of Oral Traditions

about prior art, it is very likely that examiners would require written documentation about oral tradition dated before the patent application's filing to use the testimony in the examination process. Moreover, there is no public comment to supplement this deficiency.

There is a concern in patent law—even at the international level—that attempting to use orally disclosed traditional knowledge "would create some evidentiary issues, precisely because of the lack of documentation."¹⁷⁰ In addition to the difficulties the USPTO may face in searching for non-English literature and information disclosed in foreign countries but not necessarily available to a United States audience, the USPTO is not structured to support knowledge from oral tradition as a prior art medium.

This erasure or relegation of oral tradition to second-class prior art parallels historical colonial tradition. Throughout human history, selective marginalization of people has included their labeling as "other," meaning "those who are not from the West, and who are, by extension, deficient in manners, values, culture, education, and development."171 Oral traditions were considered insignificant.¹⁷² The tradition of oral transmission of knowledge, rather than written, "was used as an important pretext for the project of colonization, for lack of written languages intentionally served as one important reason of civilizing the backward areas of Africa, Asia, Latin America, and other locations of the same genre."¹⁷³ For example, when European entities colonized Africa, "African oral literatures were not accepted as genuine and valid forms of social, cultural, political, legal, and economic expression . . . only written literature (in colonial languages) was to be regarded as meaningful literature."174

This superiority of written English language literature is not unique to the USPTO; European patent offices also prioritize written disclosures.¹⁷⁵ This

Within Marginalized Societies and Their Validity Within Archives, ARIZ. STATE UNIV. LIBR., https://lib.asu.edu/news/role-oral-traditions-within-marginalized-societies-and-their-validity -within-archives-myra [https://perma.cc/L38U-HGL8] (last updated Oct. 18, 2021).

¹⁷⁰ WIPO, Intergovernmental Comm. on Intell. Prop. and Genetic Res., Traditional Knowledge and Folklore, Recognition of Traditional Knowledge Within the Patent System, Doc. WIPO/GRTKF/IC/13/7 (Sept. 18, 2008).

¹⁷¹ Ali. A. Abdi, Oral Societies and Colonial Experiences: Sub-Saharan Africa and the De Facto Power of the Written Word, 37 INT'L EDUC. 42, 42-43 (2007).

¹⁷² *Id.* at 43.

¹⁷³ *Id*.

¹⁷⁴ Id.

¹⁷⁵ In Europe, "a public oral description, use, exhibition, etc. is considered as prior art if the facts of the disclosure can be proved." *Oral Disclosure, Use, Exhibition, Etc. as State of the Art*, EUR. PAT. OFF., https://www.new.epo.org/en/legal/guidelines-epc/2023/b_vi_2.html [https://perma.cc/BM9T-J7YS] (last visited Apr. 13, 2025). Although in litigation, there can be a written document published after the application's filing date to corroborate the original oral description, this is not true in the search process. In Europe, an oral description counts "as prior art only if [the search division] has available a written confirmation or is otherwise

preferential weight towards written disclosures in the prior art search is well recognized in scholarly literature.¹⁷⁶ This puts an unequal burden on communities who transmit their knowledge orally, communities who may not use Western scholarly literature to widely disseminate their knowledge, and communities who do not have their knowledge regularly translated into English documentation. These communities are disproportionately communities of color,¹⁷⁷ international communities,¹⁷⁸ and communities often thought of as "simple,"¹⁷⁹ rather than innovative communities. Instead of their knowledge being automatically accounted for in the patent evaluation process—equal to written disclosures—they must either work to document their knowledge in such a way to accommodate the USPTO's current search proceedings, or they must later fight to have their knowledge considered in a court of law post-grant.

As of now, the USPTO prior art searches are disproportionately dominated by Western written literature. The CSIR explained that it would be difficult under the USPTO search procedures to have known that this literature existed,¹⁸⁰ but was able to produce the necessary literature with relative ease under their own search procedures. Although WIPO, the TKDL, and improved search methods through artificial intelligence are making traditional knowledge more accessible to examiners at the USPTO,¹⁸¹ there is still more work to be done to

¹⁷⁸ Ngũgĩ wa Thiong'o, *The Politics of Translation: Notes Towards an African Language Policy*, 30 J. AFR. CULTURAL STUD. 124, 125 (2018) ("What began in the colonial era, the delegitimization of African languages as credible sources and basis of knowledge, was completed and normalized in the post-colonial era... Where English was now equated with the gate to progress and modernity, African languages came to be seen as barriers to this glittering thing called progress and modernity."); *see also* Saipriya Balasubramanian, *Traditional Knowledge and Patent Issues: An Overview of Turmeric, Basmati, Neem Cases.*, MONDAQ (Apr. 18, 2017), https://www.mondaq.com/india/patent/ 586384/traditional-knowledge-and-patent-issues-anoverview-of-turmeric-basmati-neem-cases [https://perma.cc/PL8S-WCS2] ("India's traditional medicinal knowledge exists in local languages such as Sanskrit, Hindi, Arabic, Urdu, Tamil etc. is neither accessible nor comprehensible for patent examiners at the international patent offices.").

¹⁷⁹ See The 4 Core Values of the Amish Culture, AMISH VILL. (Sept. 27, 2021), https://www.amishvillage.com/blog/the-4-core-values-of-the-amish-culture/

[https://perma.cc/A3M5-U3M7]; Laurie Oswald Robinson, *Eldon Hostetler: Blessed to Blaze New Trails*, ANABAPTIST WORLD (Sept. 1, 2014), https://anabaptistworld.org/eldon-hostetler-blessed-blaze-new-trails/ [https://perma.cc/SXR3-XV3B].

¹⁸⁰ Bhowmick et al., *supra* note 150, at 86.

¹⁸¹ *Id.* at 87.

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convinced that the facts can be proved." *Id.* Oral disclosures and public use—although theoretically equitably valid as prior art—"are more usually brought up by opponents in opposition proceedings" rather than found by examiners during the search process. *Id.*

¹⁷⁶ Reilly, *Decoupling*, *supra* note 161, at 576.

¹⁷⁷ See, e.g., Michelle Cyca, *How a Cherokee Leader Ensured His People's Language Survived*, HISTORY, https://www.history.com/news/cherokee-sequoyah-written-language [https://perma.cc/46P4-S3EL] (last updated Nov. 6, 2026) (explaining that Native American languages did not always have written form).

fully include all publicly available knowledge during the patent prosecution process.

C. That's Not Kosher: Inequitable Linguistic Standards in Patent Prosecution

In addition to subject misclassification and prior art searches, evaluating patent applications for enablement and written description standards can be fraught with inequalities. Patent law states that the claimed invention must be described such that any person skilled in the art can make and use the invention without undue experimentation.¹⁸² This fictional standardized person skilled has a nuanced, standard vocabulary that does not need further explanation. Chemical engineers explain their chemical engineering inventions to those skilled in chemical engineering arts, not to a person in the general U.S. population. If the fictional skilled person in the art unit does not understand a term of art used in the specification or during the examination process, the specification could fail for its indefiniteness or lack of enablement.¹⁸³

The linguistic breadth and depth of this fictional person is outside the hands of the inventors—there is a set number of art unit classifications at the USPTO, and some have better-tailored vocabularies than others. If an inventor is unfortunate enough to not share their vocabulary with the fictional skilled person in the sorted art unit (either objectively or from the examiner's perspective), the inventor can face rejection for their linguistic choices. When members of the Shkedi family filed a patent application for a Jewish scroll and ink invention using the term "kosher," the examiner determined that the word "kosher," as defined in the specification and intuitively known by those in the Shkedi's Jewish community, did not overlap with the skilled person in the art's vocabulary, which resulted in a rejection.

The Shkedi family ("applicants") filed a patent application for their Jewish scroll and ink invention that is resistant to damage.¹⁸⁴ It used a flexible, water-resistant kosher black ink to create a better and more durable parchment scroll.¹⁸⁵ Using the term kosher led to issues in patent prosecution.

Kosher is a broad term similar to halal, meaning "proper" or "fit."¹⁸⁶ For example, a scroll that can be used for Jewish rituals would be considered kosher if it fulfilled all standards required under Jewish law, and food is considered kosher if it fits the dietary framework for food preparation, processing, and

¹⁸² See 35 U.S.C. § 112.

¹⁸³ John P. Iwanicki, *Tips on How to Properly Construe Patent Claims*, GENETIC ENG'G & BIOTECHNOLOGY NEWS (Dec. 1, 2008), https://www.genengnews.com/insights/tips-on-how-to-properly-construe-patent-claims/ [https://perma.cc/7DNX-WRRD].

¹⁸⁴ U.S. Patent Application Serial No. 12/121,025 (filed May 15, 2008).

¹⁸⁵ See id.

¹⁸⁶ COURTNEY BIR, NATHAN DETHLOFF, RODNEY HOLCOMB, JJ JONES & JOSH CAMPBELL, OKLA. STATE UNIV., KOSHER AND HALAL SLAUGHTER (2024), https://extension.okstate.edu/fact-sheets/agec-637-kosher-and-halal-slaughter.html [https://perma.cc/WU7C-A7K3].

consumption set forth in Jewish law. There are many sects of Judaism, and they can have different interpretations of what is considered kosher for various Jewish rituals. Some aspects of the religion have similar kosher standards across sects, while others differ.

Most Jewish synagogues—from Reform to Orthodox—use Torahs and mezuzahs (ritual objects written with kosher ink on kosher parchment scrolls)¹⁸⁷ that meet the same kosher criteria.¹⁸⁸ In other words, though Reform Jews may follow different dietary rituals than Orthodox Jews—and Orthodox Jews may consider Reform Jews' diets unkosher,¹⁸⁹ their Torahs (and the parchment scrolls with ink that they're made from) are indistinguishably kosher.¹⁹⁰

The Shkedis applied for patent protection for their kosher Jewish scroll and ink invention that is resistant to damage.¹⁹¹ The invention was classified into the print ink art unit (428/195) and assigned to an examiner in the stock materials art unit 1785, meaning the standard for enablement and written description is judged against the knowledge of an ordinary person familiar with print ink.¹⁹² The patent application was also classified and searched as a religious artifact

¹⁹² Id. at 1; see also Classes Arranged by Art Unit, USPTO, https://www.uspto.gov/page/classes-arranged-art-unit-art-units-1764-2681

[https://perma.cc/V8EX-35QR] (last visited May 20, 2025) (labeling art unit 1785 as "stock material or miscellaneous articles").

¹⁸⁷ A Torah contains the first five books of the Hebrew Bible and is written on parchment paper. *How Is the Torah Made?*, CHABAD.ORG, https://www.chabad.org/library/article_cdo/ aid/339590/jewish/How-Is-the-Torah-Made.htm (last visited Apr. 13, 2025); Dovid Zaklikowski, *The Mezuzah Scroll and Case*, CHABAD.ORG, https://www.chabad.org/ library/article_cdo/aid/256923/jewish/The-Mezuzah-Scroll-and-Case.htm (last visited Apr. 13, 2025).

¹⁸⁸ Some Reform or Conservative synagogues may purchase Torahs that were written by women, but these women follow the same rituals as their male counterparts when writing the Torah and the resulting products are likely identical. Kosher ink is pitch black and is made of gum arabic, tannic acid, and ferrous sulfate or copper sulfate. Kosher parchment is produced from the hide of a kosher animal and is scored with an engraving instrument on the side of the parchment closest to the flesh of the animal. Rabbi Moshe Heinemann, Wireless Security: Mezuzah Primer. STAR-K (2022), https://www.star-k.org/articles/kashrus-A kurrents/9254/wireless-security-a-mezuzah-primer/ [https://perma.cc/LM95-9NFE]. Additionally, the letters must be clearly readable, even after the scroll is unrolled and rerolled several times for religious purposes. The letter cannot crack or smudge. Rabbi Lazer Gurkow, Every Jew Is a Letter in the Torah, ISRAEL NAT'L NEWS (May 24, 2023, 4:00 AM), https://www.israelnationalnews.com/news/371868 [https://perma.cc/S7WV-MT3X].

¹⁸⁹ Malcolm Tatum, *What Is the Difference Between Orthodox and Reform Judaism?*, LANGUAGEHUMANITIES, https://www.languagehumanities.org/what-is-the-difference-bet ween-orthodox-and-reform-judaism.htm [https://perma.cc/B7FY-9YF2] (last updated May 23, 2024).

¹⁹⁰ How Is the Torah Made?, supra note 187.

¹⁹¹ See generally U.S. Pat. App. No. 12/121,025 (filed May 15, 2008).

(428/3).¹⁹³ The person skilled in the art, therefore, was an ordinary person familiar with religious artifacts. This constructed person may not be equally familiar with all religious traditions associated with the religious artifacts.

The patent application originally claimed to be "a religious artifact including . . . kosher parchment and Hebrew religious text written with kosher black ink."¹⁹⁴ It explained characteristics typical of kosher inks, such as water resistant, not tacky, and "can be scraped off and removed from said surface without leaving a visible ink residue on said surface and without causing substantial damage to said parchment."¹⁹⁵ The specification also defined kosher ink as ink that has kosher ingredients, has a black color, does not soak into the parchment, adheres to the parchment, and can be scraped off without substantially damaging the parchment.¹⁹⁶ The application added a definition for kosher, stating that kosher is defined as "in compliance with the tenets of the Jewish religious laws . . . of at least one of the various Jewish groups."¹⁹⁷

This was not enough, according to the examiner, for a person skilled in the art to understand the word "kosher." The first office action began with an indefiniteness rejection, meaning the examiner believed the person skilled in the art cannot "determine the metes and bounds of the claim so as to understand how to avoid infringement."¹⁹⁸ The examiner said that, even though "kosher" is defined in the specification, the term "kosher" is indefinite, as it has no precise, standard definition and different Jewish groups have different opinions as to what constitutes "kosher."¹⁹⁹ That is, even though the applicant tried to bridge the lexical gap between his culture and the examiner's culture by including a definition, the examiner unilaterally determined that the attempt was unsuccessful.

Though the average person familiar with religious artifacts may not understand the term of art, a person familiar with *Jewish* religious artifacts would understand that—unlike the kosher food laws—kosher scrolls are held to similar standards across all mainstream Jewish faith sects. For those unfamiliar, the applicants included definitions of the word, both in terms of compliance with

¹⁹³ See Search Information Including Classification, Databases and Other Search Related Notes of U.S. Pat. App. No. 12/121,025 (Mar. 2, 2011); see also USPTO, STOCK MATERIAL OR MISCELLANEOUS ARTICLES, https://www.uspto.gov/web/patents/classification/uspc428/ defs428.pdf [https://perma.cc/ZL5B-GBCG].

¹⁹⁴ U.S. Pat. App. No. 12/121,025, at 8.

¹⁹⁵ *Id*.

¹⁹⁶ U.S. Patent Application Serial No. 60/931,200, at 2-3 (filed May 23, 2007).

¹⁹⁷ *Id.* at 2.

 ¹⁹⁸ See Non-Final Office Action dated Mar. 2, 2011, U.S. Pat. App. No. 12/121,025, at 2.
¹⁹⁹ Id.

religious laws and physical description of how the "kosher" description further defines the term "kosher ink."²⁰⁰ However, the examiner was unpersuaded.²⁰¹

In their response, the applicants removed the term "kosher" from the claims and continued to make arguments to distinguish their invention over other prior art cited by the examiner.²⁰² For example, the applicants attempted to explain that the prior art inks cited by the examiner either remained tacky or could not be removed by scraping, while their claims required that their ink was not tacky and could be removed through a traditional scraping method.²⁰³ They also emphasized throughout their application process the kosher aspects of their ink—that their ink does not stick "to the rear surface of the parchment when the parchment is rolled,"²⁰⁴ and is still capable of being scraped off, for the purposes of fixing malformed letters, but not easily erased with a regular eraser.²⁰⁵ Any violation of any of these principles would render the scroll unusable for ritual purposes.²⁰⁶ In other words, the inks cited by the examiner, if used, would render the scroll unkosher.²⁰⁷

For seven years, the applicants tried to use other words—like "not tacky" or "can be scraped off and removed from said surface without leaving a visible ink residue" as a substitute for the word "kosher."²⁰⁸ For seven years, the examiner rejected claims over inks that were tacky²⁰⁹ or were not consistent with the scraping off description in the specification. The applicants and examiner were caught in a cycle, where neither understood the language the other was trying to use in the patent application process. In 2012, the applicants appealed the examiner's rejections.²¹⁰

²⁰³ See id. at 3-30 (describing different comparative elements of prior-cited inks and proposed patent-application ink).

²⁰⁰ See generally U.S. Pat. App. No. 12/121,025. Although the definition can include some variability since something can be considered "in compliance with the tenets of the Jewish religious laws" of one Jewish group, but not another, such variation is well known among commonly recognized Jewish groups. In the particular application of Torah scroll and mezuzah ink, the small distinctions in Jewish religious laws would not affect each group's interpretation of the term "kosher ink."

²⁰¹ See generally Non-Final Rejection dated Mar. 2, 2011, supra note 198.

 $^{^{202}}$ See Response to First Office Action dated May 19, 2011, U.S. Pat. App. No. 12/121,025, at 2.

²⁰⁴ See U.S. Pat. App. No. 12/121,025, at 3.

²⁰⁵ See id. at 7.

²⁰⁶ *Id.* at 2 (describing consequences of non-kosher status).

²⁰⁷ See generally Response to First Office Action dated May 19, 2011, *supra* note 202 (differentiating between the kosher patent-applicant ink and non-kosher inks on market).

²⁰⁸ See U.S. Pat. App. No. 12/121,025, at 7.

²⁰⁹ Appeal Brief - Patent at 13, *Ex parte* Shkedi, No. 2012-010982 (P.T.A.B. Apr. 22, 2014).

²¹⁰ See generally *id*. (outlining applicants' responses to the patent examiner's grounds for rejecting the application, largely based on competing definitions and approaches to defining kosher ink elements).

In their appeal brief, the applicants explained that the arguments made by the examiner were based on faulty chemistry and a misunderstanding of how ink and parchment interact.²¹¹ The examiner cited sources with brittle inks inconsistent with the claim requirement that the ink can be scraped off and removed without causing damage to the parchment and without leaving a visible residue.²¹² The inventors made several arguments to this effect, stating that "every person skilled in the art of writing scrolls knows that it is impossible to scrape and completely remove brittle ink."²¹³

In the end, the Board of Patent Appeals and Inferences agreed with the inventors—the examiner had not met the burden of showing that the prior art met the constraints of the patent application claims according to the definitions provided in the specification.²¹⁴

After this, the examiner again rejected the application, determining that a person skilled in either religious artifacts or print ink art did not have enough information to make the claimed invention.²¹⁵ Therefore, the examiner issued an enablement rejection, meaning that the specification failed to enable the person skilled in the art "to make the invention commensurate in scope with these claims."²¹⁶ Essentially, the examiner's constructed fictional person needed more information to make the claimed invention.

The examiner offered a revision to the claims, saying that the inventors' claims would be allowable if they added language limiting the amount of polymeric binding material and pigment in the ink to specific ranges.²¹⁷ The examiner argued that these ranges of binding material and pigment were necessary to avoid undue experimentation to create the claimed ink.²¹⁸ Much like the term "kosher," someone skilled in the art of print ink or general religious artifacts may need this additional information to make the claimed invention, but someone with Jewish traditional writing experience would likely not need such specific information.²¹⁹

²¹¹ *Id.* at 15-16.

²¹² Id. at 18-19.

²¹³ *Id.* at 18.

²¹⁴ See generally Ex parte Shkedi, No. 2012-010982 (outlining the patent board's reversal of the examiner's prior rejection and acknowledging applicants' demonstrated evidentiary opposition to the examiner's claims).

²¹⁵ See generally Non-Final Office Action dated Sept. 24, 2014, U.S. Pat. App. No. 12/121,025 (rejecting the patent application claims due to a lack of available detail for any person skilled in art to make the described ink).

²¹⁶ See Ex parte Shkedi, No 2012-010982, at 2.

²¹⁷ Id. at 8-9.

²¹⁸ Id. at 3-5.

²¹⁹ Telephone Interview with Eliran Shkedi, inventor listed on U.S. Pat. App. No. 12/121,025 (July 7, 2023) (on file with author).

The applicants did not respond to this office action.²²⁰ Ultimately, the applicants failed to get their patent granted and the application went abandoned in 2015.²²¹ Dio lanetzach (literally "forever ink"), the ink created by the inventors and described in the patent application, is sold internationally.²²² Because the USPTO did not issue a patent to the applicants, the Shkedis have no means to prevent anyone from making and using their ink, and those skilled in Jewish ink manufacturing could copy the recipes in the publicly available patent application to make the ink.

The examiner evaluating whether the applicant has met a disclosure standard leverages their power to determine whether this skilled person can interpret the language in the specification to create the claimed invention. "Ideas and language of an inventor are often . . . highly subjective."²²³ Interpretation of this language, especially if the examiner does not share the cultural capital necessary to interpret a word, can certainly impact the examination process. The examiner has one subjective viewpoint and leverages that viewpoint to interpret the patent application language. The examiner constructs what language the PHOSITA knows and what information the PHOSITA needs to have better explained before constructing the claimed invention.

Vocabulary is an integral part of the examination process—and this vocabulary does not always include nonmajority, relevant, culturally derived vocabulary. Excluding such words from a fictional skilled person's lexicon can leave an inventor who uses those words in everyday life at a significant disadvantage.

Patent applications are frequently rejected for lack of support in a linguistic choice. Inventors should include as much information as possible in a patent application to ensure anyone skilled in the art can understand the invention. When the linguistic overlap gap occurs for reasons of cultural disparity and not a niche section of scientific development, however, the resulting gap disparately impacts people using nonmajority, culturally derived vocabulary.

Patents serve a function of public notice, in that the description must "enable *any* person skilled in the art" to be able to make and use the invention.²²⁴ This is not the public, but rather skilled individuals within the invention's specialty. When this standard is based on scientific endeavors, applicants can imagine presenting the invention at conferences, teaching their students or interns to use the invention, or writing a scientific publication. In other words, they can

²²⁰ See U.S. Pat. App. No. 12/121,025: Documents & Transaction History, USPTO, https://patentcenter.uspto.gov/applications/12121025/ifw/docs (last visited Apr. 13, 2025).

²²¹ See generally Notice of Abandonment dated May 4, 2015, U.S. Pat. App. No. 12/121,025.

²²² לנצח, DIO LANETZACH, http://dio-lanetzach.blogspot.com/2009/01/dio-lanetzach.html [https://perma.cc/236Z-9UHX] (last visited Apr. 13, 2025).

²²³ Fred H. Bamberger, *Translating in the U.S. Patent Office*, 46 MOD. LANGUAGE J. 33, 34 (1962).

²²⁴ 35 U.S.C. § 112 (emphasis added).

generally determine how much information they need to include based on the community linguistic norms in which they surround themselves.

Those inventing and describing their inventions with minority cultural capital should be held to the same standard. The examiner should be able to look at their community, including how they would present the information to their apprentices or students, and determine if the language included in the specification is enabling and sufficient to avoid an indefiniteness rejection. This did not happen to the Shkedis.

The examiner determines what words are known to the public and to any person skilled in the art, and does so like any human being—with a biased interpretation of commonality and ambiguity based on their lived experiences. Words derived from only majority or minority cultural capital can be treated differently. Though patents certainly do serve a public notice function—including allowing those of skill in the art to know whether their future actions infringe a currently active patent— we should consider whether enablement and written description evaluations could use the same community-informed standards for minority cultural communities as are used in scientific communities. To require more likely unduly burdens those from minority cultural communities to provide more information about their cultural background than those in majority cultural communities.

In this case, the cultural community includes a strong Jewish educational background. Print ink and religious artifact craftspeople would likely be interested in the invention, but they are not at risk of infringing the patent. Those most at risk of infringing the patent (Jewish scribes known as "sofers") should be the primary PHOSITA construction, and failure to consider the Jewish knowledge component unduly and negatively impacted the Shkedi family.

The Shkedis were three observant Jewish men who had developed a product for use in the Jewish community.²²⁵ Using their community language standards, they attempted to describe their invention to meet the standards of the USPTO.²²⁶ Once sorted into the religious artifact and print ink art units, the examiner judged the validity of their disclosure without Jewish religious vocabulary in mind.

The examiner decided whether the invention was described sufficiently such that a PHOSITA of general religious artifacts or print ink could make and use the invention without undue experimentation.²²⁷ The examiner determined that, despite the specification including a definition of kosher as "in compliance with the tenet of Jewish religious law,"²²⁸ a PHOSITA would still not understand the term "kosher" as it has no precise, standard definition.²²⁹ The examiner denies

²²⁵ See Telephone Interview with Eliran Shkedi, supra note 219.

²²⁶ See generally U.S. Patent Application Serial No. 12/121,025 (filed May 15, 2008).

²²⁷ See Non-Final Rejection dated Mar. 2, 2011, supra note 198, at 2.

²²⁸ See U.S. Pat. App. No. 12/121,025, at 2.

²²⁹ See Non-Final Rejection dated Mar. 2, 2011, supra note 198, at 2.

the inventor's reality—that the word kosher is used in daily life and known to the relevant community.²³⁰

There are two possible reasons for this outcome. First, the examiner may be confined by the boundaries of current legal standards. The requirements under 35 U.S.C. § 112(a) are: (1) to enable *any* person in that art unit to make and use the invention without undue experimentation; and (2) to sufficiently include a written description of the invention.²³¹ In other words, despite the importance of a particular religious background to the innate comprehension and general use of the invention, one interpretation of the law is that the USPTO requires a description of the kosher scroll to be clear to people without this background knowledge.

At best, the examiner is showing that there is a cultural language lacuna (or lexical gap) in the examination process.²³² A lexical gap happens where one language lacks a word that exists in another language.²³³ Patent prosecution at the USPTO is conducted in English, and if a word exists in the inventor's vernacular but not in English, the inventor is forced to define the word so that a native English speaker would understand the word. If on the other hand, the word exists in English and the applicant is using the common language definition of the word in their patent application, the applicant does not need to offer a definition.²³⁴

A cultural language lacuna goes one step further. The term "kosher" is not a Hebrew word. It derives from the Hebrew word "kasher" meaning "to be pure."²³⁵ The term "kosher" is used in common parlance in English-speaking Jewish communities—and even Urban Dictionary defines the term as "legitimate."²³⁶

²³³ See Latipov Sherzod & Kosimov Abdulkhay, *Examples for Lexical Gaps in English*, 3 ANALYTICAL J. EDUC. & DEV. 160, 160 (2023).

²³⁴ See Mark A. Lemley, *The Changing Meaning of Patent Claims Terms*, 104 MICH. L. REV. 101, 102 (2005) (noting Supreme Court's recognition that common understanding of the English word "bridge" changed after introduction of railroad bridges). The PHOSITA understands the plain meaning of a word.

²³⁵ Ansley Hill, *Kosher Food: Everything You Need to Know*, HEALTHLINE, https://www.healthline.com/nutrition/what-is-kosher#definition [https://perma.cc/SJP4-8JYN] (last updated Apr. 7, 2023).

²³⁶ *Kosher*, URB. DICTIONARY (DEC. 11, 2016), https://www.urbandictionary.com/ define.php?term=kosher [https://perma.cc/BJ5B-EYMQ] (defining "kosher" as "[t]o be genuine and/or legitimate" and offering hypothetical use as "[s]he consulted lawyers to make sure everything was kosher").

²³⁰ See id.

²³¹ See 35 U.S.C. § 112(a).

²³² This parallels other areas of intellectual property law, such as copyright, where copyright protection is an ineffective incentive system to produce works in languages "spoken predominantly by poor people." Lea Shaver, *Copyright and Inequality*, 92 WASH. U. L. REV. 117, 117 (2014).

Although many who do not have significant knowledge of Jewish communities only associate the term "kosher" with food, those familiar with Jewish culture understand the word to be much more broadly applicable.²³⁷ This is a cultural language lacuna: someone (whether the examiner or a constructed PHOSITA) did not have the requisite learned vocabulary to fully understand how kosher applied to the invention at hand, even if the inventors and a person in the Jewish community likely would have filled that language gap. If a Jewish cultural language component was factored into a vocabulary construction, this written description rejection may not have occurred.

Without being able to use the term "kosher," the applicants had to resort to other descriptors to explain the uniqueness of their invention. For seven years, the applicants had to resort to a thesaurus-type method of finding other similar words to substitute for the all-encompassing term "kosher."²³⁸ This path, however, led to an enablement rejection.²³⁹ Despite a clear recipe for ink in the specification, the examiner alleged that a PHOSITA would not be able to create the ink as claimed without undue experimentation.²⁴⁰

The average person in printing art is likely familiar with a wide variety of printing mediums, from inkjet printers to screen printing to fountain pens. They have a breadth of knowledge for techniques and mechanisms to print material. A sofer has a depth of knowledge in one particular specialty—hand-written products on a kosher parchment scroll.²⁴¹ Specialization within a small subject matter allows for greater expertise within that subject matter but likely minimizes expertise in tangential areas. According to my interview with one of the inventors, the average person working in printing art in the United States likely could not make the ink in the patent application without undue experimentation, but a sofer's expertise might enable them to do so.²⁴²

The Shkedi's rejected application is not the only example of the USPTO interpreting a religious term as indefinite. The USPTO has rejected an application directed to Shari'ah-compliant financial practices because a person skilled in the art would not have understood the term "Shari'ah,"²⁴³ as well as an application directed to "kosher casein polypeptide" because "the concept of kosher animals is vague and may differ from region to region of the world."²⁴⁴

²³⁷ See, e.g., U.S. Patent Application Serial No. 12/121,025, at 2 (filed May 15, 2008) ("The term 'kosher' can apply to a material, to the geometrical shape of a written Hebrew letter, to the status of an entire scroll, and to an artifact which includes a scroll.").

²³⁸ See, e.g., Appeal Brief - Patent, supra note 209, at 21.

²³⁹ See Non-Final Office Action dated Sept. 24, 2014, supra note 215, at 4.

²⁴⁰ See id.

²⁴¹ Sofer: The Torah Scribe, CHABAD.ORG, https://www.chabad.org/library/article_cdo/ aid/339595/jewish/Sofer-The-Torah-Scribe.htm (last visited Apr. 13, 2025).

²⁴² See Telephone Interview with Eliran Shkedi, supra note 219.

²⁴³ See, e.g., Non-Final Office Action dated July 23, 2007, U.S. Pat. App. No. 11/083,844, at 2.

²⁴⁴ Non-Final Office Action dated June 15, 2012, U.S. Pat. App. No. 12/649,489, at 3.

The burden for enablement is not to provide sufficient description to the average person within the art unit. The applicants must enable "*any* person skilled in the art to which it pertains"²⁴⁵ to fulfill the requirement. This—in this case—is any person skilled in the printing arts, including those not familiar with Jewish rituals. At the same time, if the examiner perceives that the vast majority of those skilled in the art have a particular depth of cultural knowledge—a perception which is likely biased by the examiner's personal knowledge²⁴⁶—this information will likely be included in the initial knowledgebase construction (similar to prior art construction above) and the applicant will not be required to provide further explanation.

The Shkedi's case highlights a potentially unfair burden borne by those whose cultural capital is not accounted for in their invention's assigned art unit. First, like the hair sponge case above, there exists no mechanism to change an unsuitable art unit.²⁴⁷ Although the religious artifact art unit likely encompasses kosher ink, the broad unit certainly is not as specific as other art unit classifications, like the rosary bead art unit.²⁴⁸ Moreover, the applicant must now

²⁴⁵ 35 U.S.C. § 112(a) (emphasis added).

²⁴⁶ See Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 855, 888 (2004) (referencing a patent examiner's technological skill as proxy for "tacit knowledge").

²⁴⁷ See Terri Shieh-Newton & Mark D. Hammond, Examining Art Units to Avoid Subject Matter Eligibility Challenges for Bioinformatics and AI-Related Patents, MINTZ (Nov. 18, 2021), https://www.mintz.com/insights-center/viewpoints/2231/2021-11-18-examining-artunits-avoid-subject-matter-eligibility# [https://perma.cc/8SLH-C6ZU]. Unlike the hair sponge, the scroll was categorized "correctly" in the religious artifact art unit (428/3). However, this category has a distinctly Christian overtone, with a full title of "religious artifact (e.g., cruciform, etc.)." USPTO, CLASS 428 STOCK MATERIAL OR MISCELLANEOUS ARTICLES 1 (2011), https://www.uspto.gov/web/patents/classification/uspc428/sched428.pdf [https://perma.cc/L36L-4N2M]. Examiners looking in this classification are, at best, familiar with all types of religions-not just Judaism specifically-and likely construct their evaluations accordingly. Many skilled in religious artifacts do not have particularly advanced knowledge in Jewish artifacts. At worst, the knowledge of the average person in 428/3 carries the same amount of religious knowledge as the average religious person in the United Stateswhich is, generally, little by way of Jewish practices. It is unlikely that someone in power (with majority cultural capital) would recognize the implicit Christian bias in this art unit at least to the point where they would suggest an alternate classification or a subclassification for a specific religious group. More religious subcategories may be appropriate, especially since there is already an art unit for rosary beads (CPC A44C 23/00). See USPTO & EUR. PAT. OFF., supra note 17.

²⁴⁸ See USPTO & EUR. PAT. OFF., *supra* note 17. In the rosary bead art unit, a PHOSITA has ordinary knowledge of rosary beads. This is not just a jeweler—this PHOSITA likely has a depth of knowledge concerning religious terms in religions that use rosary beads. Non-rosary bead religious inventions, however, do not get a PHOSITA with this cultural depth of knowledge. This disparate "fit" for inventions deriving from minority cultural capital and inventions deriving from privileged cultures (or at least cultures with features well recognized and understood by those holding only majority capital) should be recognized.

compose their patent application to explain to any person skilled in their eventually sorted art unit how to make and use their invention without undue experimentation. They are not allowed to add further definitions or clarifications if the examiner's construction lacks cultural knowledge, because applicants cannot amend the specification to add new matter after filing the application.²⁴⁹ Even if they submitted a declaration attempting to include a cultural education component, and even if the examiner allowed the revision, this still represents one more step that an applicant whose invention relies on majority cultural capital likely does not bear and a power dynamic imbalance that an applicant whose invention relies on face.

III. REMEDYING SYSTEMIC INJUSTICE

Current methodologies regarding the subject matter classification system, the enablement and written description examination process, and the prior art search all have potential to disparately impact innovators. Some innovators are overlooked, while others are misunderstood throughout the process. All these issues center around one fundamental theme: inequality.

Those at the patent office are ignoring important aspects of the inventive process. Firstly, the structure of patent prosecution, especially in the art unit formulation, can ignore minority, nonacademic cultural capital traits essential to defining the invention. Second, the USPTO and patent practitioners' prosecution process under this structure—specifically the prior art searching and the § 112 evaluation—can augment this minority trait void, rather than reduce it—by requiring additional explanation of knowledge not shared by the examiner or the constructed PHOSITA.

People currently working at the USPTO are, in general, ill-fitted to fixing these problems. The USPTO only hires engineers and scientists as examiners, due in part to the narrow construction of a perceived inventor's relevant characteristics.²⁵⁰ These examiners often get promoted to USPTO administrative positions. The scholarly education-biased construction of the patent prosecution process did not arise out of thin air; it naturally evolved from the common backgrounds of those working at the patent office. Moreover, when an inventor asks for a supervisor to review an application in addition to the primary examiner, they will usually seek out (and find) someone who is more adept at understanding the patent application's subject matter. However, in the contexts above, the best person to review the application is likely someone who shares

²⁴⁹ 37 C.F.R. § 1.121(f) (2024) ("*No new matter*. No amendment may introduce new matter into the disclosure of an application.").

²⁵⁰ See, e.g., Kathi Vidal, *Quality U.S. Patents Drive Our Economy and Solve World Problems*, USPTO (Dec. 9, 2024, 10:00 AM), https://www.uspto.gov/blog/quality-uspatents-drive-our-economy-and-solve-world-problems [https://perma.cc/9JAR-LPSR] ("We must and do hire and retain the most talented engineers, technology experts, and scientists."). I will explore this concept further in a future work.

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cultural capital with the inventor—and those with minority cultural capital are found in greater numbers in nonsupervisory roles.

Overall, those who are currently entrenched in this system are unlikely to make it more equitable. Although it is possible to recognize and fix inequitable gaps that do not apply to your culture and your community, this is an incredibly difficult endeavor. To create a more well-rounded prosecution process, the structural and performance-based issues in patent prosecution must be addressed at a systemic level.

This Section offers both small and visionary changes to create systemic and structural change at the USPTO. To ensure that any adopted reforms are evidence-based, I recommend conducting a data-driven assessment—ideally prior to implementation-to: (1) quantify existing cultural equity gaps in patent law and (2) determine whether the proposed changes are likely to mitigate those gaps. I recognize that the potential of adding more red tape and bureaucracy may create unintentional consequences, especially in an already complicated government agency. Further, I recognize that in the current American political landscape, and in other similar landscapes, the federal government is unlikely to adopt or support efforts to remedy systemic injustice for minority groupswhether in the USPTO or elsewhere.²⁵¹ In philosophy, ideal theory argues that "institutions are well ordered when they are just and known to be just."²⁵² There is no way to definitively know whether these improvements will definitively lead to a better system prior to implementation, but I emphasize the importance of making strides to attempt to correct injustices in our current patent prosecution system.

A. Who Makes Changes?

Systemic, structural change at the USPTO is not only possible, but it has successfully occurred recently. Although the USPTO has been in existence since the 1700s, the Office of the Chief Economist is a new addition.²⁵³ In 2010, the Office of the Chief Economist ("OCE") was established to pursue a research agenda in the role of intellectual property ("IP") in the economy, IP and technology standards, and the economics of USPTO initiatives.²⁵⁴ Comprising a core team of seven economist researchers, employees at the OCE research and advise on the "economic implications of policies and programs affecting the

²⁵¹ See Fact Sheet: President Donald J. Trump Protects Civil Rights and Merit-Based Opportunity by Ending Illegal DEI, WHITE HOUSE (Jan. 22, 2025), https://www.whitehouse.gov/fact-sheets/2025/01/fact-sheet-president-donald-j-trump-protec ts-civil-rights-and-merit-based-opportunity-by-ending-illegal-dei/ [https://perma.cc/CXB6-NKHU].

²⁵² Gopal Sreenivasan, *What Is Non-Ideal Theory?*, *in* TRANSNATIONAL JUSTICE 233, 233 (Melissa S. Williams, Rosemary Nagy & Jon Elster eds., 2012).

²⁵³ Stuart J.H. Graham & Galen Hancock, *The USPTO Economics Research Agenda*, 39 J. TECH. TRANSFER 335, 335-36 (2013).

²⁵⁴ See id.

United States intellectual property system."²⁵⁵ The OCE has worked to disseminate patent and trademark data, research diversity, equity, and inclusion ("DEI") and economic issues, and conduct economic analysis on IP issues.²⁵⁶ Their free and publicly accessible research datasets²⁵⁷ have provided tremendous opportunities for research and improvement in economic outcomes at the USPTO.

In the short term, the USPTO should partner with museum professionals and existing government entities like the Advisory Council on Historic Preservation,²⁵⁸ the National Endowment for the Humanities,²⁵⁹ or the National Education Association²⁶⁰ to help assist the U.S. patent system to implement a more holistic and equitable examination process. This should start with examining issues of disparate treatment of inventions meant to help women, people of color, those belonging to a minority religious group, and other marginalized populations. Through this examination, we can attempt to quantify disparate impact for certain inventions and inventors, as well as how to close any determined impact gap.

In the long term, and especially to ensure that the USPTO does not overburden these other agencies, I propose that the USPTO establish a second small, DEI-focused group like the OCE. What the OCE has done for economic research in patents can and should be duplicated with a parallel office examining DEI initiatives. To make a significant difference in the application and construction of U.S. patent law, the USPTO employee force must diversify both in purpose and in background.²⁶¹

My call to add a DEI-focused group at the USPTO to incorporate a cultural analysis in patent prosecution is not entirely novel. The Intellectual Property Office of New Zealand ("IPONZ") gives special consideration "around the use and registration of intellectual property that contains an element of Māori

²⁵⁸ See generally ADVISORY COUNCIL ON HISTORIC PRES., https://www.achp.gov/ [https://perma.cc/2S33-TM7Y] (last visited Apr. 13, 2025).

²⁵⁹ See generally About the National Endowment for the Humanities, NAT'L ENDOWMENT FOR THE HUMANS., https://www.neh.gov/about [https://perma.cc/8PJY-CJSG] (last visited Apr. 13, 2025).

²⁶⁰ See generally NAT'L EDUC. ASSOC., https://www.nea.org [https://perma.cc/59LL-6UBZ] (last visited Apr. 13, 2025).

²⁶¹ This aligns with the work of Sarah Fackrell, arguing that the technical IP Bar requirement disadvantages women and people of color. *See* Britain Eakin, *Technical IP Bar Requirements Needless, Panelists Say*, LAW360 (Nov. 10, 2022, 6:36 PM), https://www.law360.com/articles/1546419/technical-ip-bar-requirements-needless-panelists-say.

²⁵⁵ Office of the Chief Economist, USPTO, https://www.uspto.gov/aboutus/organizational-offices/office-policy-and-international-affairs/office-chief-economist [https://perma.cc/A4FD-ZM2N] (last updated Feb. 10, 2025, 3:35 PM).

²⁵⁶ Id.

²⁵⁷ See, e.g., Patent Search, PATENTSVIEW, https://patentsview.org/ [https://perma.cc/ L7JC-D68Q] (last visited Apr. 13, 2025).

culture."²⁶² The IPONZ recognizes that traditional knowledge may not be patentable, but commercial benefits that derive from this knowledge should be given in a balanced way to acknowledge this contribution.²⁶³ Although the Patents Māori Advisory Committee seems to be primarily concerned with whether patenting an invention would offend those who are Māori,²⁶⁴ the simple act of considering cultural aspects of an invention puts the New Zealand system far ahead of the U.S. patent system in terms of cultural incorporation.

This goes further than a race-based or gender-based hiring or retention plan: The USPTO is already one of the most diverse workforces in patent law by both gender and race.²⁶⁵ The USPTO should consider hiring professionals in cultural understanding and perception. Sociologists and anthropologists could work alongside scientists and engineers to address the systemic cultural issues permeating the USPTO. Coupled with modifications to current practices in the patent prosecution process, this department would be developed to add diversity of thought and expertise in cultural education necessary to make patent prosecution more equitable.

This parallels the structure of the World Bank, where anthropologists help to shape the institution by identifying projects to make societies more inclusive, cohesive, and accountable²⁶⁶ and "building social development concerns into the Bank's operational directives."²⁶⁷ Though certainly there are drawbacks in practice when adding in anthropologists, who can import their own biases, the overall advantage to having a department prioritizing equity at the USPTO outweighs this concern. The USPTO can add limitations in scope and authority, as discussed below, to address these concerns.

I fully recognize that the USPTO does not have unlimited funds to resolve the issues articulated in this paper. Yet, the government determined that it was important enough to invest in a research department to study economic issues at the USPTO in 2010 for the benefit of scholars, researchers, and inventors.²⁶⁸

²⁶⁵ *Cf.* Theresa Schliep, *Trump's DEI Cuts Threaten USPTO Innovation Goals*, LAW360 (Jan. 31, 2025, 1:26 PM) (describing past USPTO diversity initiatives).

²⁶² N.Z. INTELL. PROP. OFF., PROTECTING INTELLECTUAL PROPERTY WITH A MĀORI CULTURAL ELEMENT: USER GUIDE 2 (2016), https://www.iponz.govt.nz/assets/pdf/maori-ip/protecting-ip-with-a-maori-cultural-element.pdf [https://perma.cc/H2M4-W8L5].

²⁶³ See generally id.

²⁶⁴ See, e.g., *id.* at 5 (discussing how a prohibition on the registration of trademarks is likely to offend significant number of Māori community members).

²⁶⁶ David Mosse, Social Analysis as Corporate Product: Non-Economists/Anthropologists at Work in the World Bank in Washington, D.C., in ADVENTURES IN AIDLAND: THE ANTHROPOLOGY OF PROFESSIONALS IN INTERNATIONAL DEVELOPMENT 81, 82 (David Mosse ed., 2011).

²⁶⁷ *Id.* at 86.

²⁶⁸ USPTO, LAUNCHING THE USPTO ECONOMICS RESEARCH AGENDA (2010), https://www.uspto.gov/sites/default/files/ip/officechiefecon/BCLTUSPTOsummary.pdf [https://perma.cc/YJ9U-9XWN] (detailing the unveiling of the new Office of the Chief Economist's economic research agenda).

DEI research stands to provide similar benefits and, as a consistently fully funded office that does not rely on taxpayer funding, the USPTO can afford to invest in DEI research.²⁶⁹ This research spending should be tempered by the predicted efficiency and quality of a resulting patent prosecution proceeding, and I address the three pillars of money, time, and quality in each of my proposals herein.²⁷⁰

Further, in a 2019 hearing before the Senate Committee on the Judiciary Subcommittee on Intellectual Property, Melissa Wasserman demonstrated that spending significantly more money in examination (approximately \$660 million) would save money on later litigation expenses and overall prosecution costs.²⁷¹ Just because a program costs money does not mean that the program will end up creating a debt on the system it is enacted upon. Moreover, even if all calculations were incorrect and these programs would end up costing the USPTO money, the government should be able to allocate some of its resources to improve equity in society. Pursuit of equity is a worthy investment.

The complicated, biased patent prosecution process stems from many factors outside the control of the USPTO and those factors should be addressed in their appropriate forums. Here, I will discuss what is in control of the USPTO. Specifically, I will address the classification and prosecution process with respect to equitable inclusion of cultural capital.

Though these proposals are meant to resolve systemic issues in patent prosecution, these changes will carry through to litigation. By creating a record of classification methodology, actively engaging with the PHOSITA construction, and clearly articulating disagreements, the final granted patent will not only retain its presumption of validity in litigation, but the record will be clearer and more equitable for court proceedings.²⁷²

B. Category Theory and Revising the Classification System

At its core, the art unit classification system sets the tone for the prosecution process.²⁷³ The art unit assignment dictates the examiner who will be reviewing

²⁶⁹ See Budget and Financial Information: Congressional Budget Justifications: Fiscal Year 2025 USPTO Budget, USPTO, https://www.uspto.gov/about-us/performance-andplanning/budget-and-financial-information [https://perma.cc/C497-SJ8J] (last updated July 8, 2024, 12:17 PM).

²⁷⁰ Vivek Madurai, *Quality, Time and Money*, MEDIUM (Mar. 25, 2018), https://medium.com/@vivekmadurai/quality-time-and-money-39278f990092 [https://perma.cc/ASC8-EE3R].

²⁷¹ Promoting the Useful Arts: How Can Congress Prevent the Issuance of Poor Quality Patents?: Hearing Before the Subcomm. on Intell. Prop. of the S. Comm. on the Judiciary, 116th Cong. 24 (2019) (statement of Melissa F. Wasserman, Professor of Law, University of Texas School of Law).

²⁷² Mark D. Janis, *Reforming Patent Validity Litigation: The "Dubious Preponderance,"* 19 BERKELEY TECH. L.J. 923, 924 (2004).

²⁷³ See Shieh-Newton & Hammand, *supra* note 247 (instructing applicants to "consider an art unit to avoid prosecution landmines down the road").

the application for obviousness, written description, and enablement.²⁷⁴ Although examiners are actively discouraged "from relying on their own technological skill in evaluating inventions,"²⁷⁵ their biases and world view will still influence how they see an invention and proceed through the patent prosecution process. Even if they can divorce their lived experience biases in the patent prosecution process, the examiner still uses the classification system as a primary means of prior art searching and contextualizing the expertise of the PHOSITA. Amending the classification system under the supervision of trained anthropologists and sociologists to better account for inventions derived from minority cultural capital may represent an important step towards making the patent prosecution process more equitable.

Ten years ago, the USPTO worked with the European Patent Office to launch the Cooperative Patent Classification ("CPC") system.²⁷⁶ Soon after, the China National Intellectual Property Administration and the Korean Intellectual Property office both adopted this new system.²⁷⁷ This added about 100,000 new subdivisions to patent coding, but it did not fix the Western biases in the original U.S. Patent Classification ("USPC") system.²⁷⁸ For example, not only is there an art unit for rosaries (A44C 23/00), there are also ones for crosses and crucifixes for personal wear (A44C 25/00) and for artificial Christmas trees (A47G 33/06).²⁷⁹ However, all other religious or ritual equipment is categorized into a catch-all category of A47G 33/00.²⁸⁰ Even the one group that mentions kosher (A22B 3/12—kosher slaughtering devices) has a definitional statement that includes all religions, saying that the subdivision covers "kosher, halal and other ritual slaughtering devices."²⁸¹

Although the CPC scheme did have the potential to be more equitable with the addition of 100,000 subdivisions, the outcome appears to be a system further entrenched in biases towards majority culture. The system was built without

²⁷⁴ Id.

²⁷⁵ Eisenberg, *supra* note 246, at 888 (citing *In re* Lee, 277 F.3d 1138, 1345 (Fed. Cir. 2002)).

²⁷⁶ GOODBODY, *supra* note 36, at 1.

²⁷⁷ Id.

²⁷⁸ Heather J.E. Simmons, *Categorizing the Useful Arts: Past, Present, and Future Development of Patent Classification in the United States*, 106 LAW LIBR. J. 563, 573 (2014).

²⁷⁹ USPTO & EUR. PAT. OFF., A47G: HOUSEHOLD OR TABLE EQUIPMENT (2025), https://www.uspto.gov/web/patents/classification/cpc/pdf/cpc-definition-A47G.pdf [https://perma.cc/LAX3-QY5J].

²⁸⁰ USPTO & EUR. PAT. OFF., COMPILATION OF CHANGES TO THE CPC SCHEME BETWEEN 2016.08 AND 2016.11, at 115 (2016), https://www.uspto.gov/web/patents/classification/cpc/compilations/cpc-compilation-201611-by-project.pdf [https://perma.cc/SS24-8L5L].

²⁸¹ USPTO & EUR. PAT. OFF., A22B: SLAUGHTERING 4 (2016), https://www.uspto.gov/web/patents/classification/cpc/pdf/cpc-definition-A22B.pdf [https://perma.cc/8HQV-N6DV].

consideration for minority cultural capital.²⁸² With international patent prosecution systems increasingly relying on this globalized classification system, we should be even more careful to not impose only majority worldviews and inventive views onto the patent system.

If a system is built without consideration of a certain trait, the system will likely only equitably address that trait by fluke. For example, if someone was given a group of blocks and told to sort those blocks by color, the only reasons why the blocks would also be sorted by weight would be if: (1) the color of the block corresponded to the weight of the block; (2) the person developing the system recognized the utility of using weight as a secondary means of sorting, independent of the instructions given; or (3) by pure random chance, the sorting choice correlated to the weight of the block.

Humans do not categorize objects with one uniform process.²⁸³ However, whether using category-defining rules or grouping similar items with previously encountered items,²⁸⁴ past cultural exposure likely influences future sorting processes. Either partnering government agencies or my newly proposed USPTO subgroup (called the Department of Culture or "DOC") could explore a new categorization system—or at least implementing new categories—to counter the past cultural exposure biases from both the original art unit category developers and the examiners who will apply the categorization when examining an application.

There are many ways to reform the current art unit classification system, with some being significantly more disruptive and time consuming than others. In the short term, I propose adding subclassifications to art units with inventions reliant on minority cultural capital. More art units, however, will not create a long-term solution—and I fear that art unit expansions may create an illusion that the problem is solved. Moreover, it may be impossible to create cultural-specific art units without excluding some cultures from the process. In the long term, the USPTO should evaluate the basic categorization structure and suggest large-scale reformations to make categorization more equitable. They can explore assignment of examiners to art units, such that the background of examiners can better match both the cultural and academic components of inventions submitted to the art units.²⁸⁵

Development of a better art unit classification system would likely benefit inventors like Boyd and Gopou (inventors of the hair sponge) and the Shkedi family (inventors of the kosher scroll) by ensuring that their applications are

 $^{^{282}\,}$ The structure of sorting systems that further entrench colonialist norms will be explored in a future work.

²⁸³ Edward E. Smith, Andrea L. Patalano & John Jonides, *Alternative Strategies of Categorization*, 65 COGNITION 167, 168 (1998).

²⁸⁴ *Id.* at 169.

²⁸⁵ I will address examiner training and cultural education in a future paper.

reviewed with cultural capital.²⁸⁶ This reimagining of the classification system may mean that inventors have a harder or easier time obtaining a patent than they would in the current system. The argument herein is not to improve the minority representation of inventors as patent applicants; the point instead is to ensure that all inventors are treated equitably for their inventive contributions, whether derived from majority or minority cultural knowledge.

I recommend that the USPTO either partners with existing cultural organizations or uses a newly developed internal department to use their expertise to assess which art units are more likely to disparately impact those inventing from minority cultural capital. I propose revising the classification system to better account for this potential disparate impact, starting with the addition of subcategories which incorporate cultural capital into their classification. A larger reconfiguration of the sorting system could leave a space for inventions deriving from minority cultures and develop prioritization of using cultures as a necessary classification.

In the meantime, I hypothesize that inventions deriving from minority cultural capital are improperly sorted into art units more frequently than inventions deriving from majority cultural capital. With the addition of the DOC or other partnering government agencies, I propose the addition of an art unit review process for inventions deriving from minority cultural capital to test this hypothesis.

Eventually, when inventors submit an application, the USPTO may introduce a checkbox, which would indicate that the invention relies on nonacademic cultural capital and the inventor would like this to be part of the evaluation process.²⁸⁷ The DOC could then review the document and either provide a cultural supplement to the examiner to help assist in examination or be on call to assist an examiner before an office action is sent to the applicant in an attempt to reduce racist or improper rejections.

If rejected, the applicants could write an appeal explaining why they believe their invention is better suited to a different art unit, much like the current appeal process for rejections during prosecution. They might even use support from international classifications when available. If those working for the classification process became overwhelmed, the examiner could respond to this appeal either by: (1) agreeing with the applicant that, in light of the explanation,

²⁸⁶ Goodman & Patterson, *supra* note 31, at 136-49 (discussing how Boyd and Gopou's invention was misclassified as sanitary equipment); *see* U.S. Patent Application Serial No. 12/121,025 (filed May 15, 2008) (detailing new invention of a kosher scroll and ink).

²⁸⁷ This is particularly important when the inventor uses phrases from their minority cultural capital lexicon to describe their invention and when the inventor is unsure if those familiar only with majority cultural capital would be able to understand their description. This does not necessary absolve the inventor of their responsibility to create a readable, understandable patent application, but rather indicates to the USPTO that the application may deserve closer scrutiny before rejecting on enablement or indefiniteness grounds. I also expect that use of this box may lead to abuse by some bad actors, but a pilot program is well worth exploration.

the application deserves to be in a different art unit, or (2) disagreeing with the applicant and showing their art unit has handled similar inventions in prior years. The DOC could evaluate this appeal and determine whether the application should move to a different art unit. The department should also be careful to distinguish applicants who are trying to move art units because of misclassification and those who are trying to move art units because one might have a more favorable allowance rate.²⁸⁸ The DOC could also keep records of allegations and determinations of improper classification to help improve classification in the future.

To be clear: Sociologists and anthropologists can and will introduce their own biases into this process. No one should fully replace the examiner as the final arbiter of overcoming the subjective gaps in the patent prosecution process, and no one should fully control the definitional scope of culture or cultural artifacts within race, religion, or ethnicity. However, the DOC's assistance with highlighting a potential cultural bias could greatly improve the patent prosecution process for some inventors.

C. Counting Culture: The Checkbox for Enablement and Written Description

Even with classification system reforms, the enablement and written description standards may still fall short of the goal of equitable enforcement. Classification remedies will not be able to proactively close every cultural hole within the system. The USPTO should consider revising how applications are evaluated for enablement and written description as another safeguard against inequitable patent prosecution.

When evaluating a patent application for enablement and written description, § 112 does not require that the applicant explains the invention sufficiently to a person having *ordinary* skill in the art.²⁸⁹ The enablement and written descriptions require that *any* person of skill in the art be able to make and use the invention without undue experimentation.²⁹⁰ This art could be defined in the context of the patent application itself—and likely is defined as such during litigation. However, during prosecution, the art unit classification is especially relevant to the "any person of skill in the art" construction.²⁹¹ Therefore, examiners within these art units must be especially vigilant to ensure that they are equitably applying standards across all patent applications.

During the enablement and written description evaluation, as shown above, the examiner constructs the PHOSITA with the art unit in mind. The applicant describes the invention as sufficiently as possible and, after submission, has no further control over art unit and PHOSITA construction. If the PHOSITA is constructed such that all necessary cultural capital is already accounted for in the art unit, then the enablement and written description evaluation process will

²⁸⁸ Underhill, *supra* note 41.

²⁸⁹ 35 U.S.C. § 112.

²⁹⁰ Id.

²⁹¹ Id.

proceed equitably. If the PHOSITA does not have all necessary cultural capital embedded in its construction, some applications in the art unit may be treated differently than others.

The example of the kosher scroll patent application highlights this predicament, and it serves as a template for the solutions proposed herein.²⁹² Some inventions are described such that a PHOSITA with certain cultural knowledge could make and use the claimed invention without undue experimentation, but the PHOSITA without that cultural knowledge might not have the same success rate. If the PHOSITA had knowledge about the term "kosher" and was not fully reliant on the specification for a definition, the applicants may not have received a rejection calling the term "indefinite."²⁹³ That is because the PHOSITA would have had the necessary education—or cultural capital—to fully comprehend the word in the context of the application. Furthermore, if the PHOSITA was a person skilled in the art of print ink, the applicants may not have received an enablement rejection because the PHOSITA may have had additional cultural capital education necessary to avoid the undue experimentation to create the claimed ink.²⁹⁴

Religious cultural capital is accounted for in some CPC art units, such as the art units for rosaries (A44C 23/00) and crosses and crucifixes for personal wear (A44C 25/00), but this parallel does not extend much past Christianity for the current art unit classification system.²⁹⁵ This can create a greater burden for applicants whose inventions rely on minority cultural capital to explain their inventions to a PHOSITA lacking that cultural knowledge.

Although I strongly encourage restructuring the patent classification to better account for these disparities, I also recognize that such an endeavor will take a significant amount of time, money, and other resources to accomplish.²⁹⁶ Furthermore, such construction is fallible and leaves open avenues for abuse. To counteract this, the USPTO must encourage avenues where applicants are able to assert the value of their cultural capital to the evaluation of their invention.

The USPTO does not need to reinvent the wheel for applicants to be able to fully express their viewpoint and pushback on written description and enablement rejections. The USPTO must first examine internal trainings to ensure examiners actively engage in a PHOSITA construction, rather than rely on the art unit sorting as the primary indicator of the PHOSITA traits.

After an initial PHOSITA determination, the applicants and examiner can still engage in a discussion to define a PHOSITA with cultural traits. For example,

²⁹² See U.S. Patent Application Serial No. 12/121,025 (filed May 15, 2008).

²⁹³ See Non-Final Rejection dated Mar. 2, 2011, supra note 198, at 2.

²⁹⁴ Non-Final Office Action dated Sept. 24, 2014, *supra* note 215, at 4.

²⁹⁵ See, e.g., USPTO & EUR. PAT. OFF., *supra* note 17, at 47 (rosaries); *supra* notes 279-81 and accompanying text.

²⁹⁶ Creating additional art units or removing the culture-specific art units are both potential remedies.

the applicant can submit an oath or declaration to provide evidence to traverse any rejection or objection.

37 C.F.R. § 1.132 states that an applicant can submit an oath or declaration (called an affidavit or declaration)²⁹⁷ accompanying evidence "to traverse the rejection or objection" of claims in a patent application.²⁹⁸ These affidavits are usually submitted to combat allegations of obviousness.²⁹⁹ For example, the applicant can submit information to show how the patent application claims are directed to unexpected results,³⁰⁰ commercial success,³⁰¹ or the long-felt need and failure of others.³⁰² The applicant cannot introduce new matter to the disclosure of the invention,³⁰³ but the applicant can show additional information, such as factual evidence or the declarant's opinions to the examiner in an affidavit for persuasive purposes.³⁰⁴

According to current practices, the examiner must address the affidavit in the next office action. The examiner can either explain why the evidence (in light of the totality of the patent portfolio) is insufficient to overcome the rejection,³⁰⁵ or why the added evidence is sufficient to overcome the rejection.³⁰⁶

The Manual of Patent Examining Procedure ("MPEP") addresses that affidavits can be used in a similar manner to overcome an enablement rejection. Similar to obviousness rejections, "once the examiner has established a *prima facie* case of lack of enablement, the burden falls on the applicant to present persuasive arguments . . . that one skilled in the art would have been able to make and use the claimed invention using the disclosure as a guide."³⁰⁷ However, the procedures described for overcoming an enablement rejection with an affidavit—unlike guidance for overcoming an obviousness rejection—are likely insufficient to overcome the disparate treatment suffered by inventors relying on minority cultural capital.

Current guidance states that "[a]ffidavits or declarations presented to show that the disclosure of an application is sufficient to one skilled in the art are not acceptable to establish facts which the specification itself should recite."³⁰⁸ It further explains that "[a]ffidavits or declarations purporting to explain the

²⁹⁸ Id.

³⁰⁴ Witz, *supra* note 297, at 12-13.

²⁹⁷ JEAN WITZ, AM. INTELL. PROP. L. ASS'N, 37 CFR § 1.132 PRACTICE 4 (2019), https://www.aipla.org/docs/default-source/committee-documents/bcp-files/jwitz_132d.pdf [https://perma.cc/MW56-NT6W].

²⁹⁹ See MPEP §§ 716.02-.04 (9th ed. Rev. 1, Jan. 2024).

³⁰⁰ Id. § 716.02(a)-(g).

³⁰¹ *Id.* § 716.03(a)-(b).

³⁰² *Id.* § 716.04.

^{303 35} U.S.C. § 132.

³⁰⁵ MPEP § 716.01.

³⁰⁶ *Id.* § 1302.14.

³⁰⁷ Id. § 716.09 (citing In re Brandstadter, 484 F.2d 1395 (C.C.P.A. 1973)).

³⁰⁸ Id. (citing In re Buchner, 929 F.2d 660 (Fed. Cir. 1991)).

disclosure or to interpret the disclosure of a pending application are usually not considered."³⁰⁹ Not only is most of the guidance for enablement affidavits written in the negative—saying what the affidavit cannot do, rather than what the affidavit can do—but the guidance does not address any issue regarding the applicant's right to protest the examiner's PHOSITA construction.³¹⁰ Much like any other response at the USPTO, applicants should be able to provide supplemental information showing that, with the appropriate cultural context, the PHOSITA would be able to overcome the written description and enablement barriers facing someone without the necessary cultural background.

First, the applicant should be able to argue that the PHOSITA would have access to knowledge stemming from minority cultural capital. For example, the applicants in the kosher scroll case should be able to submit an affidavit arguing that the PHOSITA has some knowledge of Jewish culture and, specifically, about Jewish writing. The applicants could then submit sources explaining what that baseline knowledge would look like, both in terms of vocabulary and documented training necessary to reach that level of skill. Then, the affidavit could address how, even if everyone skilled in the print ink art unit does not have this education, the PHOSITA does have this education and is capable of applying the education to the specification at hand.

The examiner may not have the training necessary to fully evaluate the contents of this affidavit. After all, the examiner has been working in the print ink art unit; the Jewish printing art unit does not exist. It would be improper for an examiner to fully evaluate the contents of this application and decide if "one skilled in the art would have been able to make and use the claimed invention using the disclosure as a guide"³¹¹ with only the current training proceedings at the USPTO.

This can be remedied in two ways. The first option is to provide guidance on how to evaluate affidavits supplementing the PHOSITA with cultural knowledge. However, with the current low efficacy rate of DEI programs,³¹² I do not recommend only using guidance to implement this expanded affidavit program.

Instead, I recommend either relying on existing government organizations (like the National Endowment for the Humanities or the National Education Association) or trained sociologists and anthropologists from the proposed DOC to help add additional commentary for these affidavits, in conjunction with the examiner. Although these supplementing entities will introduce their own biases, I hypothesize that working in tandem with these entities will counteract

³⁰⁹ Id. (citing In re Oppenauer, 143 F.2d 974 (C.C.P.A. 1944)).

³¹⁰ *Id.*

³¹¹ Id. § 716.09 (citing In re Brandstadter, 484 F.2d 1395 (C.C.P.A. 1973)).

³¹² See generally Frank Dobbin & Alexandra Kalev, *Why Diversity Programs Fail*, HARVARD BUS. REV., July-Aug. 2016, at 52, https://hbr.org/2016/07/why-diversity-programs-fail [https://perma.cc/TS9N-RYW7].

existing biases at the patent office and create a more balanced, culturally aware patent process.

During an examination process, an application might be assigned to an examiner with a range of experiences.³¹³ Some patent examiners are new (junior examiners), while others have had years of training and practice at the USPTO.³¹⁴ Junior examiners must get approval from a primary examiner or supervisory examiner ("SPE") before allowing a patent application.³¹⁵ Because of this, applicants must remember that they do not need to just persuade their patent examiner that the claims are patentable—they also sometimes need to persuade their supervisor.³¹⁶ Sometimes, if conversations with the examiner during patent prosecution are becoming unproductive, the applicant can ask to speak to a SPE alongside the examiner during an interview.³¹⁷ The SPE and the junior examiner speaking to the details of the application and examination process and the SPE evaluating paths forward through the lens of their experience.

A similar collaboration could be fostered between members of the proposed DOC and examiners at the USPTO. Examiners at the USPTO have a wealth of experience in evaluating the allowability of patent applications, as well as subject-matter specific experience relevant to the particular application at hand.³¹⁸ Members of the DOC would not necessarily share that experience—at least not at the outset—but would have experience in sociology and anthropology. Combining these different fields of expertise could help the USPTO to collaboratively evaluate an affidavit based on a cultural capital claim, as well as create guidance for the MPEP discussing how to file and argue such claims successfully.

Though the DOC would likely play a supportive role (rather than a primary, signatory role) in the affidavit evaluations, the DOC could play a primary role in evaluating allegations of culturally insensitive prosecution processes. When a person is treated inappropriately because of their race or religion in the workplace, they often seek out help from a human resources officer. If an applicant receives an inappropriate rejection—for enablement or otherwise—there is no equivalent assistance at the USPTO.

³¹³ Robert Lichter & Ryan Potts, *Patent Office Insights from Two Former Examiners*, IPWATCHDOG (July 21, 2020, 12:15 PM), https://ipwatchdog.com/2020/07/21/patent-office-insights-two-former-examiners/id=123414/ [https://perma.cc/QL6R-DBXE].

³¹⁴ *Id*.

³¹⁵ Id.

³¹⁶ Id.

³¹⁷ *High Level Overview of the Examiner Decision Making Process*, USPTO (Jan. 1, 2018), https://www.uspto.gov/sites/default/files/documents/Examiner_Decision_Making_Process_Highlevel.pdf [https://perma.cc/FFS5-3DHN].

³¹⁸ Lichter & Potts, *supra* note 313.

The kosher scroll example shows how an unintentionally biased thought can harm the patent applicant.³¹⁹ To say that a PHOSITA would not know what kosher means³²⁰ can be incredibly harmful to a patent applicant trying to convey the novelty and nonobviousness of their invention to a general audience, especially when other PHOSITAs likely have a similar type of cultural knowledge. Though the applicant continued to respond to the examiner's rejections, there should still be a system to catch or appeal insensitive rejections.³²¹

The patent prosecution process must be more culturally sensitive. The appeal process at the USPTO allows a patent applicant to appeal the examiner's decision to the PTAB if they do not believe the rejection was correctly decided.³²² The PTAB includes the USPTO Director, Deputy Director, Commissioner for Patents, Commissioner for Trademarks, and administrative patent judges.³²³ These judges receive technical and legal training,³²⁴ but do not necessarily have a background in anthropology or sociology. At this point, although the PTAB is fit to review current patent application disputes, the PTAB is not well-trained to review culturally insensitive rejections, nor do they have the means to issue decisions regarding cultural insensitivity alone.

The USPTO can enact a system for secondary review similar to an appeal process. Applicants could give notice for an appeal and explain why the examiner's rejection was improper. After the examiner has a chance to respond, the review board can either issue a public ruling or may choose to meet with the examiner to review their decision privately. This is not meant to be a public shaming. Most likely, if an examiner issued an inappropriate rejection, the examiner formulated the rejection from a place of naivety, not malice, and the incident should be treated accordingly.³²⁵ If the office action is found to be inappropriate, this secondary review can serve to resolve the dispute and educate the examiner to act differently in future cases.

Furthermore, I recognize that, due to imbalances in familiarity with the patent process, the examiner may be the first to recognize the need for a more culturally sensitive patent prosecution process for a particular application. In such case, the examiner may be racing against the clock, fearing that they may be penalized for taking the time necessary to understand the cultural aspects of the

³¹⁹ See generally U.S. Patent Application Serial No. 12/121,025 (filed May 15, 2008).

³²⁰ Id.

³²¹ Id.

³²² Appeals, USPTO, https://www.uspto.gov/patents/ptab/appeals [https://perma.cc/ Z8UG-FNFK] (last updated Sept. 17, 2024, 8:28 PM).

³²³ About PTAB, USPTO, https://www.uspto.gov/patents/ptab/about-ptab [https://perm a.cc/2CDX-ETL8] (last updated Jan. 16, 2025, 3:12 PM).

³²⁴ Id.

³²⁵ If the examiner is accused multiple times of inappropriate rejections, the examiner's actions should be investigated more thoroughly.

invention.³²⁶ The examiner should also be allowed to affirmatively reach out to the proposed DOC or a cultural expert to help supplement their knowledge, as well as request additional time, in order to better serve those seeking patent protection for their inventions.

D. Power to the People: Including Public Comment in Patent Prosecution

Patent application standards are based on a fictitious, but powerful, average person. For example, the obviousness standard is based on an average—a person having *ordinary* skill in the art.³²⁷ This art unit is selected from a predefined set of units which, as explained above, disparately account for cultural capital as an inherent and crucial aspect of the PHOSITA's construction. The current PHOSITA construction process theoretically gives this hypothetical person knowledge of everything "known publicly before the effective filing date" of the application,³²⁸ and then they use their ordinary skill in the art to attempt to combine these sources of knowledge to make the invention at hand. If they fail to do so, then the invention is considered not obvious.

Although the PHOSITA knowledgebase should comprise everything known publicly, this is an impossible standard to meet under current search procedures. The PHOSITA's knowledge standard only truly comprises written disclosures,³²⁹ in addition to any other information that might be provided voluntarily by the applicants. This means that the examiner disparately populates the PHOSITA's knowledgebase with written, publicly available disclosures that are intelligible to the examiner.

The examiner determines what is within the ambit of a fictional person's understanding and, from this decision, constructs an entire worldview of what is obvious to a person and what needs further explanation or what is perceived as new. Further, the process prioritizes written evidence over other types of evidence, disparately undervaluing communities who disseminate information through nonwritten means. To be more inclusive of minority cultural knowledge dissemination, this must change.

As described above, the reexamination process for the turmeric patent shows how painful it is for traditional knowledge to be erased from the PHOSITA construction. The original reexamination request shows how turmeric, referred to as *haldi* and *haridra* in the Indian subcontinent, has been used as a healing agent in Ayurvedic medicine since ancient times.³³⁰ Even though this was part

³²⁶ See, e.g., Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents? Evidence from Microlevel Application Data*, 99 REV. ECON. & STATS. 550, 550 (2017) (discussing time allocation for patent application review).

^{327 35} U.S.C. § 103.

³²⁸ USPTO, *supra* note 44, at 5.

³²⁹ Reilly, *Decoupling*, *supra* note 161, at 564.

³³⁰ Request for Reexamination of U.S. Patent No. 5,401,504, at 5 (Oct. 28, 1996) (on file with author).

of the traditional knowledgebase, testimonies from people using turmeric in India would not have been enough. Instead, the CSIR had to find and produce written references to substantiate their claim.³³¹ If left to stand as a granted patent, this ancient use of turmeric would have left India as part of "the 'common heritage of mankind' and return[ed] as [an] 'individually owned' commodit[y] for sale at prices" that would reduce access for many Indian citizens.³³² It is of the utmost importance to ensure traditionally, publicly available knowledge is factored into the patent prosecution process. With small changes to the current search and information gathering proceedings at the USPTO, the final

constructed PHOSITA has the potential to be a more well-rounded and

The first change to the search process should include changes to the available information for examiners. The USPTO could construct a fully reformed search process to be more inclusive of oral disclosures, global public use, and other difficult-to-find publicly available documentation. I expect the increasing sophistication of natural language processing,³³³ artificial intelligence,³³⁴ and translation tools³³⁵ will help examiners construct a more thorough search process than they could in 1995. However, these tools are not bias-free and should be used accordingly.³³⁶

Advanced search tools and recording devices can be implemented to search news reports, television shows, internet blogs, and other locally available media. If these are combined with translation tools, the resulting database would likely be more inclusive of inventions and knowledge in areas where traditional knowledge is likely relevant. The USPTO should balance this database construction with a robust interview process with communities working to

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knowledgeable individual.

³³¹ Bhowmick et al., *supra* note 150, at 87.

³³² See Chetan Gulati, Note, The "Tragedy of the Commons" in Plant Genetic Resources: The Need for a New International Regime Centered Around an International Biotechnology Patent Office, 4 YALE HUM. RTS. & DEV. L.J. 63, 67 (2001).

³³³ Diksha Khurana, Aditya Koli, Kiran Khatter & Sukhdev Singh, *Natural Language Processing: State of the Art, Current Trends and Challenges*, 82 MULTIMEDIA TOOLS & APPLICATIONS 3713, 3720-24 (2023).

³³⁴ Pandu Nayak, *How AI Powers Great Search Results*, GOOGLE: KEYWORD (Feb. 3, 2022), https://blog.google/products/search/how-ai-powers-great-search-results/ [https://perm a.cc/X2JZ-6ECE].

³³⁵ The Artificial Intelligence Revolution Is Transforming Translation, ACOLAD, https://blog.acolad.com/artificial-intelligence-transforming-language-translation-services [https://perma.cc/Y4R8-AWKP], (last updated June 22, 2022).

³³⁶ Shedding Light on AI Bias with Real World Examples, IBM (Oct. 16, 2023), https://www.ibm.com/think/topics/shedding-light-on-ai-bias-with-real-world-examples [https://perma.cc/SYZ8-6QNH].

balance collecting traditional knowledge and not disseminating traditional trade secrets, lest they inappropriately publicize private information.³³⁷

The USPTO does not need to lead their own studies. Many projects are already in development to document traditional knowledge for use in the intellectual property searching space. The Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS" Agreement) recommends that the TRIPS Council look at the protection of traditional knowledge and folklore when constructing patent policies.³³⁸ The TKDL has access agreements with several foreign patent offices to prevent biopiracy.³³⁹

Even with the assistance of other organizations, increasing the infrastructure to accommodate this additional information would be a costly and timeconsuming process. While working on funding, supplies, and examiner education for this database buildout, the USPTO can rely on existing infrastructure to assist with the traditional and oral knowledge supplementation process.

The USPTO already has multiple systems to collect submissions from third parties. Trademarks are not registered until after a thirty-day notice and comment period, where the trademark is published for the general public to oppose.³⁴⁰ If someone opposes the trademark, it will not be registered and it will start a legal proceeding with the Trademark Trial and Appeal Board.³⁴¹

There are currently no equivalent proceedings in patent law.³⁴² However, there are ways the public can comment on a particular patent application.³⁴³ The proceeding is called a third-party pre-issuance submission, and the USPTO allows anyone who is not the patent applicant to submit a document of some

³³⁷ WIPO, DOCUMENTING TRADITIONAL KNOWLEDGE—A TOOLKIT 9 (2017); Graham Dutfield, *TRIPS-Related Aspects of Traditional Knowledge*, 33 CASE W. RES. J. INT'L L. 233, 247 (2001). I recognize that the USPTO will not be able to perform "full evaluation of patentability . . . due to structural features of examination that exclude certain categories of prior art . . . and allow only a snapshot evaluation of a patentability question that changes over time." *See* Reilly, *Complicated Relationship*, *supra* note 161, at 1095. However, this addition is likely to improve the evaluation process at the prosecution stage for relevant applications.

³³⁸ Article 27.3b, Traditional Knowledge, Biodiversity, WTO, https://www.wto.org/ english/tratop_e/trips_e/art27_3b_e.htm [https://perma.cc/RT3A-QHMC] (last visited Apr. 13, 2025).

³³⁹ Arushi Guha, *Patenting of Traditional Knowledge in Light of the Turmeric Case*, INST. OF INTELL. PROP. RSCH. & DEV. (Sept. 10, 2022), https://www.iiprd.com/patenting-of-traditional-knowledge-in-light-of-the-turmeric-case/.

³⁴⁰ Approval for Publication, supra note 75.

³⁴¹ *Id*.

³⁴² The USPTO Peer Review Pilot program tested receiving public input and was closed in 2011. *Peer Review Pilot FY2011*, USPTO, https://www.uspto.gov/patents/initiatives/peerreview-pilot-fy2011 [https://perma.cc/G3YR-JGY6] (last updated May 23, 2022, 2:49 PM). The differences I propose here, including limitations to cultural capital input, differentiate my suggestions from this failed pilot.

³⁴³ See 35 U.S.C. § 122(e).

potential relevance to the examination process.³⁴⁴ If a third party chooses to submit documents, they must assert the relevance of each submitted document.³⁴⁵ For example, they can show that their document discloses every element of the claimed invention and, because the document was publicly available before the patent application was filed, the patent application should not be allowed.

This submission system can be expanded to supplement the search database for an entire art unit, rather than just one patent application. The system can encourage submissions of traditional knowledge disclosures and reports, similar to third-party pre-issuance submissions.³⁴⁶ These reports could then be kept in databases to be searched at an examiner's discretion, and they could be marked as particularly relevant for certain art units. This helps supplement the examiner's expertise in a particular subject matter area by negating their search biases and actively addressing areas of the PHOSITA's knowledgebase that the examiner may not have recognized on their own.

This information should not be relegated to an online-only forum. The USPTO has recently initiated setting up local Patent and Trademark Resource Centers ("PTRCs") all over the country to make the patent process more accessible.³⁴⁷ These PTRCs could also serve as a base to collect local community knowledge from groups that receive disproportionately less national recognition and disseminate their need for traditional, oral-knowledge supplements for the examination process.

The examiner can use these tools as another source to help inform judgements about what is and what is not obvious. By supplementing the knowledgebase with minority cultural capital for the obviousness analysis, the examiner will no longer be evaluating obviousness on purely majority culture. The supplement allows a fuller construction of a PHOSITA to better include voices and knowledge from individuals who have knowledge from minority cultures including those from minoritized races and religions—and does not create an over-emphasis on Westernized academic education at the detriment of other cultural knowledge. By recognizing that inventions are created by people of all cultures—not just those with PhDs and not just those who publish—and creating a system that welcomes these inventions with people of all backgrounds, we can develop a more equitable patent system.

³⁴⁷ USPTO Locations, USPTO, https://www.uspto.gov/learning-and-resources/supportcenters/patent-and-trademark-resource-centers-ptrc/ptrc-locations [https://perma.cc/QU5H-YUWY] (last updated Dec. 23, 2024, 8:10 AM).

³⁴⁴ Id.

³⁴⁵ Id.

³⁴⁶ This would likely be similar to calls for papers at conferences. *See, e.g., Call for Submissions "Indigenous Women and the Development, Application, Preservation and Transmission of Scientific Knowledge,"* OFF. HIGH COMM'R HUM. RTS. (Aug. 9, 2022), https://www.ohchr.org/en/calls-for-input/2022/call-submissions-indigenous-women-and-development-application-preservation-and.

CONCLUSION

Objectiveness during patent prosecution is just as fictitious as the PHOSITA itself. The patent system's legal framework is constructed around majority culture at the exclusion of minority culture. This construction can create an unjust patent system where prior art, classification, and enablement decisions are based on what the majority culture is familiar with, regardless of the cultural connections of the invention itself.

The patent system is far from equitable. Legal inequities are entrenched at the USPTO in a similar fashion to the systemic inequities of the greater legal system. The plentiful examples of these injustices—from hair sponges to turmeric patents to kosher parchment scrolls—highlight inequities, like all inequities of the greater legal system, which should be examined further.

I do not ask for anything more or less than equity. To promote science and the useful arts, we must create a system that encourages equitable reward for innovation, regardless of an invention's reliance on majority or minority cultural capital. Herein, I not only identify potential sources of inequities in the patent system, but I also identify the entity powerful enough to fix them: the USPTO.

The USPTO can improve their current methods used to classify patent applications, search prior art, and evaluate written description and enablement to better align with their stated goals. If the USPTO truly intends to create a fair patent system and promote equitable representation of inventors, the patent office can and must harness the tools and resources already at their disposal.