# Access to Justice for Black Inventors

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*To receive a patent, an inventor must meet certain inventive and procedural standards. Their invention must be novel, nonobvious, and written in such a way that any person skilled in the inventive subject can make and use the invention without undue experimentation. This process is far from objective.*

*An inventor is not always communicating within their own social circle. An inventor is required to communicate their invention so that a patent examiner believes a person having ordinary skill in the art ("PHOSITA") would recognize the invention as nonobvious. Moreover, a fictitious skilled person must be able to make and use the described invention without undue experimentation, and a patent examiner will judge whether the patent application's written description has met this standard. Many inventors choose to navigate this difficult communication path with the help of a patent practitioner; this can either help to ease or exacerbate communication obstacles between examiners and inventors. As shown in this Article, the largely homogenous patent gatekeepers—practitioners and examiners—erect communication barriers to entry for inventors from underrepresented minority groups.*

*Inventors must ensure the majority-group-based practitioners and examiners recognize valuable distinctions of the invention over current technology and understand how to use the new invention without undue experimentation. When the patent practitioner and examiner communities do not share the same primary cultural experience as an inventor or an invention's expected users, this hurdle compounds. Some inventors are disproportionately burdened when describing their invention; some must supplement the practitioners' and examiners' lack of systemic cultural capital more than others.*

*Through a case study of Black hair-care patents, this Article adds to the literature by highlighting hermeneutical injustices for Black inventors through*

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*a cultural-capital lens. This Article is the first in a series of papers showing how the majority-culture bias in patent law and the lack of resources to bridge minority- and majority-group-derived cultural-capital gaps disparately affect those inventing in minority-group cultural spaces. The cultural gap between minority-group inventors and patent practitioners, nearly all of whom are majority group, leads to inadequate and unequal representation and decisionmaking. This Article calls upon the United States Patent and Trademark Office ("USPTO"), patent attorneys, and academics to create a more equitable patent system by altering patent practice, legal education, and ethics rules.*



## INTRODUCTION

To some extent, every invention stems from a person's collective set of experiences. This includes their exposure to certain subject matter, discussions with mentors and peers, home location, age, wealth, and a host of other factors. An inventor can leverage their cultural capital—their knowledge, skills, and education gained from this set of experiences—to create something new and to enable them to achieve

higher societal status.[1] Novel ideas and innovation stemming from this cultural capital "have become the principal wellsprings of economic growth and competitive business advantage."[2]

Some choose to protect their intellectual property by patenting their inventions. Patentable technologies are novel[3] and nonobvious[4] over prior, publicly available inventions, as judged by a "person having ordinary skill in the art" ("PHOSITA").[5] The United States Patent and Trademark Office ("USPTO") should grant a patent application if the claimed invention is new and written in a way that enables any person skilled in the art to make and use the invention with the full, clear, concise, and exact terms in the specification.[6]

The process to obtain a patent for an invention is not equitable.[7] Black and Hispanic patentees "are woefully underrepresented in America,"[8] as are female patentees.[9] Though many—including the USPTO—are trying to increase equitable representation of patentees, there is still a significant race and gender imbalance for credited inventors in the United States.[10] Herein, we will show how disparities

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1. *See* Pierre Bourdieu, *Cultural Reproduction and Social Reproduction*, *in* KNOWLEDGE, EDUCATION AND CULTURAL CHANGE 71, 71–112 (Richard Brown ed., 1973); Pierre Bourdieu, *The Forms of Capital*, *in* HANDBOOK OF THEORY AND RESEARCH FOR THE SOCIOLOGY OF EDUCATION 241, 241–58 (John G. Richardson ed., 1986); PIERRE BOURDIEU, THE STATE NOBILITY: ELITE SCHOOLS IN THE FIELD OF POWER 264–66 (Lauretta C. Clough trans., Stanford Univ. Press 1996) (1989).

2. Nilanjana Bhaduri Nee Chakraborty & Mary Mathew, *Patent Intelligence and Its Implications for Patent Productivity*, *in* PEOPLE, KNOWLEDGE AND TECHNOLOGY: WHAT HAVE WE LEARNT SO FAR? 305, 305 (Bruno Trezzini, Patrick Lambe & Suliman Hawamdeh eds., 2004) (citing KEVIN G. RIVETTE & DAVID KLINE, REMBRANDTS IN THE ATTIC 1–2 (2000)).

3. 35 U.S.C. § 102.

4. *Id.* § 103.

5. *See id.*; *see also* U.S. PAT. & TRADEMARK OFF., MPEP § 2141.03 (9th ed. Rev. 10.2019, June 2020) [hereinafter MPEP] (discussing requirements for a person of ordinary skill in the art); U.S. CONST. art. I, § 8, cl. 8 (commonly referred to as the Intellectual Property Clause) ("[The Congress shall have Power . . . ] [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.").

6. 35 U.S.C. § 112.

7. *See* Shontavia Jackson Johnson, *The Colorblind Patent System and Black Inventors*, GPSOLO, Mar./Apr. 2021, at 62, 62 (describing legal and societal hurdles to the patent system for Black inventors).

8. *Id.* at 63.

9. Jordana R. Goodman, *Sy-STEM-ic Bias: An Exploration of Gender and Race Representation on University Patents,* 87 BROOK. L. REV. 853, 855 (2022) ("The research herein demonstrates that Black, Hispanic, and female professors are not named as patent inventors at the same rate as their white and male peers, even when accounting for their underrepresentation on campus.").

10. *See generally id.*; Eric S. Hintz, *Tearing Down the Barriers for Black Inventors Begins with Honoring Their Historic Breakthroughs*, SMITHSONIAN MAG. (Mar. 1, 2022), https://www.smithsonianmag.com/smithsonian-institution/tearing-down-barriers-black-inventors-honoring-historic-breakthroughs-180979652 [https://perma.cc/P3GC-ZFWY]; *Diversity*

in representation and cultural capital among examiners and patent practitioners—two gatekeepers of the patent system—affect access to the patent system for underrepresented inventors.

The patent system has standards and practices to theoretically increase objectivity in the patent prosecution and litigation processes.[11] An inventor arises from a group of individuals skilled in the art and creates a new invention from knowledge of that art.[12] A patent practitioner, preferably one knowledgeable in this art, may assist the inventor in writing and arguing the patent application. An examiner, also knowledgeable in the general art of the invention, evaluates the application using the same standards taught to every examiner at the USPTO, including novelty, obviousness, enablement, and written description, among others.[13] Although the processes of intake, writing, and evaluating patents should be unbiased, this procedure is implemented by humans, and thus, it is subject to bias.[14]

Practically speaking, inventors come from significantly different social, cultural, and economic communities, as do patent examiners and practitioners. In cases where an inventor seeks a patent for an invention that is unique to their own community and the cultural knowledge necessary to understand this origin and use is not widely dispersed among patent practitioners and examiners, the inventor may be disadvantaged in the patent process.[15] These gaps in cultural knowledge affect the patent practitioner's ability to effectively write

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*in Innovation: Best Practices*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/about-us/events/diversity-innovation-best-practices (last visited Dec. 19, 2023) [https://perma.cc/RNE8-R4SF].

11. Steven P. Smith & Kurt R. Van Thomme, *Bridge over Troubled Water: The Supreme Court's New Patent Obviousness Standard in* KSR *Should Be Readily Apparent and Benefit the Public*, 17 ALB. L.J. SCI. & TECH. 127, 162–63 (2007). For an explanation of patent prosecution (the process of acquiring a patent), *see infra* Part I.

12. *See* Smith & Van Thomme, *supra* note 11, at 162–64 (discussing the extent of which an inventor's skill level is determinative in a Graham analysis).

13. *See* Daralyn J. Durie & Mark A. Lemley, *A Realistic Approach to the Obviousness of Inventions*, 50 WM. & MARY L. REV. 989, 1009 (2008); *Examination Guidance and Training Materials*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents/laws/examination-policy/examination-guidance-and-training-materials (last updated Aug. 16, 2021, 3:13 PM) [https://perma.cc/ 5LX2-ELLQ].

14. Herein, we will discuss only utility patent applications. However, the theme of inequities and legal penalties for those with minority-group cultural capital likely extends to design patents as well. *See, e.g.*, U.S. Patent Application No. 29/803,388 (filed Aug. 12, 2021) (showing a narrow design patent for a dispensing comb); U.S. Patent Application No. 29/472,991 (filed Nov. 18, 2011) (showing a narrow design patent for a menorah, a candelabra used in Jewish rituals).

15. Jaimee Francis, *Explainer: How Gender and Racial Biases Mar the US Patent Process, and What Lawyers Can Do to Fight Back*, JURIST (Sept. 29, 2022, 5:54 PM), https://www.jurist.org/features/2022/09/29/explainer-how-gender-and-racial-bias-mar-the-us-patent-process-and-what-lawyers-can-do-to-fight-back/ [https://perma.cc/3D43-BC6V] (transcribing an interview with author, Jordana R. Goodman, about her research on gender and race equity issues in intellectual property).

and argue the patent application and affect an examiner's ability to evaluate the patentability of the invention and the proper descriptive depth of the patent application. These are the biases we will explore herein.

These biases pose additional obstacles to those already disadvantaged in inventive spaces,[16] especially when pursuing patent protection for their inventions built for those in a nonmajority culture. Not only does an inventor need knowledge and money to access the patent system,[17] but they also must explain their invention based on some aspect of their cultural capital to the patent practitioner and examiner, who likely do not have overlapping cultural capital.[18] We must examine this extra barrier disparately affecting underrepresented inventors.

Barriers of the default majority culture among practitioners and examiners likely affect inventors of many minority groups.[19] The term "minority group" in sociology refers to a category of people who do not belong to a dominant (often majority) social group based on observable characteristics or practices, such as ethnicity, race, religion, sexual orientation, or disability.[20] When pursuing a patent, an inventor must effectively communicate their invention to at least one attorney or examiner—likely in the majority group—regardless of whether (1) the inventor belongs to the majority group, (2) the invention would be used by the majority group, or (3) the majority group would recognize valuable distinctions of the invention over current technology.[21]

Certain differences in majority-group and minority-group culture, including communication practices and cultural capital held by individuals in each group, are not consistently acknowledged openly during the intake, writing, or argument phases of patent prosecution. Patent practitioners will often acknowledge if they are asked to write a

16. *See* Elyse Shaw & Halie Mariano, *Tackling the Gender and Racial Patenting Gap to Drive Innovation*, INST. FOR WOMEN'S POL'Y RSCH. 2 (July 2021), https://iwpr.org/wp-content/uploads/2021/07/Tackling-the-Gender-and-Racial-Patenting-Gap_FINAL38.pdf [https://perma.cc/SLT3-HJQP] (discussing other disadvantages for women and people of color pursuing patents and innovation-based careers, including money and social dynamics); *see also* Jordana Goodman, *Addressing Patent Gender Disparities*, 376 SCIENCE 706, 707 (2022) (discussing inequitable work opportunities).

17. *See* Edmund W. Kitch, *The Nature and Function of the Patent System,* 20 J.L. & ECON. 265, 266–67 (1977) (discussing the costs and benefits of the patent system).

18. *See* Francis, *supra* note 15.

19. *See* JOSEPH F. HEALEY, ANDI STEPNICK & EILEEN O'BRIEN, RACE, ETHNICITY, GENDER, & CLASS (8th ed. 2018) (examining the different lived experiences within minority groups).

20. *See* GEORGE RITZER, ESSENTIALS OF SOCIOLOGY 216–18 (4th ed. 2021).

21. *See, e.g.*, J. Shontavia Johnson, Tonya M. Evans & Yolanda M. King, *Diversifying Intellectual Property Law: Why Women of Color Remain "Invisible" and How to Provide More Seats at the Table*, LANDSLIDE, Mar./Apr. 2018, at 30, 31 (showing less than two percent of intellectual property attorneys in the United States are African American).

patent application outside of their trained subject matter—like if a patent practitioner trained as a chemist is asked to write a software patent. However, this discussion is likely absent or lacking when the majority-group/minority-group divide is based in cultural education, such as differences in hair-care needs, rather than standardized academic education.

Though these gaps affect a myriad of people inventing from minority-group-derived cultural capital,[22] this Article presents a case study on Black inventors in the hair-care space. Here, we show difficulties in communication between the USPTO and inventors developing hair-care products for themselves, their families, and their friends. The cultural capital necessary for Black hair-care inventions—including knowledge of Black hair texture and style, perceived monetary value of the Black hair-care industry, and existing product expertise—rarely overlaps with the practitioner writing the patent application or the examiner reviewing the application.[23] This lack of overlap—and failed communication between those who do not overlap—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.[24] In this case, that place of justice is patent protection equal to those pursuing patents for inventions developed for and by members of the cultural majority. Patent practitioners and examiners do not receive the necessary training to bridge these cultural and communication gaps.[25] As a result, clients in underrepresented communities are often underserved.

This Article serves as a mechanism to hold the legal intellectual property community responsible for its impact on clients who use minority-group-based cultural capital to invent. Part I provides a brief overview of the patent prosecution process and how certain biases may influence this process. Part II presents a case study of two successful

22. This includes race, religion, disability, and other groups.

23. *See supra* note 21 and accompanying text. This is not to say that only African American and Black attorneys have sufficient cultural capital to pursue Black hair-care patents, but based on the interview of Bruce Boyd and Brigitte Gopou, inventions directed to Black hair care may be better prosecuted by someone who is Black or African American or has developed the cultural competency externally to the client. Interview with Brigitte Gopou and Bruce Boyd, Inventors of the NuDred Hair Sponge, Nu-You Techs., LLC (Aug. 31, 2022).

24. MIRANDA FRICKER, EPISTEMIC INJUSTICE: POWER AND 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").

25. *See* Francis, *supra* note 15. Training for patent practitioners and examiners will be discussed in a future paper.

inventions in the Black hair-care space: the NuDred hair sponge[26] and the Naturalicious Clay Treatment.[27] This shows how cultural knowledge gaps between inventors, examiners, and practitioners can disparately affect those whose inventions derive from minority-group cultural capital. Part III provides solutions to improve cross-cultural communication and shared cultural capital among clients, practitioners, and USPTO examiners. These improvements will increase equity among inventors of all backgrounds, comporting with the current ethical practices for which the legal community recognizes and strives.

## I. BIAS IN THE PATENT PROCESS

### *A. A Brief Primer on Patents*

Patents allow an inventor or patent owner to secure a monopoly on their invention for a fixed period of time.[28] Those who have control over a patent may prevent others from making, using, selling, or offering to sell the invention claimed therein for approximately twenty years from the time of filing.[29] This right to exclude others is only given to those who have been granted a patent—someone who has merely filed the application has no equivalent exclusionary right.[30]

Patent prosecution encompasses the process of drafting, filing, and negotiating the patent application with the USPTO to obtain a patent.[31] Most inventors pursue a patent with the assistance of a patent practitioner.[32] The patent practitioner, who has both legal and STEM

26. NUDRED, https://nudred.com/ (last visited Dec. 19, 2023) [https://perma.cc/W8VE-XTD6].

27. *Moroccan Rhassoul 5-in-1 Clay Treatment (Step 1)*, NATURALICIOUS, https://naturalicious.net/products/rhassoul-clay-for-hair-coarse-hair (last visited Dec. 19, 2023) [https://perma.cc/W8VE-XTD6].

28. Simon Lester & Huan Zhu, *Rethinking the Length of Patent Terms*, 34 AM. U. INT'L L. REV. 787, 788 (2019).

29. *See id.*; Daniel Harris Brean, *Asserting Patents to Combat Infringement via 3D Printing: It's No "Use*," 23 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 771, 781–83 (2012) (exploring the implications that new 3D technology has on patent law and the motivations behind patent law); *Rights Granted Under U.S. Patent Law*, FORSGREN FISHER MCCALMONT DEMAREA TYSVER LLP, https://www.bitlaw.com/patent/rights.html (last visited Dec. 19, 2023) [https://perma.cc/EF6C-NJWY].

30. Vic Lin, *What Are Your Patent Pending Rights?*, PAT. TRADEMARK BLOG, https://www.patenttrademarkblog.com/rights-patent-pending/ (last visited Dec. 19, 2023) [https://perma.cc/F3JZ-XJZ5].

31. *Patent Prosecution & Legal Concerns over Patentability*, JUSTIA, https://www.justia.com/intellectual-property/patents/patent-prosecution/ (last visited Dec. 19,. 2023) [https://perma.cc/3QMS-G5XR].

32. That being said, some file pro se. Kate S. Gaudry, *The Lone Inventor: Low Success Rates and Common Errors Associated with Pro-Se Patent Applications*, PLOS ONE, Mar. 2012, at 1, 2 . A patent practitioner is a person who has passed the USPTO Registration Examination and

(science, technology, engineering, and math) expertise, guides the inventor through this process by drafting the patent application, filing the patent application with the USPTO, and responding to any rejections or questions from the examiner at the USPTO.[33] At each of these stages, the practitioner must competently represent their client, communicating about the status of the case and rendering candid advice about how the client should proceed.[34]

At the first stage of patent prosecution, the practitioner performs a basic intake and analysis.[35] During the intake, the practitioner asks the client questions about their invention—how the invention works, what the client believes the invention is, and how the client believes the invention is different than other products already in existence—and requests any drawings or photographs of invention prototypes. To be clear, there is no requirement that an inventor make a prototype prior to filing the application, but the application must sufficiently describe the invention such that "others can rely on the disclosure to actually reduce the invention to practice."[36] The USPTO and courts use the PHOSITA standard to determine whether the applicant has met this burden.[37]

After receiving the initial disclosure from the client, the practitioner may proceed with a formal search to find any prior art that may preclude the client from obtaining a patent on their invention.[38] When reviewing the prior art, the practitioner will help the client judge whether they believe a skilled person would be able to use prior art to make and use the new invention without having first received instructions from the inventor. Barring a search that finds close prior

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comprises both attorneys and agents. *Patent Practitioner Home Page*, U.S. PAT. & TRADEMARK OFF., https://oedci.uspto.gov/OEDCI/practitionerhome.jsp (last visited Dec. 19, 2023) [https://perma.cc/3HQM-4FL4].

33. *Patent Bar Exam Requirements,* PAT. EDUC. SERIES, https://www.patenteducationseries.com/exam/qualifications.html (last visited Dec. 19, 2023) [https://perma.cc/BZ46-KERC].

34. MODEL RULES OF PRO. CONDUCT r. 1.1, 1.2, 1.4, 2.1 (AM. BAR ASS'N 1983).

35. *Client Intake Form: USPTO Representation (Patent), W-003-7723*, WESTLAW, https://us.practicallaw.thomsonreuters.com/w-003-7723?view=hidealldraftingnotes (last visited Dec. 19, 2023) [https://perma.cc/AL8P-AJHF].

36. Jeanne C. Fromer, *The Layers of Obviousness in Patent Law*, 22 HARV. J.L. & TECH. 75, 89 (2008).

37. John R. Allison & Lisa Larrimore Ouellette, *How Courts Adjudicate Patent Definiteness and Disclosure*, 65 DUKE L.J. 609, 617 (2016).

38. Vikram Singh, Kajal Chakraborty & C. Lavina-Vincent, *Patent Database: Their Importance in Prior Art Documentation and Patent Search*, 21 J. INTELL. PROP. RTS. 42, 42 (2016) ("According to the WIPO, prior art search is done by the patent office after formal examination of the patent."). Prior art is defined by patent statutes and generally encompasses previous publications and making the invention available to the public.

art, the practitioner composes a patent application. This application includes the specification with an original set of claims and drawings.[39]

On the whole, the specification provides the background and a detailed description of the invention, such that any person skilled in the art could read the specification and then "make and use the invention without undue experimentation."[40] Furthermore, the "specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention."[41] The description can include ratios of ingredients in a mixture, sizes of mechanical objects, and different methods of use of an invention.

Because the specification cannot change substantively over the course of prosecution, it is of the utmost importance to include all details relevant to the invention at the time of initial application composition.[42] The patent application also includes a set of claims detailing what the inventor believes to be new and novel about their invention.[43] The claims "define[ ] the subject matter that is sought to be protected," identifying the boundaries between "what the patent does and does not cover."[44] If possible, an attorney will write claims capturing the process, device, article, or some combination thereof related to the invention.[45]

The claims cannot be too broad, not only because an applicant must have described the subject matter of the claims in sufficient detail in the specification but also because broad claims would likely be precluded by prior art already in existence.[46] Similarly, the claims should not be too narrow because the inventor "would not want to lose full protection for [their] invention."[47] The practitioner can include up

39. MPEP, *supra* note 5, § 608.

40. *Id.* § 2164.01.

41. *Id.* § 2163 (citing Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1319 (Fed. Cir. 2003)).

42. *Id.*; *see also id.* § 2163.06 ("[N]o amendment shall introduce new matter into the disclosure of the invention" and "no new matter shall be introduced into the application for reissue.").

43. *Id.* § 1824 ("The claim or claims shall define the matter for which protection is sought.").

44. *Patent Claim*, CORNELL L. SCH.: LEGAL INFO. INST., https://www.law.cornell.edu/wex/patent_claim (last visited Dec. 19, 2023) [https://perma.cc/4YRA-ZJF9].

45. *See id.* This is only possible if the process, device, and combination thereof are all novel and nonobvious. Some patents are only directed to methods because the product is already known and not considered novel, even by the inventors.

46. Michael K. Henry, *Claim Strategies for Patent Applications: Can Your Patent Claims Ever Be Too Broad?*, HENRY PAT. L. FIRM (Nov. 30, 2017), https://henry.law/blog/can-your-patent-claims-ever-be-too-broad/ [https://perma.cc/V49J-5GY2].

47. CORNELL L. SCH.: LEGAL INFO. INST., *supra* note 44.

to twenty claims in the patent application without paying additional fees to the USPTO.[48]

Once the patent application is filed with the USPTO, the application will be classified by subject matter into art units.[49] Examiners within each art unit have specialized subject matter expertise.[50] For example, chemistry patent applications are sent to examiners with chemistry experience and who work in a chemistry art unit. After this assignment, an examiner from the assigned art unit will evaluate the application to determine whether the application is allowable.[51] If the application is deemed to be "allowable," the examiner has determined that the specification describes the invention in sufficient detail and the claims, as written, are novel and nonobvious compared to the existing prior art.[52]

The examiner could also reject the application for a myriad of reasons—including that they determine the claims are not novel or nonobvious over the existing prior art or that there is not sufficient description to make and use the invention.[53] This rejection is known as an office action.[54]

When the examiner issues a rejection, it should not be based on their personal knowledge.[55] Instead, the examiner is acting as a mouthpiece for the PHOSITA. Each examiner should apply the fictitious PHOSITA standard uniformly, so the examiner's personal background does not unfairly prejudice the patent process. For example, the examiner should reject the application if they determine that one skilled in the art could not make and use the invention based on the information in the specification, regardless of whether the examiner has the capability to make and use the invention.[56]

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48. U.S. PAT. & TRADEMARK OFF., CLAIM DRAFTING: INVENTION-CON 2019, PRE-CONFERENCE SESSION 10 (2019), https://www.uspto.gov/sites/default/files/documents/Claim%20drafting.pdf [https://perma.cc/3DVB-6A52] ("20 claims total before excess fees are due.").

49. *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/PC5W-2BLA].

50. *See id.*

51. *Join Us*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/jobs/join-us (last updated Aug. 7, 2023, 11:01 AM) [https://perma.cc/3TYH-FRNY].

52. *See* 35 U.S.C. §§ 102, 103, 112 (explaining these central requirements for obtaining a patent in addition to other criteria).

53. *Id.* §§ 102, 103, 112.

54. *See* 37 C.F.R. § 1.104 (2023); MPEP, *supra* note 5, § 608 ("No new matter may be introduced into an application after its filing date. Applicant may rely for disclosure upon the specification with original claims and drawings, as filed.").

55. *See* Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885, 897 (2004).

56. *See id.* at 898.

This rejection is not final. Upon receipt and review, the practitioner and inventor can amend the claims—but not substantively amend the specification—and submit the response for additional review.[57]

### *B. Human Biases in the Patent Process*

The human gatekeepers to patentability—the practitioner and the examiner—are biased. Every interaction with another human can be tainted by bias,[58] and the patent process is no exception. These biases manifest in unequal treatment of inventors during the patent process, which likely contributes to the systemic underrepresentation of those most likely to be negatively affected by bias: those "other" to those in power.[59] This Article concentrates on biases against those in a minority group and in favor of those in a majority group, and it defines bias within these confines.[60]

Among the three key players in the patent prosecution process—the inventor, the practitioner, and the examiner—the practitioner and examiner often have far more power than the inventor, and we therefore categorize them as the gatekeepers to patentability. After the inventor presents their invention to the practitioner during the intake process, the practitioner controls whether they accept the responsibility of writing the patent application, sets the price of patent prosecution, and takes primary responsibility for the vast majority of the patent application's content.[61] The practitioner chooses questions to ask the inventor, advises on how to write claims in the application, and, in the case of a patent attorney, provides legal counsel relating to future licenses and potential infringement suits.[62] Once the practitioner sends the application to the USPTO, the examiner determines whether the

57. *See Filing an Amendment After Non-final Rejection*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/sites/default/files/ebc/portal/efs/dct_amendment_after_nonfinrej_tutorial.pdf (last visited Dec. 19, 2023) [https://perma.cc/6RAJ-JXHN].

58. Karen Steinhauser, *Everyone Is a Little Bit Biased*, AM. BAR ASS'N (Mar. 16, 2020), https://www.americanbar.org/groups/business_law/resources/business-law-today/2020-april/everyone-is-a-little-bit-biased/ [https://perma.cc/VFQ5-AE54].

59. *See* Allie Bunch, *Epistemic Violence in the Process of Othering: Real-World Applications and Moving Forward*, 1 SCHOLARLY UNDERGRADUATE RSCH. J. CLARK 11, 11 (2015) ("I define the 'Other' as the out-group: those that are marginalized by a larger portion of the population and who often maintain limited rights within society.").

60. *See* Ashley W. Doane Jr., *Dominant Group Ethnic Identity in the United States: The Role of "Hidden" Ethnicity in Intergroup Relations*, 38 SOCIO. Q. 375, 376 (1997) ("[A] dominant ethnic group as the ethnic group in a society that exercises power to create and maintain a pattern of economic, political, and institutional advantage, which in turn results in the unequal (disproportionately beneficial to the dominant group) distribution of resources.").

61. JUSTIA, *supra* note 31.

62. *Id.*

claims, as written, are allowable.[63] If the examiner rejects the application, the practitioner reviews the rejection and can make judgments about the reasonability of the rejection and how to amend the claims in response. These judgments form the basis for their recommendation to the inventor, who can choose to accept or reject the practitioner's advice.

Every judgment call within the patent process is potentially subject to bias. These biases manifest both as interpersonal bias (bias occurring between individuals) and systemic bias (biases that exist across a society and between its institutions).[64] We will explore three main arenas where bias prominently features in the patent process: (1) writing the patent application, (2) responding to a rejection from the USPTO, and (3) affordability and pro bono services.

Hypothetically, after describing the invention to the practitioner, the client poses the following questions to the practitioner: Can you write the application? And how much will I pay you to write and file this patent application? These questions are complicated to answer, although the practitioner may not recognize every facet of complexity when giving their answer. Whether the practitioner is qualified to write the application necessarily calls into question whether the practitioner understands the invention. This understanding is influenced by the practitioner's cultural capital, the inventor's cultural capital, and the cultural capital necessary for a person of skill to make and use the invention.

If the practitioner cannot acquire the cultural capital necessary to prosecute the patent application, their interpersonal bias stemming from this lack of capital acquisition can result in a poor patent outcome for the inventor. As shown in detail below, when the practitioner is a member of a majority group, the inventor is a member of a minority group, and the inventor's invention relies on cultural capital of that minority group, the cultural-capital gap between the practitioner and the inventor may affect the patent prosecution process.

Similar disparate cultural-capital concerns arise at the USPTO and in litigation. The cultural capital of examiners, judges, litigators,

63. Patrick Nolan & Leonard Chang, *Understanding the Patent Examination Process*, U.S. PAT. & TRADEMARK OFF. 7 (July 2020), https://www.uspto.gov/sites/default/files/documents/InventionCon2020_Understanding_the_Patent_Examination_Process.pdf [https://perma.cc/X9UG-LDR4].

64. *Levels of Racism: Systemic vs Individual,* FITCHBURG ST. UNIV., https://fitchburgstate.libguides.com/c.php?g=1046516&p=7602969 (last updated Mar. 15, 2023, 2:42 PM) [https://perma.cc/H3EP-72WS] ("Systemic Racism (also called structural or institutional racism)—racism that exists across a society within, and between institutions/organizations across society . . . Interpersonal Racism (also called individual racism or personally mediated racism)—occurs between individuals, and is what most people think of when using the term racism.").

and juries will affect how they view the patent application. Examiners reviewing applications will make connections to prior art that they are innately familiar with, and this exposure influences their judgment of the novelty and obviousness. If the examiner determines that the application fails the enablement requirement, the examiner "must establish on the record a reasonable basis for questioning the adequacy of the disclosure to enable a [PHOSITA] to make and use the claimed invention without resorting to undue experimentation."[65] To reject the application for lack of written description, the examiner must establish that the specification failed to convey "with reasonable clarity to those skilled in the art that, as of the filing date sought, [the] applicant was in possession of the invention as now claimed."[66] All of these questions are affected by personal biases—and these biases affect the application writing, the application cost, and the arguments and strategy employed when amending claims based on rejections from the USPTO.

Before delving further, it is of the utmost importance to understand that the PHOSITA standard for judging a patent application is inherently biased. As described by various scholars, the supposed neutral standard of the PHOSITA is a fallacy;[67] the standard is constructed and interpreted by biased humans and excludes criteria accounting for the cultural biases intertwined in every decision made by these biased humans. We recognize and endorse wholeheartedly that the biased PHOSITA standard infiltrates and negatively affects almost every standard of patentability, from obviousness to enablement to written description.[68] While acknowledging this inherent bias, we must also acknowledge that this issue is beyond the scope of this Article, but it will be addressed in future work.

### 1. Biases in Writing the Patent Application

The first question posed by the client (can the practitioner write the application?) is more than a simple question of the practitioner's ability to write *a* patent application. This question instead relates to the competency of the practitioner to perform the requested task and is a subjective question that only the practitioner knows the answer to: Does the practitioner have the skills and cultural capital necessary to capture the inventor's idea in a patent application? If not, can the

65. MPEP, *supra* note 5, § 2161.

66. *Id.* § 2163.

67. *See* Dan L. Burk, *Do Patents Have Gender?*, 19 AM. U. J. GENDER SOC. POL'Y & L. 881, 903 (2011) (exploring gender bias in the PHOSITA standard).

68. *See* Jordana Goodman, Distributive Effects 2: Uncultured PHOSITA, Presentation at the Intellectual Property Scholars Conference (Aug. 4, 2023).

practitioner acquire such skills and cultural capital during the writing process?

Almost always, if a practitioner has passed the patent bar, patent law deems that the practitioner has relevant expertise to handle this type of case.[69] Any practitioner who has passed the patent bar can legally write and prosecute patent applications about any subject.

Furthermore, inventors attempting to patent their inventions are leveraging a part of their cultural capital—the invention derived from their knowledge, skills, and education—to increase their position in the social hierarchy. To leverage this capital effectively, they must be able to communicate their invention to the practitioner.

Because every patentable invention is new, there will always be times where the inventor's cultural capital does not overlap with the practitioner's; that nonoverlap is likely part of the novelty of the invention. It is the practitioner's job to recognize and effectively bridge this gap to write a good patent application. Patent practitioners are trained to identify when overlap gaps derive from differences in academic education and understanding.[70] However, patent practitioners are insufficiently trained to recognize gaps stemming from nonacademic education cultural capital. This insufficient training, unable to counter biases, creates disparate results for underrepresented inventors and the inventions derived from their nonacademic, nonmajority-based cultural capital.

Though both interpersonal biases and systemic biases exist in all areas of patent prosecution, the writing process is primarily intertwined with interpersonal biases. According to sociolinguistic and linguistic anthropology theory, if the inventor and practitioner belong to different speech communities (stemming from different cultures and creating different cultural capital for members of each speech community group), they may have a more difficult time communicating

69. The patent bar is not a test requiring formal legal education or graduation from law school. It is the examination for individuals—regardless of their legal education status—seeking registration or recognition to practice before the USPTO. All people who take the patent bar and prosecute utility patent applications have a substantial background in science or engineering. *See General Requirements Bulletin for Admission to the Examination for Registration to Practice in Patent Cases Before the United States Patent and Trademark Office*, U.S. PAT. & TRADEMARK OFF. 1, 3–5 (May 2023), https://www.uspto.gov/sites/default/files/documents/OED_GRB.pdf [https://perma.cc/V2TC-34MM]. In 2023, the USPTO announced the creation of a design patent bar, where people with design and art educational backgrounds can proscute design patent applications. Representation of Others in Design Patent Matters Before the United States Patent and Trademark Office, 88 Fed. Reg. 78644 (Nov. 16, 2023) (to be codified at 37 C.F.R. pts. 1, 11, 41).

70. For example, a patent attorney with a Bachelor of Science in chemistry can identify areas requiring additional description and areas of sufficient description in a chemistry-related invention, but they may have difficulty identifying these areas in a computer-science-related invention.

effectively than if they both belonged to the same speech community.[71] The practitioner's communication skill—especially with respect to bridging speech communities—is vital to the success of the patent application writing endeavor.

"A speech community is a group of people who share rules for conducting and interpreting at least one variety of a language or dialect."[72] A speech community does not necessarily encompass all people who speak the same language. For example, "speakers of South Asian English in India and Pakistan share a language with citizens of the United States, but the respective varieties of English and the rules for speaking them are sufficiently distinct to assign the two populations to different speech communities."[73] Speech communities may have different vocabularies, grammar, and pronunciation of the same language.[74] To have mutual intelligibility between two speakers, their vocabularies must overlap.[75] Inventors of less represented speech communities in patent law will likely have a more difficult time finding a practitioner who overlaps with their speech community and must therefore find a practitioner with enough cultural capital to bridge the speech community gap.

Speech community influence included, the practitioner's cultural capital derived from their life experiences influences their perception of the invention.[76] Without training to overcome gaps in experience-derived cultural capital, the practitioner may unwittingly impose their biases on the patent application process.

Miscommunications, especially between speakers from different speech communities, often happen when speakers use slang. For example, the British English term "knock up" may mean to wake someone up, but the American English term "knock up" is generally

71. *See* ZDENEK SALZMANN, LANGUAGE, CULTURE, AND SOCIETY: AN INTRODUCTION TO LINGUISTIC ANTHROPOLOGY 244–46 (4th ed. 2007).

72. Annela Teemant & Stefinee E. Pinnegar, *What Is a Speech Community?*, *in* PRINCIPLES OF LANGUAGE ACQUISITION 1.1 (Bohdana Allman ed., 2019).

73. SALZMANN, *supra* note 71, at 244.

74. Without question, those who speak in a stigmatized language variety, such as African American Vernacular English, are likely to be misrepresented as "verbally deprived" and disrespected in scholarly settings. *See id.* at 235. However, this Article will not address how "[v]ocabularies of living languages change constantly" on a deeper level today. *Id.* at 348.

75. *See id.* at 175 (explaining that individuals often belong to many speech communities and have their own individual speech variety—known as an idiolect).

76. *See* Non-final Rejection, U.S. Patent Application No. 11/083,844 (July 23, 2023) (rejecting a patent application directed to a "Shari'ah (Islamic) compliant financial services card" under 35 U.S.C. § 112 because examiner determined that the term "Shari'ah compliant financial practices" is unclear, showing that the examiner's cultural knowledge of Islamic law influences their interpretation of the patent application).

taken to mean "to make pregnant."[77] If neither the American speaker nor the British speaker understands that there is a polysemy—the coexistence of many possible meanings of this phrase—there will likely be some confusion when this phrase is used in a sentence.

These miscommunications extend not only to accent differences but also to two speakers with different knowledge bases. These knowledge bases derive from acquired cultural capital. Speakers with different knowledge bases may, in some cases, belong to slightly different speech communities because their vocabulary differs. In the famous Abbott and Costello "Who's on First?" comedy routine, Bud Abbott is identifying baseball players for Lou Costello, but neither character understands that there is a polysemy problem: Who, What, Why, I Don't Know, and the like all have two meanings.[78] There is a layman's meaning (question words and answers to question words), and there is an expert meaning (the names of the baseball players). Abbott, a person with in-depth knowledge of each baseball player's name, believes he is being incredibly clear by answering Costello's questions with their proper names (Who, What, Why, I Don't Know, etc.). Abbott's subject matter expertise informs his answers, but he assumes that Costello has enough subject matter expertise to perceive these answers as *answers*, not as confusing responses. Costello simultaneously has a very different level of subject matter expertise, such that Abbott's responses only evoke the layman's definition.[79] Their simultaneous, growing frustration stems from each character's unintentional lexical ambiguity—the presence of multiple meanings of a single word.

Different subject matter expertise between practitioners and clients—especially in the inventive space—may exacerbate differences in their respective speech communities. The success of communication between client and practitioner depends on the training of the practitioner, including their familiarity with other dialects and speech communities. This may be especially difficult when both the practitioner and client believe themselves to be the expert in certain subject matter, which is a scenario that often arises in patent prosecution.

Interpersonal biases and systemic biases are evident when scrutinizing examples of lexical ambiguity. If a practitioner does not

77. *Knock Up*, MERRIAM-WEBSTER DICTIONARY, https://www.merriam-webster.com/dictionary/knock-up (last visited Dec. 19, 2023) [https://perma.cc/PP62-5L5E].

78. Universal Pictures, *The Naughty Nineties: Who's on First? – Abbott and Costello*, YOUTUBE (June 28, 2022), https://www.youtube.com/watch?v=sYOUFGfK4bU.

79. *See id.*; Xiaojuan Ma, *Evocation: Analyzing and Propagating a Semantic Link Based on Free Word Association*, 47 LANGUAGE RES. & EVALUATION 819, 820 (2013) (explaining that how much one concept evokes another is "based on people's subjective opinions").

understand their client's invention because of a lexical ambiguity, this mismatch in language can manifest in a breakdown in their interpersonal relationship and result in a poorly written patent application or a fraught intake process.

For example, an inventor may ask a practitioner to write a patent application for braces. The practitioner may immediately start asking about teeth, brackets, and metal wiring because, in their speech community, braces are orthodontic appliances.[80] However, the client may come from a speech community where the term "braces" means "suspenders" and may be confused by the practitioner's initial question set.[81] The longer both parties fail to recognize the secondary meaning of "braces," the longer their communication may seem to fail.

Lexical ambiguity may arise in conversation even if a practitioner recognizes that a client's word has multiple definitions. If a client asks their practitioner to draft a patent application for a brush, many definitions of "brush" may come to mind. This could be a hairbrush, a brush to wipe snow off a car, a paintbrush, a dish brush, or a broom. If the practitioner recognizes that the term "brush" has several different definitions, they may ask open-ended questions to the client. However, the practitioner must recognize that, even though they have thought of several different types of brushes, they may have overlooked a definition used by the inventor in their speech community and not by the practitioner in their speech community. For example, the client may respond that the brush is used to clean teeth, which was not a definition that the practitioner originally associated with the term "brush."[82]

Unfamiliarity with a term is commonplace in patent law.[83] If the practitioner is unfamiliar with the client's term or underlying invention, the practitioner will likely ask broad questions to lead the client to describe their invention with as much specificity as possible. The practitioner will likely offer suggestions or prompts to fully capture the invention's breadth. If the practitioner is familiar with the subject matter, their suggestions might be more helpful to the client. If the practitioner is unfamiliar, their suggestions might be less helpful. If the practitioner and client are using two very different definitions and have

80. *Brace*, MERRIAM-WEBSTER DICTIONARY, https://www.merriam-webster.com/dictionary/brace (last visited Dec. 19, 2023) [https://perma.cc/DKM2-N283].

81. *See id.*

82. *Brush*, MERRIAM-WEBSTER DICTIONARY, https://www.merriam-webster.com/dictionary/brush (last visited Dec. 19, 2023) [https://perma.cc/D4W2-E7TH].

83. Craig Allen Nard, *Patent Law's Purposeful Ambiguity*, 87 TENN. L. REV. 187, 187–88 (2019).

not yet found a vocabulary overlap, the practitioner may provide erroneous suggestions.

For example, if the client lists that the toothbrush could be made of plastic or nylon, the practitioner can prompt the client to see if the brush could be made of other suitable materials, like metal or bamboo. Both may function as appropriate materials for brushes, but some are better than others. An unfamiliar attorney may list that toothbrushes might be made of metal but may neglect to identify that iron would likely be an unsuitable material because it rusts in water. Other unfamiliar practitioners may import their own biases into the application and may suggest that the brush can be used to clear a car or clean a sink.

Even if there is an overlap between the practitioner's and client's cultural capital such that the practitioner *does* recognize both definitions of "braces" or the practitioner does understand why iron would be unsuitable for a toothbrush, the practitioner must be able to recognize the potential disparities between the practitioner and client's collective cultural capital and the examiner's cultural capital before an examiner evaluates the application or is even assigned to the application. The examiner serves as a gatekeeper, in that if the examiner fails to have the cultural capital necessary to recognize both definitions of "braces"—or imposes their viewpoint to assert that a PHOSITA would not have the cultural capital to make the same decisions—the inventor will not receive a patent for their work. If the practitioner fails to anticipate future disparate outlooks on the invention described in the application, the application may be doomed due to systemic biases built into the patent system.[84]

Inventors can work on their invention for years before coming to a patent practitioner. As someone with a high level of expertise in this invention and a resulting high level of cultural capital derived from their experience, an inventor may not be forthcoming about details necessary to make or use their invention. This is not because they want to keep their invention a trade secret. Rather, someone with a high subject matter expertise in their invention may have difficulty communicating the importance of every detail in their invention because the importance and details may seem obvious. For an inventor who has styled their hair their entire life, terms like "sealing ends," putting hair in a "protective style," and a "bonnet" need no further

84. The biases associated with the PHOSITA standard itself will be addressed in a separate, future article.

explanation.[85] However, if a patent practitioner does not understand these terms, they may use them incorrectly in the application. Furthermore, if an examiner determines that these words lack clarity and are indefinite, the patent practitioner and examiner cannot add these details to the patent application after submitting the patent application to the USPTO.[86]

It is more likely that a practitioner will miss including these details—like the utility of a design choice—if the practitioner is unable to use or relate to the client's invention. With little overlap in relevant cultural spaces between practitioner and inventor, the practitioner must acquire the cultural capital necessary to prosecute the patent application through external sources—from the client, research, or other lived experiences. If a practitioner has never used a toothbrush and cannot use one, they must learn about the toothbrush before they can write a patent application because they must be able to communicate this use to a PHOSITA. They will need to learn everything from the client—how the brush scrubs teeth, picks up toothpaste, is cleaned, and is stored—through language rather than experience. This communication requirement puts a bigger burden on clients whose attorneys are unfamiliar with the cultural-capital-derived subject matter of their invention and puts an especially large burden on clients whose practitioners cannot experience their invention firsthand.[87]

When a practitioner has no cultural capital relevant to the invention, this communication barrier becomes a larger hurdle to overcome. Even if the practitioner recognizes that the necessary cultural capital derives from a nonacademic source, they may fear making their client uncomfortable if they venture to ask important questions. Practitioners who write patents for feminine hygiene products, for example, may feel uncomfortable asking about what they perceive to be intimate details about a woman's menstrual cycle, especially if the practitioner does not have a menstrual cycle and the inventor does. A practitioner writing a patent for a Black hair-care product may be uncomfortable asking about different hair textures,

85. *See* Joanna Samuels, *The Ultimate Black & Natural Hair Glossary*, AFROCENCHIX (Jan. 13, 2021), https://afrocenchix.com/blogs/afrohair/the-ultimate-black-natural-hair-glossary [https://perma.cc/MG7S-2ULT].

86. *See* discussion *supra* note 57.

87. *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, 10:34 AM), https://www.mynewsdesk.com/sg/pitchmark/news/spanxs-founder-couldnt-afford-a-patent-attorney-so-she-figured-out-to-protect-her-ip-herself-441341 [https://perma.cc/TP93-8PUR] (describing how female inventor of Spanx looked for a female patent attorney because she thought "it would be easier to explain the idea to a woman").

wash day, or different hairstyles for fear of being perceived as a racist (especially if the practitioner does not have 4A–4C hair and the client does).[88]

Practitioners who are uncomfortable bridging gaps between speech communities may choose to import language from their own speech communities rather than use the language of their client. For example, if a practitioner refers to their toothbrush as an "electric toothbrush" rather than an "electric brush," they may choose to use this language in the application instead of their client's original "brush" term. Though this may seem harmless, the practitioner must confirm that their use of a different term does not import other definitions, evoke other associations, or otherwise override the intent of their client. Improper term use—especially deviating from the client's intent—may result in rejection of the inventor's patent application, patent invalidation during litigation, or a finding of noninfringement when a patent owner seeks to enforce their rights.

Cultural-capital-derived differences in lived experiences and speech communities between the practitioner and client affect communication and will affect the resulting patent application, especially if the practitioner has not received substantial training. In some situations, especially when the practitioner does not have the communication and social awareness skills to close this gap, clients may be required to create a prototype of their invention to communicate to their practitioner how to make and use their invention. Technically, this is not necessary under patent law because the practitioner is not a PHOSITA.[89] However, for the practitioner to write the patent application effectively, they also need to understand how to make and use the invention. Clients face larger communication barriers and access issues when their practitioners are not equipped to understand the nature of their invention.

It is especially important for practitioners with different lived experiences and different speech communities than their clients to have good cultural communication skills to overcome the obstacles commonly found in patent application drafting. Communication between practitioners and clients is key in determining the true definition of the

88. Ashley Walker, *The Different Types of 4a, 4b and 4c Hair and How to Care for Them*, INDIQUE (June 23, 2022), https://www.indiquehair.com/blogs/ultimate-blog/the-different-types-of-4a-4b-and-4c-hair-and-how-to-care-for-them [https://perma.cc/VXJ4-NFVT]. 4A–4C hair describes very curly and often fine hair.

89. Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. MPEP, *supra* note 5, § 2164; *see* Fromer, *supra* note 36.

invention, the uses of the invention, and the level of detail necessary to describe the invention to a PHOSITA.

### 2. Biases in the Examination Process

Once a patent application is submitted to the USPTO, the patent application will be sorted by a classification system into subject matter categories, and then an examiner with expertise in these categories will review the application to determine if the claims are allowable. This examiner, along with the interactions between the practitioner and examiner, can be another source of bias in the patent examination process.

The language and concept familiarity biases present during interactions between the patent practitioner and the inventor are paralleled in this examination process. This Article will focus on the personal biases of the examiner developed within this classification system. Biases in the categorization process and PHOSITA standard will be covered more thoroughly in a separate article.

Before an examiner reviews the patent application, the USPTO must determine which examiner has the appropriate specialty to review the application.[90] Patent applications are sorted by subject matter—ideally by something known as proximate function (or what the invention does)[91]—and then examiners who specialize in that subject matter will search for prior art relevant to the invention. Both this subject matter decision and the language within the specification add to biased interpretations of the scope of the invention.

As discussed above, two individuals who belong to different speech communities may have a more difficult time communicating effectively than if they both belonged to the same speech community.[92] A person's lived experiences inform their speech community, and in the case of an examiner, their art unit classification likely informs their

90. Examiners are selected from a pool of eligible individuals with applicable backgrounds, often in science or engineering; design patent examiners, however, must have art backgrounds. Sarah Burstein, *Design Patent Myths—On Examiners and Expertise*, FAC. LOUNGE (Oct. 30, 2013, 8:04 AM), https://www.thefacultylounge.org/2013/10/design-patent-examiners.html [https://perma.cc/N2H4-HQ4D]. This causes asymmetry in many areas of patent examination, including those discussed herein and in other subject matters. For example, design patent application examiners must have an art education background, but the attorney prosecuting the application must have a STEM background to practice. *See id.*; *see also* Sarah Burstein & Saurabh Vishnubhakat, *The Truth About Design Patents*, 71 AM. U. L. REV. 1221, 1249 n.140 (2022) (discussing the examiner and prosecutor requirements). This, we hypothesize, could also cause communication barriers between examiners, practitioners, and inventors.

91. 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, 568 (2014).

92. *See* discussion *supra* notes 72–76.

speech community. The speech community of the examiner—as well as their perception of the PHOSITA's speech community—informs, for example, choices examiners may make while searching relevant art and interpreting claims in the patent application.

First, the examiner's individual speech choices and the classification system collectively inform the examiner's initial search for relevant prior art. "Classification provides a method to search for relevant items independent from the ability of the searcher to think up relevant key words to include in the search statement."[93] The examiner, or the searcher, is tasked with the job of thinking up relevant words to search when determining whether an invention is novel and nonobvious. Additionally, the classification system provides further language constructs to define the scope of prior art. Prior art results will vary depending on the classification of the patent application, regardless of whether this was classification by hand or by machine.[94] For example, an examiner in a plumbing unit may reject tracheostomy tube inventions over hoses, but an examiner in a medical device unit may reject tracheostomy tube inventions over other medical devices with tubes because that examiner is more familiar with the prior art.[95] Any biases in the art unit classification, especially those stemming from a lack of understanding of the invention or the community of people of ordinary skill in the art, will affect the results of the search.

In the search and the resulting first office action, the examiner will compare the patent application claims to prior art, including previous patents and publications, to determine if the invention in the present patent application is novel and nonobvious in light of the prior art according to their constructed PHOSITA.[96] The examiner will also evaluate the application on enablement and written description grounds.

Every human is capable of importing their biases into supposedly neutral evaluations. The patent examiner has opportunities to import their biases both when constructing the PHOSITA and when

93. Simmons, *supra* note 91, at 569.

94. *See id.* at 569–71; Christina Sperry, *The USPTO's Patent Classification and Search Systems Have Jumped on the AI Bandwagon*, MINTZ (July 8, 2021), https://www.mintz.com/insights-center/viewpoints/2231/2021-07-08-usptos-patent-classification-and-search-systems-have [https://perma.cc/J899-AXCM] (explaining that the USPTO recently implemented AI as a means to sort patent applications). We do not argue that this reduces the biases imbedded in the classification process.

95. A tracheostomy tube is a tube placed in a person's trachea (or windpipe) to allow the person to continue breathing. *See Tracheostomy*, CLEVELAND CLINIC, https://my.clevelandclinic.org/health/treatments/23231-tracheostomy (last visited Dec. 19, 2023) [https://perma.cc/3R8A-V5MU].

96. 35 U.S.C. §§ 102-103 (explaining the novelty and nonobviousness requirements for patentability).

evaluating whether the claimed invention is novel, nonobvious, enabled, and sufficiently described based on their conception of the fictitious skilled person, the language developed in the patent search, and their perception of the language within the specification. This can all play like a biased game of telephone, where the translation from the inventor to the practitioner to the patent office in the initial drafting process affects the application's classification and the examiner's perception of relevant art—especially if the claimed invention relies on cultural capital not shared by the examiner or practitioner and not accounted for in the classification system.

If the examiner determines that the application is not allowable under 35 U.S.C. § 102,[97] 35 U.S.C. § 103,[98] or 35 U.S.C. § 112,[99] they will issue a rejection, or office action, on these grounds for the practitioner to refute. If this rejection is over nonanalogous art, the inventor must still pay for the practitioner's time and effort to respond to the office action.[100] The more biased and off base the examiner's understanding of the invention is, the more difficult the process will likely be to eventually receive an allowance.

Regardless of whether the office action is biased, the practitioner receiving the rejection must evaluate the substance and prepare a response strategy. To be successful, this response strategy must be both communicated to the inventor, such that the inventor understands the strategy and reason for the response, and understandable and persuasive to the examiner, such that the response allows the patent prosecution to progress. This requires an overlap in speech communities or an effort on the part of the practitioner to bridge the gap. Thus, a response strategy is more likely to be successful when the practitioner, examiner, inventor, and origin of the invention all derive from the same source of cultural capital. With inventions derived from minority-group cultural capital not shared by the examiner and practitioner, especially if the inventor uses speech derived from the same minority-group cultural capital, this communication response process will be more difficult.

Furthermore, once the lack of speech overlap is discovered in the office action, it may be too late to correct the speech gap between the description of an invention in the specification and the language the

97. *Id.* § 102 (novelty requirement).

98. *Id.* § 103 (nonobviousness requirement).

99. *Id.* § 112 (written description and enablement requirements).

100. *See, e.g.*, Non-final Rejection, U.S. Patent Application No. 15/249,364 (Mar. 7, 2019) (rejecting an application for an infant chair with a moisture-wicking material over a patent application for a wicker basket liner). Pursuant to MPEP Section 2141, the USPTO does not permit a rejection based on obviousness for nonanalogous art. MPEP, *supra* note 5, § 2141.01(a).

examiner needs to understand the invention and properly classify and analyze its patentability. When responding to a rejection—either over analogous or nonanalogous art—the practitioner must (1) recognize the analogous nature of the art, and (2) use the disclosure in the original patent application to form the basis of their response.[101] If the practitioner fails to include a detail in the specification (such as the size of the tracheostomy tube), they will likely be unable to use that detail later to overcome a rejection (like a rejection over a garden hose). Furthermore, even if the necessary detail is in the specification, if the practitioner fails to recognize that size differentiates the tracheostomy tube from the garden hose, they will be unlikely to recommend this option for amendment to the client. Therefore, the inventor may be disadvantaged in the patent process if their practitioner failed to anticipate the linguistic differences based on the art unit classification and the potential biases of the patent examiner. We suspect this disadvantage happens most frequently when an examiner does not share the cultural capital of the minority-group inventor and fails to bridge the communication gap. The examiner may be unable or unwilling to bridge the cultural gap without explicit language in the application.

The patent system has provided a mechanism for inventors to overcome perceived gaps in the specification: they can file a declaration to traverse the rejection.[102] Specifically, the declaration system allows an inventor to submit evidence outside of the originally filed application to overcome the rejection. For example, the inventor could present evidence in their declaration to show that any person skilled in the art would understand how to make and use the claimed invention without undue experimentation. If an examiner alleges that the term "brush" only referred to a hairbrush, the inventor can submit a declaration presenting evidence that a PHOSITA would understand that the term "brush" meant toothbrush based on the context of the specification. This declaration may be used to overcome the examiner's initial rejection, even if the term "tooth" did not appear and even if the examiner did not originally perceive this possibility and even if the examiner states in the office action that the support is not found in the specification.

To overcome the rejection with a declaration, the examiner must "personally review" the declaration "and decide whether . . . [the] declaration[ ] submitted under 37 CFR § 1.132 for the purpose of traversing grounds of rejection [is] responsive to the rejection and

101. *See* MPEP, *supra* note 5, § 2163; U.S. PAT. & TRADEMARK OFF., *supra* note 57.

102. *See* 37 C.F.R. § 1.132 (2023).

present[s] *sufficient* facts to overcome the rejection."[103] In other words, even this process is subject to bias on the part of the examiner and different methods of persuasion between speech communities shared (or not shared) between the practitioner, examiner, and inventor.

The examiner must then evaluate the declaration to see whether the declaration's contents are sufficient in light of the specification to overcome their rejection or if the examiner still believes that the rejection should stand. The examiner will consider all evidence, including the evidence the examiner collected and the evidence in the declaration (rebuttal evidence), to make a final determination about whether the "totality of the rebuttal evidence . . . fails to outweigh the evidence"[104] found by the examiner.

It is possible that the difference in opinion between the examiner and the other parties is based more in the different lived experiences of the inventor and the examiner. This can be especially prominent in inventions derived from nonacademic educational experiences, including religious familiarity, language familiarity, and hair-type familiarity.[105] This bias in unshared knowledge between inventors of inventions derived from minority-group cultural capital and majority-group examiners and attorneys often deprives minority-group inventions of worthy patents because of the communication gaps.

### 3. Bias in Affordability

Differences in majority and minority groups, including cultural biases, disparate lived experiences, and linguistic differences, affect the cost of the patent application process. Typically, when charging for a patent, a practitioner either offers a fixed-fee plan or a pay-per-hour plan.[106] On a pay-per-hour plan, the client pays a fee for every tenth of an hour that the practitioner spends drafting the patent application. On a fixed-fee plan, the client pays a set fee for the practitioner to draft a

103. MPEP, *supra* note 5, § 716 (emphasis added).

104. *Id.*

105. *See, e.g.*, U.S. Patent Application No. 29/721,266 (filed Jan. 20, 2020) (this application for an icosahedral Hebrew dice exemplifies the knowledge of PHOSITA within this space and includes the difference between a Hebrew letter and a picture-character); *see also* U.S. Patent No. 8,262,393 (directed to a rosary bead device and not rejected over an abacus bracelet, which has a similar counting device mechanism, likely because of the ritual, religious nature of the PHOSITA using the rosary-bead device); *Abacus Counting Bracelet- Knitting Jewelry- Aqua Blue*, AMAZON, https://www.amazon.com/Abacus-Counting-Bracelet-Knitting-Jewelry/dp/B0796WJ7KG (last visited Dec. 19, 2023) [https://perma.cc/RB3Q-HWGJ] (example of abacus bracelet over which the rosary bead device patent was granted).

106. *Cf.* David L. Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 ALA. L. REV. 335, 338–39, 353–55 (2012) (discussing both types of fees in patent litigation).

patent application, regardless of the number of hours the practitioner spends drafting the application.

Either payment plan likely results in disparate and negative systemic effects on those inventions derived from minority-group culture not shared by or known to the practitioner. On a pay-per-hour plan, the client will pay for the initial intake, follow-up interviews, research, and writing related to their patent application. The practitioner will likely bill more for a patent application with new subject matter than for a patent application with familiar subject matter because the practitioner needs to learn more about the new subject before writing the application. The practitioner may need to ask their client more questions to understand the invention, and they may also need to do additional research to assist in their comprehension. Practitioners may also revise more often when composing a patent application based on unfamiliar subject matter. All of these costs are passed on to the client.

The other option, fixed fee, also has drawbacks. Fixed fee is a predictable method to keep costs down, but practitioners are motivated to put in minimal effort for onetime clients.[107] Minimal effort still requires a practitioner to perform their duties competently, but there is little motivation to work harder than necessary to file the application. Practitioners in this case might be less motivated to put in the work necessary to understand and write a patent application with an unfamiliar technology. This lack of motivation will likely affect inventors with the inventions most unfamiliar to the practitioner. If the practitioner has little motivation to truly understand the invention, inventions with larger unfamiliarity will likely have lower-quality applications.

If this was merely a subject matter concern—like a client who invented in a chemistry space but initially went to a software-specializing practitioner—the client could find a better specialist. Clients inventing products derived from a minority-group culture[108]—

107. *See* Michael K. Henry, *The Pros and Cons of Fixed-Fee Budgets for Patent Prosecution*, HENRY PAT. L. FIRM (Mar. 21, 2019), https://henry.law/blog/fixed-fee-budgets-pros-cons/ [https://perma.cc/6BVM-HZH9] ("With a fixed-fee schedule, attorneys are incentivized to complete their work with as little effort as possible, because they get paid the same regardless.").

108. *See* Donald I. Templer & Kimberly Tangen, *Jewish Population Percentage in the U.S. States: An Index of Opportunity*, 3 COMPREHENSIVE PSYCH. (2014) (Jewish lawyers comprise 3.3 percent of all attorneys in the United States); *Diversity in Patent Law: The Pipeline Is Broken*, NAT'L COUNCIL ON PAT. PRACTICUM (Sept. 2, 2021), https://thencpp.org/diversity-in-patent-law-the-pipeline-is-broken [https://perma.cc/9BKP-NW2U] ("According to a survey by the American Intellectual Property Law Association, only 1.8 percent of IP attorneys are African American, 2.5 percent are Hispanic or Latino and less than 0.5 percent are Native American. These numbers decrease when you consider just the practice of patent law.").

like Black hair-care products or Jewish ritual products[109]—likely have two options. First, they can try to find a practitioner who shares their minority-group cultural capital—either because the practitioner and client have a cultural overlap or because the practitioner previously gained the necessary cultural capital through other lived experiences. If this fails, the inventor can hire a practitioner, knowing that they will have to pay to increase the cultural capital of their practitioner so that the practitioner can then become versed enough in the subject matter to write the patent application. With less than two percent of all patent attorneys in the United States identifying as Black, we suspect that clients inventing in the Black hair-care space are unlikely to find a practitioner who shares their lived experience and are disproportionately required to pay extra to increase the cultural capital of a previously unknowledgeable practitioner.

Finally, the bias in affordability extends to the funds available to startup inventors. Black scientists are less likely than their white counterparts to receive funding.[110] As discussed below, venture capital money is disproportionately distributed to white founders of startups over Black founders of startups.[111] Without funding, Black inventors must either self-fund their applications or rely on pro bono services.

Selection for these pro bono services is fraught with biases. For example, if a practitioner were selecting a candidate for a potential pro bono project, the practitioner would try to select inventions with high success potential. This could include whether they perceived the client to be a good businessperson and whether the product had the potential for wide success.

This success potential, however, is necessarily biased by the practitioner's perception of the world and their personal experiences. If the practitioner does not understand how an invention works, has never had the need for the new invention, and does not know anyone other than the inventor who would use the invention, the practitioner is less likely to believe in the future success of the inventor's product. The

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109. *See* David Zvi Kalman, *Patents . . . There's a Great Future in Patents.*, TABLET (July 5, 2015), https://www.tabletmag.com/sections/community/articles/future-in-patents [https://perma.cc/8BJM-8N3U] (describing a patented device relating to the practice of Shabbat).

110. Jeffrey Mervis, *Study Identifies a Key Reason Black Scientists Are Less Likely to Receive NIH Funding*, SCIENCE (Oct. 9, 2019), https://www.science.org/content/article/study-identifies-key-reason-black-scientists-are-less-likely-receive-nih-funding [https://perma.cc/72GD-H2JA].

111. *See* Kathryn Ross & Tom Lounibos, *Bridging the Black Founders Venture Capital Gap*, ACCENTURE (Feb. 16, 2022), https://www.accenture.com/us-en/insights/technology/black-founders [https://perma.cc/Q2BE-53EH] ("In 2020, venture capital investors funneled $150 billion to startups. But only approximately 1% of those funds were distributed to Black founders."); *infra* notes 179–182 and accompanying text (discussing the disproportionate fraction of venture capital investments received by Black entrepreneurs).

potential practitioner's lack of understanding likely has a substantial impact on inventions derived from minority-group culture; for example, with a majority-white attorney population, inventions for Caucasian hair products may be selected for pro bono services more frequently than Black hair-care-product inventions.[112] This is not because practitioners are incapable of the research necessary to account for these factors in pro bono selection. Rather, it is because patent practitioners' training currently lacks cultural-humility training,[113] and there are few avenues for patent practitioners to learn to remedy the current situation. Furthermore, because it takes additional effort to convey the importance of an invention derived from minority-group culture to someone with experiences derived primarily from majority-group culture, many inventors may be discouraged and may not even apply for a patent.[114]

## II. CASE STUDY: BLACK HAIR-CARE PATENTS

Biases and disparate cultures among inventors and practitioners create gaps in access to practitioners, knowledge of the patent system, and patent prosecution for those inventing in minority-group cultural spaces. Though many populations are adversely affected in a variety of ways by the current legal system, and we acknowledge that many of the disparities described herein likely apply to many underrepresented populations, this Part focuses on how Black inventors and small business owners are affected by a largely racially homogenous and culturally blind patent prosecutorial system.

The patent prosecution story of Brigitte Gopou and Bruce Boyd, two Black inventors in the hair-care space, highlights some of the difficulties inventors face when leveraging their minority-group cultural capital in the U.S. patent system.[115] The patent prosecution

112. When Sara Blakely launched Spanx (shapewear for women), she had a difficult time convincing male attorneys that her invention was a good business idea. PITCHMARK, *supra* note 87.

113. *See Cultural Humility Trainings*, UNIV. OF WASH. TACOMA https://www.tacoma.uw.edu/oga/cultural-humility (last visited Dec. 19, 2023) [perma.cc/SC84-QRNW] ("[T]he focus of cultural humility is on self-evaluation, self-critique, and developing awareness of one's own culture."). The patent bar does not require cultural-humility training.

114. *See, e.g.*, Leigh Buchanan, *This Entrepreneur Just Became One of the Few Black Women in the U.S. to Raise More Than $1 Million from VCs. First, She Had to Turn Down $500,000.*, INC. (Oct. 9, 2019), https://www.inc.com/leigh-buchanan/naturall-club-muhga-eltigani-richelieu-dennis-new-voices-fund-black-women-founders.html [https://perma.cc/FH4S-FT5P] (talking about how Muhga Eltigani, the 28-year-old founder of a subscription service for natural hair-care products, spoke to many potential investors who "didn't get her or her business").

115. *Cf.* Kara W. Swanson, Essay, *Race and Selective Legal Memory: Reflections on* Invention of a Slave, 120 COLUM. L. REV. 1077, 1078 (2020) (showing that the disparate access to the patent

history for their hair-sculpting device exemplifies how the patent process can fail to account for differences in speech communities and lived experiences when defining both the PHOSITA and analogous art. Failing to account for cultural aspects of an invention outside of a purely academic or mechanical construction can result in a hermeneutical injustice. An inventor is attempting to share their knowledge, but systemic prejudices prevent them from arriving at a place of justice.[116]

In other words, practitioners and examiners may perceive patent applications to not have the critical information necessary to enable someone to make and use the invention. Inventors may resort to revising claims in an application such that the patent application issues with a nonideal set of claims because the true novelty was not captured in the claim language according to the implicit language biases of majority-group practitioners and examiners. The USPTO may determine that a patent application lacks critical information, such as sufficient written description in full-enough terms "to enable any person skilled in the art to which it pertains . . . to make and use the same"[117]—even if a member of the relevant minority-group culture would have enough information to make and use the invention. Some inventors may—by choice or necessity—pursue patent protection without the assistance of a practitioner because they cannot find a practitioner with the cultural-capital overlap necessary to persuade them to take on their case and may nevertheless successfully write the patent application. Though this may save money and allow the inventor to use their idiolect to describe their invention, Gwen Jimmere's patent prosecution history shows how this lack of attorney assistance can also result in a narrow patent.

### *A. Brigitte Gopou and Bruce Boyd: Understanding the Invention*

Lack of minority-group cultural capital among both practitioners and examiners can have a disparate impact on underrepresented inventors, especially those using their minority-group cultural capital to invent.[118] The story of Brigitte Gopou and

system for Black inventors was actively formalized in 1858 with Jeremiah S. Black's *Invention of a Slave* opinion).

116. *See* FRICKER, *supra* note 24, at 4 (discussing the "testimonial injustice" that occurs when a hearer's prejudice "causes him to give the speaker less credibility").

117. 35 U.S.C. § 112.

118. Not every attorney lacks cultural competency, and not every case where an attorney represents an inventor in the Black hair-care space results in a narrow patent. *See, e.g.*, U.S. Patent No. 10,799,006, at [56], col. 1 (filed June 14, 2019) (describing patented hair-twisting system and method of manufacture for those with "African-American hair" and listing attorney and law firm). The example provided above is just one of many examples where inventors pursuing

Bruce Boyd's journey to obtain a patent for their hair-care invention demonstrates how a lack of understanding of the invention itself can lead to an overburdening of the inventor, an incomplete specification, and an improperly written claim set. Because the current patent evaluation process does not accommodate nonacademic cultural knowledge and does not actively challenge practitioners' and examiners' implicit biases, this lack of understanding is compounded at every level of the examination process such that the "neutral standards" of the patent process cease to exist for those inventing in underrepresented spaces.

Moreover, if the examiner does not understand the claimed invention or does not account for the nonacademic cultural knowledge of a PHOSITA, they may use nonanalogous references to reject the application.[119] Without recognition that the references are nonanalogous, the practitioner may improperly amend the claims, cancel otherwise allowable claims, or fail to reasonably inform their client about the status of the matter at hand. Even with recognition that the references are nonanalogous, practitioners may suggest amending claims to get the application allowed faster for inventors who are not financially able to continue the process, rather than writing claims that would generate the broadest patent and cost more time and effort to get allowed.

Gopou and Boyd invented NuDred, a hair-sculpting tool designed to twist 4A–4C hair, and formed Nu-You Technologies, LLC to manufacture and sell their hair-sculpting device.[120] The hair-sculpting device is colloquially referred to as a hair sponge and has a handle portion attached to a pliable portion (sponge) with bores spaced and sized to shape and style hair.[121] Their hair sponge created a twisted hairstyle within minutes when the hand-twisting method took hours. It could be used for children and adults who did not have the time, money, or patience for a hand-twisted style, and it was versatile enough to work for those with short hair and long hair. Gopou, who worked in the Black hair industry as a stylist, and Boyd, who had worn his hair in an Afro

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an invention in the Black hair-care space received limited patent protection—even when helped by a practitioner.

119. *See* MPEP, *supra* note 5, § 2141.01(a).

120. McDole Williams, *Nu-You Technologies Files Patent Infringement Lawsuits Against Industry Competitors*, PR NEWSWIRE (Oct. 27, 2015), https://www.prnewswire.com/news-releases/nu-you-technologies-files-patent-infringement-lawsuits-against-industry-competitors-300167060.html [https://perma.cc/55SE-F8XE]; Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

121. *See NuDreds: Categories*, NUDRED, https://nudred.com/collections/sponges (last visited Dec. 19, 2023) [https://perma.cc/46QF-3XGA] (depicting and describing the NuDred and its functionality).

and dreadlocks, knew they could leverage their cultural capital—their knowledge derived from these experiences—to experiment with different materials, including those popular in Africa, to arrive at their final prototype. Gopou emphasized that, as a stylist, she used to hate doing the twist style before inventing the hair sponge because "it was so nasty [with] the comb, the gel . . . ."[122] This invention allowed more people with 4A–4C hair to access this twisted hairstyle from the comfort of their own homes. When Gopou and Boyd successfully used their invention on their toddler son to create a twisted hairstyle within minutes, they knew they "had a tiger by the tail" and wanted to pursue patent protection for their invention.[123]

Gopou and Boyd enlisted an attorney to file claims directed to the hair-sponge device itself, as well as a method of using the device.[124] They selected the attorney because he was inexpensive, in that he was willing to reduce his fee in exchange for physical fitness training sessions from Boyd. This was the first time Gopou and Boyd pursued patent protection for an invention, and as Gopou recalls, "[They] didn't know the questions [they] could ask, because [they] didn't know the process."[125] During the intake process, Boyd showed the attorney how to use the product on Boyd's own hair. As Boyd explained, the attorney, a white man, would not be able to use the hair sponge effectively on his own hair because of the different texture of Caucasian hair. During the intake and disclosure process prior to filing the patent application, Boyd sat with the attorney to explain the history of the hair sponge, including the experimental process necessary to arrive at the final prototype.

After receiving the full disclosure, the attorney wrote and filed the application in the United States on August 24, 2004.[126] Gopou and Boyd did not know of any option to file their application internationally. As Boyd recounts, he didn't "recall being fully knowledgeable" but likely would have been interested in filing internationally had he been given the opportunity.[127]

The application discusses how the device is used, describing how the sponge is pulled across the hair tangentially and the bores "caus[e]

122. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

123. *Id.*

124. U.S. Patent Application No. 10/925,126, at [0025] (filed Aug. 24, 2004). In the interview, Boyd discussed how he met this patent attorney during a physical fitness class. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

125. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

126. Hair Sculpting Device & Methods, U.S. Patent No. 7,198,050 (filed Aug. 24, 2004) (issued Apr. 3, 2007).

127. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23. A patent for devices to style 4A–4C hair would likely be valuable in places whose population is comprised of a large percentage of people with 4A–4C hair.

clumps of said hair to be formed at substantially regular intervals that are a function of the distance between ones of said spaced-apart bores."[128] The patent application also included specific composition parameters, explaining that the device can be made of foam with certain tensile strength, elongation, tear resistance, and compression.[129]

We note at this stage that, during the interview, neither Boyd nor Gopou called their invention a clumping device. They specifically used the word "twist" to describe both the style and the method of use.[130] However, the attorney used the word "clumps" to describe the resulting hairstyle in the claims section of the patent application.[131] This may indicate a language gap between the inventors and the attorney that was not overcome over the course of the intake and initial patent prosecution process.

The USPTO sorted the application into art unit 3732, class/subclass 132/210.[132] Technology Center 3700 "provides examination for patent applications including Mechanical Engineering, Manufacturing and Products."[133] Class 132 subclass 210 is directed to hair-treatment processes.[134] The corresponding Cooperative Patent Classification ("CPC"),[135] A45D, is directed to hairdressing or shaving equipment and the additional CPC, A47K, is directed to sanitary equipment.[136] Though there is no record of how the application for a hair-care product was classified as a piece of sanitary equipment, we suspect that the sponge-like appearance of the device played a primary

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128. U.S. Patent Application No. 10/925,126 (filed Aug. 24, 2004).

129. *See id.* at [0020]:

> In an exemplary embodiment, the pliable member 110 is formed from open cell polyurethane foam, Product Number 90180GY20, as supplied by Future Foam, Inc. (1610 Avenue N; Council Bluffs, Iowa 51501). As based on ASTM test methods, the exemplary open cell foam has the following specifications: density of 1.80 ± 0.1 lbs./cu. ft.; tensile strength of 15 p.s.i. (minimum); elongation of 125% (minimum); tear resistance of 1.50 lbs./lin. inch (minimum); compression set @ 50% comp. of 10% (maximum); and indent. force deflection @25% of 90 ± 9 lbs./50 sq. in.

130. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

131. U.S. Patent Application No. 10/925,126 (filed Aug. 24, 2004). We also note that the patent application does not use the term "sponge," but both Gopou and Boyd use the term "sponge" when describing their invention. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

132. Hair Sculpting Device & Methods, U.S. Patent No. 7,198,050 (filed Aug. 24, 2004) (issued Apr. 3, 2007).

133. *Patent Technology Centers Management*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents/contact-patents/patent-technology-centers-management (last updated Mar. 23, 2023, 8:58 AM) [https://perma.cc/XK46-WNRD].

134. *Index to Classification - H*, U.S. PAT. & TRADEMARK OFF. 1, https://www.uspto.gov/web/patents/classification/uspcindex/indexh.pdf (last visited Dec. 19, 2023) [https://perma.cc/49AT-UP5D].

135. *Cooperative Patent Classification*, U.S. PAT. & TRADEMARK OFF. 9 (2023), https://www.uspto.gov/web/patents/classification/cpc/pdf/cpc-scheme-A.pdf [https://perma.cc/AUF2-JN4Z].

136. *Id.* at 11.

role in this classification decision. Regardless, because the patent application was classified as hairdressing equipment and sanitary equipment, the patent application was then examined by a USPTO examiner specializing in that art unit—which likely affected linguistic choices to search for prior art, the examiner's perception of the invention, the examiner's subjective understanding of the specialized knowledge necessary to communicate the novel details of the invention, and how the examiner communicated this perception to the attorney and inventor.

For example, if an examiner specializes in hair-treatment processes and sanitary equipment, they have likely developed a specialized knowledge and advanced language within these subfields. However, subspecialties—like specialized knowledge in the field of Black hair care (likely the most relevant field for a Black hair-care product)—are not a necessary, central component to those with advanced knowledge in this space. Likely, this examiner—like most hairdressers in the United States—had little knowledge of the Black hair-care industry,[137] and this translated to the prosecution history of the NuDred technology.

Injustices in the patent prosecution process only began to snowball after the classification process was complete. In the inventors' first rejection, mailed from the USPTO on February 3, 2006, the examiner rejected the device claims and allowed the method claims.[138] The examiner claimed that the device was not novel or obvious[139] in light of U.S. Patent No. 1,943,365 ("Borden")[140] and U.S. Patent No. 2,588,773 ("Smith").[141] Borden is a patent describing a bath sponge with drainage ducts to increase the soap capacity and help with easy cleaning.[142] Similarly, Smith is a patent for a lathering sponge that is adapted to hold an entire bar of soap in the middle of the sponge.[143] Notably, the examiner rejected Gopou and Boyd's patent application for a *hair* sponge over two *bath* sponges, neither of which discuss how they could be used to shape hair.[144]

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137. *See* Lauren Valenti, *The Hairstyling Industry Has a Racism Problem, and It Starts with Beauty School*, VOGUE (July 8, 2020), https://www.vogue.com/article/hairstyling-industry-racism-bias-beauty-cosmetology-school-salons-red-carpet [https://perma.cc/V2UZ-HNEL] (detailing the lack of education within the hairstyling industry regarding textured hair beginning in beauty schools and extending to salons).

138. Non-final Rejection, U.S. Patent Application No. 10/925,126 (Feb. 3, 2006).

139. *Id.*

140. Bath Sponge or the Like, U.S. Patent No. 1,943,365 (filed Jan. 13, 1933).

141. Soap Holding and Lathering Sponge, U.S. Patent No. 2,588,773 (filed Mar. 22, 1948).

142. '365 Patent.

143. '773 Patent.

144. Non-final Rejection, U.S. Patent Application No. 10/925,126 (Feb. 3, 2006).

In the obviousness rejection, the examiner concluded that "the differences between the claimed invention and the prior art (Smith and Borden) are such that the claimed invention as a whole would have been obvious . . . to a person having ordinary skill in the art to which the claimed invention pertains."[145] In other words, a PHOSITA would read Smith and Borden and, from their teachings and common sense, conclude that the claimed invention is merely "the predictable use of prior art elements" in Smith and Borden.[146] The examiner also alleged that Smith and Borden are analogous art, in that they are "either in the field of [Gopou and Boyd's] endeavor or are reasonably pertinent to the particular problem with which [Gopou and Boyd were] concerned."[147]

Here, the examiner essentially alleged that a PHOSITA would find bath sponges analogous art to a hair sponge and that any innovation for using a bath sponge on a person's hair would be an obvious leap. This allegation seems to stem from differences in cultural capital between the examiner, the attorney who wrote the patent application, and the inventors.[148] These differences include the purpose and definition of a sponge, the difficulty of creating a twisted hairstyle, and the questionably analogous nature of a bath sponge and a hairstyling tool. Moreover, when examining Smith and Borden in detail, it is questionable whether repurposing their teachings would work in a hair context—indicating that the examiner may not have sufficient cultural capital necessary to understand the invention as written and may not have been able to access resources to supplement their lack of cultural capital.

It is unlikely that using the sponges described in either Smith or Borden would produce a hair shape created by Gopou and Boyd's hair sponge, given that Borden and Smith are both for rubber bath sponges and the hair sponge is made of polyurethane (a plastic material).[149] These materials are decidedly different and have different purposes in the hair-care space. Rubber—like a rubber band—can pull and break hair but can be excellent at cleaning the body and gripping slippery items like soap. Plastic—which is used in many hair combs today—does no such thing and is much more suited for a hair application.

The attorney could have amended the device claims to specify that the hair device was made of plastic, emphasizing that the two

145. MPEP, *supra* note 5, § 2141 (quoting 35 U.S.C. § 103).

146. *Id.* (quoting KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 417 (2007)).

147. *Id.*

148. This is likely also influenced by the PHOSITA construction, which will be further addressed in a future work.

149. *See* U.S. Patent Application No. 10/925,126 (filed Aug. 24, 2004); U.S. Patent No. 1,943,365 (filed Jan. 13, 1933); U.S. Patent No. 2,588,773 (filed Mar. 22, 1948).

materials were different. The attorney also had the option to accept the method claims without putting any additional arguments on file. After receiving a notice of allowance, the attorney could then file a second application to pursue the remaining device claims.[150] The attorney chose neither of these options.

Instead, the attorney substantially narrowed the device claims in their response.[151] The attorney did not revise the device claims to distinguish the hair sponge from the bath sponges. Instead, the attorney revised the device claims to a "kit claim"[152]—a claim where the inventor patents the bundling of "two or more items together in a kit to be combined by the end user at the time of use."[153] In this case, the kit claim required someone to sell both the hair sponge and a styling gel to directly infringe on the new claim or instruct someone to combine the hair sponge and a styling gel to induce infringement.[154] Though a kit claim certainly can be valuable, especially when pursuing contributory infringement in litigation, an inventor "will likely receive fuller protections" by patenting individual components.[155]

This is not necessarily a choice made from ignorance or gaps in cultural capital between the inventor and attorney; sometimes choices to amend claims narrowly are purely budgetary. The attorney filed the patent application in August 2004 and received a response from the patent examiner in February 2006.[156] It is possible, especially in a startup, that the inventors did not have the budget to fight the erroneous rejection from the USPTO, especially after waiting eighteen months to hear from the patent office. If the examiner disagreed with their assertion that plastic and rubber were different enough to distinguish the prior art, the examiner would have issued another rejection and not only further delayed the process but also caused the

150. *See* Notice of Allowance, 37 C.F.R. § 1.311 (2023) ("If, on examination, it appears that the applicant is entitled to a patent under the law, a notice of allowance will be sent to the applicant . . . .").

151. *See* Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 10/925,126 (Mar. 20, 2006).

152. *Id.* at 9 ("The invention recited in claim 1 is directed to a kit for sculpting hair; the kit includes both a handheld sculpting device *and* a styling liquid."); *Patent Kit Claims: Everything You Need to Know*, UPCOUNSEL, https://www.upcounsel.com/patent-kit-claims (last visited Dec. 19, 2023) [https://perma.cc/LS7T-6T6R].

153. UPCOUNSEL, *supra* note 152.

154. *See id.* (defining "kit claim"); Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 10/925,126, at 8 (Mar. 20, 2006) ("Claim 1 recites . . . A kit for sculpting hair, said kit comprising: a handheld sculpting device . . . and a styling liquid.").

155. UPCOUNSEL, *supra* note 152*;* Zoom Interview with Tom Irving, Partner, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP (June 15, 2022).

156. *See* Non-final Rejection, U.S. Patent Application No. 10/925,126 (Feb. 3, 2006) (representing the first response from the patent examiner as February 3, 2006 and listing the filing date as August 24, 2004).

inventors to pay additional money for another response. The inventors, therefore, may have agreed to narrow their claims in the hopes of accelerating the allowance process and having a patent sufficient to prevent others from contributorily infringing their invention.[157]

The response, however, did not result in an allowed patent. Upon receiving this response, the examiner rejected all claims—including the originally allowed method claims.[158] The examiner rejected the claims over U.S. Patent No. 6,325,565 ("Girardot"), which is a patent for an antiperspirant applicator.[159] The examiner argued that, inherently, placing the antiperspirant applicator on hair would cause clumps to be formed at the bores. The attorney rightfully pointed out in the response that the examiner provided "no supporting rationale for such alleged inherency."[160]

Once again, by rejecting the hair-sponge claims over Girardot, the examiner alleged that a PHOSITA would view an antiperspirant applicator as analogous art for a hairstyling device.[161] Regardless of the type of claim—device, method, or product-by-process—the average person attempting to make and use a hair product likely is not looking to antiperspirant applicators for utilitarian design features. However, the application was not only classified in a hair-treatment art unit; it was also classified in the sanitary-equipment art unit.[162]

Not only does the classification define the scope of the examiner's search,[163] but the classification also defines the scope of the examiner's experience. As Abraham Maslow famously stated, "If the only tool you have is a hammer, you tend to see every problem as a

157. In the interview, Boyd and Gopou stated that there was no such financial question in this particular case. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23. This was a choice simply recommended by their attorney, and they trusted the recommendation. *Id.* However, it is important to note that many startup companies are financially conscious during the patent application process and, therefore, we chose to acknowledge this possibility. *See Patent Prosecution for Lean Startups: Seven Steps for Protecting Your Early-Stage Ideas*, BAKER BOTTS (Aug. 1, 2022), https://www.bakerbotts.com/thought-leadership/publications/2022/august/patent-prosecution-for-lean-startups [https://perma.cc/75HE-UAE7] (explaining how financial limitations can make the patent process challenging for start-ups).

158. Non-final Rejection, U.S. Patent Application No. 10/925,126 (May 8, 2006).

159. Anti-perspirant/Deodorant Applicator, U.S. Patent No. 6,325,565 (issued Dec. 4, 2001).

160. Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 10/925,126, at 10 (Aug. 14, 2006).

161. *See In re* Klein, 647 F.3d 1343, 1348 (Fed. Cir. 2011) (citations omitted):

> A reference qualifies as prior art for an obviousness determination under [35 U.S.C.] § 103 only when it is analogous to the claimed invention. "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 with which the inventor is involved."

162. *See supra* notes 132–136 and accompanying text.

163. Biases in the classification process will be addressed in a future article.

nail."[164] The examiner, likely more familiar with sanitary equipment, compared a hair sponge to kitchen sponges and antiperspirant applicators as relevant prior art because of their sanitary-related cultural capital accumulated at work. Examiners are not trained to overcome this hammer-nail familiarity bias. Instead, this classification and the resulting rejection show that the examiner will default to and heavily favor using art known in their field of work, even if the subject matter of the invention may not be entirely analogous to that field. The system leverages cultural capital typically gained by an examiner against the cultural capital of the minority group necessary to create and understand the invention.

Regardless of this systemic bias, the attorney still failed to amend the claims to include any structural differences between the antiperspirant applicator and the hair sponge in the response to this second office action.[165] Though a different argument was persuasive and eventually resulted in the allowance of the method claims, the patent was issued without claims directed to any physical device.[166]

The case history does not document the inventors' response to their attorney attempting to explain why *bath* sponges or antiperspirant devices were preventing allowance of their patent claims to a *hair* sponge. However, as Boyd recalled, he did not understand why the bath sponges were relevant. The rejections, to him, were very confusing. He did not agree that the bath sponges with holes were the same as his invention—or even the same type of object. The rejection seems to stem from a mismatch in identifying relevant prior art. The examiner alleged that a PHOSITA would look to bath sponges when designing a hair sponge. The inventors disagree: the hair sponge is not used with water, the hair sponge is not made of the same material as a bath sponge, and a bath sponge cannot make the twisting hairstyle. This mismatch stems from a lack of cultural overlap, understanding, and humility.

The inventors are subject to systemic bias because their cultural capital—derived from understanding how to style 4A–4C hair—is undervalued and underutilized throughout the patent process. Though the attorney did conduct intake interviews with the clients, the patent application fails to demonstrate that the attorney used their

164. *"If the Only Tool You Have Is a Hammer, You Tend to See Every Problem as a Nail."*, FITZROVIA PSYCH. CLINIC, https://thefitzroviaclinic.com/if-the-only-tool-you-have-is-a-hammer-you-tend-to-see-every-problem-as-a-nail/ (last visited Dec. 19, 2023) [https://perma.cc/R2RX-JZ92] (attributing the title quote to Abraham Maslow).

165. Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 10/925,126 (Aug. 14, 2006).

166. Hair Sculpting Device and Methods, U.S. Patent. No. 7,198,050 col. 4 (claims).

resources—including the clients—to acquire sufficient cultural capital to write and argue the patent application successfully. The resulting patent application and prosecution history show that the attorney did not understand what made the invention different from other products, did not account for additional systemic barriers their clients would face in communicating to the examiner the nuances of the hair product derived from minority-group cultural capital, and did not fully account for the potential impact of their substitutions between majority- and minority-group-derived languages.[167]

First, the prosecution history shows that the attorney did not fully understand what made the invention different from other products. The attorney accepted the examiner's argument that polyurethane in the invention was just a design choice—easily substituted for rubber.[168] This was easily overlooked by someone unfamiliar with the Black hair-care space or someone who failed to understand the different functions between a body sponge and a hair sponge—in other words, someone lacking cultural capital in the Black hair-care space. However, those who have acquired sufficient cultural capital—those actively working in a hair-care space and familiar with Black hair-care products, like the inventors—would likely recognize that the choice to use polyurethane was an ingenious decision and would have pushed back on the examiner's argument.[169]

A quick internet search (supplementing one's cultural capital) can show that plastic—like polyurethane—does not pull on hair the way rubber can and, likely, that the choice to use polyurethane was utilitarian.[170] Anyone who has put a rubber band in their hair instead of a plastic clip understands that rubber pulls at hair in a different way than plastic. The utilitarian reason for this choice of material—and other choices including bore size, shape, and angle of the hair sponge—is never provided in the specification.[171]

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167. For example, the attorney did not use the client's description of the invention as "twists of hair" in the detailed description of the patent application. U.S. Patent Application No. 10/925,126 (filed Aug. 24, 2004). Instead, the attorney described the device as causing "clumps of hair to be formed at substantially regular intervals." *Id.* This is a lexicographic substitution of the inventors' speech community for the attorney's.

168. *See* Final Rejection, U.S. Patent Application No. 10/925,126, at 3 (Oct. 16, 2006) ("[I]t would have been obvious . . . [to form] the device of polyurethane, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use . . . .").

169. There is no record to demonstrate whether this question was brought to the inventors for analysis and comment.

170. *See, e.g.*, *Why Coil Hair Ties Are Better for Your Hair*, MILK + SASS (Nov. 24, 2020), https://www.milkandsass.com/blogs/news/why-coil-hair-ties-are-better-for-your-hair [https://perma.cc/PD56-KMVN] ("[P]lastic makes for an easy removal without pulling . . . .").

171. '050 Patent.

This may indicate that there were several missed opportunities between the clients and the attorney to include the inventors' cultural capital in the patent application process—describing the importance of individual features, assessing the value of a product in this space, including technical knowledge needed to create the object, and determining how to best overcome the rejections to obtain a patent.

Even if the attorney felt like there was no choice but to amend the claims to be directed to a kit claim, not accept the method claims, or even fail to distinguish between a plastic hair device and a rubber sponge, it seems like some of these choices may have been made because the attorney failed to include sufficient language necessary to distinguish the product at hand from a body sponge in the initial application.[172] The attorney did not include enough language derived from minority-group cultural capital to prosecute the application in light of the supplied prior art. They chose to use their own descriptors for the clients' hairstyle invention instead of their clients' words—with no added benefit. For example, the attorney chose to describe the resulting hairstyle as having "clumps" instead of "twists." Overall, the attorney did not include a description of how or why the device worked in the patent application but concentrated on the result of using the device.[173]

By not including details about how the device was different from other sponges, the specification could not support any later argument based on this difference. Then, when the rubber sponges were presented to the attorney, the attorney did not respond with the differences in texture, material, and purpose between the prior art and the device he was attempting to patent.[174] The final patent is likely less broad than initially anticipated by the clients, and objectively less broad than it could be, based on indications in the current, publicly available prior art in the patent case file.

This seems unfair. A stronger patent might have been issued if the application had included more language known in minority-group culture, if the client had communicated these differences effectively to either the USPTO or the attorney, and if the examiner was able to better filter how the classification system and their own cultural capital may bias their search and rejection process. As Gopou remembered:

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172. Non-final Rejection, U.S. Patent Application No. 10/925,126 (Feb. 3, 2006) (rejecting device claims because they were anticipated by body sponges); Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 10/925,126 (Mar. 20, 2006) (seeking a kit claim for the device and liquid).

173. U.S. Patent Application No. 10/925,126 (filed Aug. 24, 2004).

174. Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 10/925,126 (Mar. 20, 2006).

> I really think race has a lot to do with it because of the cultural background. Sometimes, you don't have to explain every detail when you know [information about the culture already]. When it comes to hair, it's totally different for African Americans . . . . The sponge works according to the texture. The examiner [did not] see it in the same way. He put deodorant in the same category. How can that work on hair? . . . It's not fair.[175]

Although there is no way to know whether the substance argument—the difference between plastic and rubber—would have been effective, the lack of effort from the attorney in asserting this difference appears to be an oversight. Boyd noted that when he told the attorney about Nu-You's success with the hair sponge, the attorney seemed surprised. Boyd felt like that surprise stemmed, in part, from the attorney's lack of passion and foresight into the success of this product. Boyd mentioned that he was "almost sure if it was a Black attorney, [the attorney] would have seen the vision."[176] Boyd further clarified that an attorney did not need to have a certain race or background to competently prosecute the invention but did note that familiarity with the Black hair-care industry would have likely helped. Given that the attorney chose to partially barter for his services, exchanging legal fees for private physical training sessions with Boyd, it seems as if the attorney prioritized physical fitness sessions over potentially receiving a part of the future company profits.[177]

This Article addresses three main reasons for discomfort with this outcome. First, the knowers (inventors) understood the uniqueness of their invention at the time of filing, but the lack of communication between the knower and the listener (attorney) resulted in that uniqueness not being highlighted. Second, the attorney failed to include some aspects of the uniqueness of the invention in the filing, resulting in the inventors not receiving a patent on their device. Third, the examination process failed to include the cultural distinctions necessary to recognize that a body sponge and an antiperspirant device are not art analogous to a hair sponge. If the attorney had researched more about the materials used to create the device or why the shape of the bores was unique—that is, if the attorney had acquired more relevant cultural capital—the inventors may have received a stronger

175. Interview with Brigitte Gopou and Bruce Boyd, *supra* note 23.

176. *Id.*

177. Designing alternate compensation mechanisms is complicated and often fraught with legal and ethical issues. When attorneys do decide to use an alternative compensation structure, most choose to use equity and interest in lieu of direct cash payment, in accordance with 37 CFR § 11.108 and other legal and ethical obligations, rather than bartering for other goods or services. *See* Cedric A. D'Hue, *May Patent Practitioners Take Equity or Interest Instead of Cash for Patent Application Preparation and Prosecution Services?*, LINKEDIN (May 24, 2016), https://www.linkedin.com/pulse/may-patent-practitioners-take-equity-interest-instead-cedric-a-d-hue/ [https://perma.cc/GT2F-N9GK] ("According to 37 CFR § 11.108(i)(3), a practitioner may take an interest in the patent or patent application as part or all of the practitioner's fee.").

patent. If the examination process was more nuanced, where examiners were trained to overcome biases from overexposure to academic-based education and the narrow CPC system, the attorney may have received more tailored rejections and not rejections based on nonanalogous art.

It should be noted that, although this is not the broadest possible patent, Boyd and Gopou have been very successful in litigation. This patent has been asserted at least seven times in court—with five permanent injunctions, one sanction, and one undisclosed settlement.[178] However, there is no way to determine how much money could have been earned if the application had been written and argued differently. Until they began litigation, Boyd and Gopou did not know they had only a method patent. There was no way for them to assert that the knockoff products infringed their patent, only that the devices on the market induced infringement of the method claims. The final outcomes of these cases might have been different if the examination process was less biased and if the attorney had gained more cultural capital in Black hair care during or before the patent prosecution process.

### *B. Gwen Jimmere: Pro Se Inventor*

Though Boyd and Gopou's hair-sponge invention process featured many instances where the lack of shared cultural capital between inventors and their attorney resulted in reduced patent protection, this analysis should not be construed to indicate that those inventing with minority-group cultural capital should refrain from seeking legal help. Pro se patent prosecution does not necessarily result in a better patent. The process seems to just trade one cultural communication obstacle for another.

A patent practitioner who is inexperienced in an invention relying on cultural capital outside of an academic space may add to lexical ambiguity and compound communication barriers about the invention in the prosecution process. However, the practitioner does have experience and important cultural capital in the field of patent prosecution. Much like how an inventor will be disadvantaged if their

178. *See* Nu-You Techs. LLC v. Bee Sales Co., No. 3:15-cv-03432 (N.D. Tex. May 23, 2016) (settling with permanent injunction); Nu-You Techs., LLC v. Beauty Town Int'l Inc., No. 3:15-cv-03433, 2017 WL 4297229 (N.D. Tex. Aug. 24, 2017) (undisclosed settlement as to Nu-You's indirect infringement claims); Nu-You Techs., LLC v. Eltoweissy, No. 3:15-cv-03434 (N.D. Tex. Sept. 27, 2016) (awarding Nu-You $4,481 in attorney's fees); Nu-You Techs. LLC v. DSK Corp., No. 3:15-cv-03435 (N.D. Tex. Aug. 15, 2016) (permanent injunction); Nu-You Techs. LLC v. Jehan Corp., No. 3:15-cv-03436 (N.D. Tex. Sept. 2, 2016) (permanent injunction); Nu-You Techs. LLC v. Chee-Ping, No. 3:15-cv-03437 (N.D. Tex. Sept. 22, 2016) (permanent injunction); Nu-You Techs. LLC v. Dream World Inc., No. 3:15-cv-03438 (N.D. Tex. Nov. 22, 2016) (permanent injunction).

patent practitioner cannot acquire sufficient cultural capital to prosecute the patent application, a pro se inventor's ability to acquire the legal cultural capital necessary to prosecute their own patent directly affects the outcome of their patent prosecution process.

Gwen Jimmere became the founder of a beauty company, Naturalicious, and "the first [B]lack woman to own a patent for a natural hair care product."[179] It took more than one hundred years after Madam C.J. Walker became "the first Black woman millionaire in America" from her Black hair-care-product company[180] for a Black woman to own a patent for a natural hair-care product. Given that the Black hair-care industry is worth over $2.5 billion in the United States, this seems like a large time lapse between monetary success and intellectual property rights.[181] However, with Black startup entrepreneurs receiving only 1.2 percent of all venture capital investments in the United States,[182] it is likely that part of the patent gap has to do with choices to save money in the patent process. Instead of paying an attorney, many inventors with limited financial resources choose to file a patent application without legal assistance. Without a competent liaison to impart cultural knowledge of the legal world, pro se applicants may lack the cultural capital necessary to prosecute their patent applications optimally.

Jimmere's experience patenting her product in the hair-care industry highlights the failure of the pro se system to help inventors of color obtain the necessary cultural capital for optimal success in the patent process. Jimmere developed her product, a Rhassoul clay hair treatment, by "researching and mixing ingredients in her kitchen" and then pitching her invention to Whole Foods.[183] Thinking she did not have enough money to apply for a patent, she researched patent law for six to eight months on her own and then filed her patent application pro se. In an interview with the Intellectual Property Owners Education

179. *Gwen Jimmere: Entrepreneur, Patent History Maker*, INTELL. PROP. OWNERS EDUC. FOUND. (Nov. 17, 2015), https://www.ipoef.org/gwen-jimmere-entrepreneur-patent-history-maker/ [https://perma.cc/XV5S-NESR].

180. *Madam C.J. Walker*, HISTORY, https://www.history.com/topics/black-history/madame-c-j-walker (last updated Mar. 15, 2022) [https://perma.cc/4MLB-Q6FZ].

181. *See The Significance of Black Hair*, GARFIELD MESSENGER (Feb. 28, 2022), https://www.garfieldmessenger.org/7807/articles/features/the-significance-of-black-hair [https://perma.cc/Z9WU-QB4U] ("The maintenance required for Black hair further emphasizes its value in the Black community. The Black hair care industry is worth more than $2.5 billion, with Black women spending two to six times as much on hair care than their white counterparts.").

182. *See* Marlize van Romburgh & Gené Teare, *Funding to Black Startup Founders Quadrupled in Past Year, but Remains Elusive*, CRUNCHBASE NEWS (July 13, 2021), https://news.crunchbase.com/venture/something-ventured-funding-to-black-startup-founders-quadrupled-in-past-year-but-remains-elusive/ [https://perma.cc/JP9D-TDGQ].

183. INTELL. PROP. OWNERS EDUC. FOUND., *supra* note 179.

Foundation, Jimmere explained that she did not use an attorney to file her application because the cost was prohibitively expensive and there was no guarantee for a positive outcome.[184]

Jimmere's original patent application was well written–especially for someone with no formal patent training. When Jimmere filed U.S. Patent Application No. 14/273,011 on May 8, 2014, she knew to claim two aspects of her invention: the natural hair-care product itself and a method of preparing the composition.[185] She also knew to claim broadly, directing her hair-care-product claim to a composition with the following ingredients: "a shampoo or cleansing agent comprising Rhassoul clay combined with water; a conditioning agent derived from a plant material; a detangling agent derived from a plant material; and a preservative."[186] This shows that Jimmere gained a considerable amount of legal cultural capital from her own research.

Like most patent applications, the patent office did not allow Jimmere's application at first.[187] After receiving a rejection on January 28, 2015, Jimmere withdrew the claims to the method and amended the remaining claims.[188] She claimed the relative amounts by weight of every ingredient in her composition and included an additional component (phenoxyethanol) and its weight.[189] These amendments were successful, resulting in the issuing of U.S. Patent No. 9,107,839 on August 18, 2015.[190]

Obtaining a patent as a pro se applicant is a commendable feat. Seventy-six percent of all pro se applications fail to issue as a patent, compared to thirty-five percent of applications filed with the assistance of a representative.[191] The following analysis is in no way meant to criticize Jimmere's accomplishment but rather to highlight areas of the legal system that failed to support Jimmere's efforts and resulted in her obtaining a narrower patent than she was likely otherwise entitled to own. If she had the assistance of counsel who could provide additional cultural capital in the form of legal aid, or if there had been a more

184. *Id.* ("First, I knew it was expensive; I had researched the costs and the lowest attorney fee was $10,000 and that wasn't even with the filing fees. And of course, if you don't get the patent, you don't get that money back.").

185. Hair Care Composition, U.S. Patent Application No. 14/273,011 (filed May 8, 2014).

186. *Id.* (claims).

187. *See* Michael Carley, Deepak Hegde & Alan Marco, *What Is the Probability of Receiving a U.S. Patent?*, 17 YALE J.L. & TECH. 203, 207 (2015) (reporting only 11.4 percent of all patent applications are allowed at a first office action).

188. *See* Applicant Arguments/Remarks Made in an Amendment, U.S. Patent Application No. 14/273,011, at 4 (Mar. 26, 2015) ("Claims 1-3 have been amended. Claims 4-5 have been cancelled and Claim 6 have been withdrawn as a result of restriction requirement.").

189. *Id.* at 6.

190. Hair Care Composition, U.S. Patent No. 9,107,839 (issued Aug. 18, 2015).

191. Gaudry, *supra* note 32, at 1, 1–2.

equitable patent system designed to support inventions like Jimmere's by allowing pro se inventors to gain all cultural capital necessary to obtain a patent pro se, she may have obtained a stronger patent.

First, the USPTO instructed Jimmere to pursue only the hair-care product or the method of preparing the product because the examiner alleged that these were two distinct inventions.[192] Later, when the composition claims were allowed, Jimmere did not attempt to rejoin the method claims and was not reminded of her rights to rejoin.[193] Therefore, Jimmere only obtained a patent protecting the composition and did not make an additional, subsequent effort to protect the method.[194] Though there is no way to predict for certain whether the examiner would have allowed Jimmere to rejoin the withdrawn claims, there is no record showing an attempt. There is also no record of communication from the patent office reminding Jimmere of her right to rejoin the claims at the time of allowance. This is one area where pro se inventors lack insight into cultural norms—attempting to rejoin likely allowable claims—and the USPTO fails to effectively and timely communicate this right.

Second, when Jimmere edited her claims, she added several limitations to overcome the prior art cited by the examiner.[195] She added claims directed to the weight of water, clay, conditioning agent, detangling agent, and preservative.[196] She further limited the preservative to include phenoxyethanol. Though these did help overcome the rejection, practitioners rarely add this many limitations at once to overcome a rejection.[197] Each limitation added to an independent claim reduces the scope of the claim and limits the breadth of the patent. If a claim is too broad, it likely will get rejected over other known inventions. However, a claim that is too narrow, even though allowed as a patent, is less likely to be enforceable against others in the hair-care industry because the claims are easily designed around. If, for example, a bad actor made Jimmere's compound but added less than forty percent or more than forty-five percent water by weight, they

192. Non-final Rejection, U.S. Patent Application No. 14/273,011, at 2 (Jan. 28, 2015) (suggesting restriction to either claims 1 through 5, drawn to a composition for hair, or claim 6, "drawn to a method of preparing multi-benefit hair care composition").

193. MPEP, *supra* note 5, § 821.02 ("Note that even if an election was made without traverse, claims directed to nonelected species and nonelected inventions that are eligible for rejoinder should be rejoined . . . .").

194. *See* '839 Patent cols. 4–5 (only claiming the composition).

195. Amended Claims, U.S. Patent Application No. 14/273,011 (Mar. 26, 2015).

196. *Id.* at 6.

197. Zoom Interview with Anonymous (June 16, 2022).

would not infringe on the patent at hand.[198] This reduces the monetary value of the patent.

As of June 2022, Jimmere's patent has never been asserted in court, potentially indicating that there is little to gain by enforcing the patent or that the claims have been crafted too narrowly to enforce against copycats.

There are two potential reasons for Jimmere to amend her claims narrowly at this stage of the patent process. First, there was a significant gap in cultural capital derived from the legal system—the knowledge that each added limitation narrows the resulting patent and, typically, patent attorneys add limitations one at a time. Second, like the financial factors relevant to the patent prosecution of Boyd and Gopou's hair sponge, there may have been a financial reason for Jimmere to accelerate the allowance of her patent by amending her claims narrowly. This second scenario is far less likely in Jimmere's case, given that she was prosecuting her own patent application. She did not need to pay an attorney to file an office action response. She also invested at least six months of her time to write the original patent application. Therefore, we believe this is indicative of a cultural-capital gap in the prosecution process for pro se inventors.

Regardless of the patent prosecution outcome, Jimmere's product has been a business success. Those who used the product understood that this was a "gold mine."[199] Nevertheless, this awareness did not seem to translate to offers of reduced- or deferred-cost legal services. If any patent prosecutor recognized at the time of filing that this product would generate a business worth millions of dollars, they would have likely deferred Jimmere's payment requirements in exchange for acquiring a long-term, lucrative business client.[200] However, cultural capital derived from Black hair-care spaces—and recognition of the value of Black hair-care spaces—is likely limited

198. *See* '839 Patent col. 4, l. 66–67 (claiming a composition consisting of Rhassoul clay, "combined with water in a range of 40–45% by weight"). It may be possible to prove infringement under the doctrine of equivalents, but this is a much more difficult path to a successful patent infringement claim than literal infringement. *See* M. Scott Boone, *Defining and Refining the Doctrine of Equivalents: Notice and Prior Art, Language and Fraud*, 43 IDEA 645, 659–60 (2003) (presenting criticisms of the doctrine of equivalents in patent analysis).

199. INTELL. PROP. OWNERS EDUC. FOUND., *supra* note 179.

200. *See 60. $32 to 7 Figures Selling Natural Hair Care Products*, NACHÉ SNOW, https://nachesnow.com/60-32-to-7-figures-selling-natural-haircare-products/ (last visited Dec. 19, 2023) [https://perma.cc/CQG9-4C4D] (describing how Jimmere's business grew to earn seven figures each year).

among the average patent attorney, given that only 1.7 percent of all U.S. intellectual property attorneys are Black.[201]

## III. NEXT STEPS

The cases above demonstrate how the U.S. patent system disadvantages, underserves, and discriminates against individuals inventing with their minority-group-derived cultural capital. These capital gaps—accompanied by wealth and legal access gaps—play a large part in the underrepresentation of Black inventors in the United States.[202] Inventors bear a disproportionate burden to supplement their attorneys' and examiners' cultural capital, especially when their invention is derived from minority-group culture not shared among a majority of practitioners and examiners. This Part suggests ways to rectify disparate outcomes in the patent system and in the legal system writ large.

### *A. Patent System Amendments*

The patent system disparately and negatively affects those inventing with minority-group-derived cultural capital as soon as those inventors begin interacting with the patent system. Lack of understanding due to disparate cultural backgrounds, different speech communities, and poor attempts at communication all contribute to negative experiences for these inventors throughout the patent process. We propose amending elements of the patent system to reduce the cultural-capital gaps between practitioners, examiners, and clients. This includes amending the intake processes, advancing USPTO search tools, and improving access to competent pro bono services and pro se support.

#### 1. Amending Intake Processes

First, many practitioners fail to recognize how their biases affect their work product, including preferring their own word choice over the

201. *See* Ian Lopez, *Black IP Lawyers Who've Made It Look to Grow Ranks Beyond 1.7%*, BLOOMBERG L. (Aug. 6, 2020, 4:16 AM), https://news.bloomberglaw.com/ip-law/black-ip-lawyers-whove-made-it-look-to-grow-ranks-beyond-1-7 [https://perma.cc/JM6J-GE8X].

202. *See* Matthew Bultman, *For Black Inventors, Road to Owning Patents Paved with Barriers*, BLOOMBERG L. (July 14, 2020, 5:01 AM), https://news.bloomberglaw.com/ip-law/for-black-inventors-road-to-owning-patents-paved-with-barriers [https://perma.cc/EF2W-UX6B] ("Black people and other minority inventors have been left behind for many reasons, including too few resources, a lack of access to capital, and a low level of awareness of the patenting system in general, according to consultant Janeya Griffin.").

client's, choosing to not ask questions about their client's product because they are uncomfortable with the topic, not accounting for the potential examiner's lack of cultural capital, and failing to account for areas of novelty between the presented prior art and the client's invention. We propose that patent practitioners revise their intake process to address concerns of potential bias, especially to ensure that they will write a patent application fully describing all features necessary to teach any person skilled in the art "to make and use the full scope of the claimed invention without undue experimentation."[203] Two steps must be taken: First, practitioners must recognize their own biases, and if they choose to write patent applications in subject matters where they lack exepertise, they must take measures to supplement their cultural capital in those areas. Second, practitioners should not supplement those areas by overburdening underrepresented inventors and requiring those inventors to be fully responsible for teaching the practitioner about the field of the invention.

To recognize potential biases early in the process, the practitioner must account for the following factors: (1) Is the inventor using their cultural capital to invent? (2) To what extent do I (the practitioner) share this cultural capital? (3) And to what extent does the average patent examiner in the likely art unit share this cultural capital? This can help the practitioner assess how they can best assist the inventor in writing and arguing the patent application, and if they choose to write the patent application, this can help illuminate knowledge areas that the practitioner may need to supplement before submitting the patent application or response.

After recognizing the potential for bias by taking the above factors into account, the supplementation process begins. This supplementation process can be biased and can disproportionately affect inventors leveraging their minority-group cultural capital to create a new machine or process. Mitigating bias involves finding ways to effectively supplement the practitioner's cultural capital without overburdening clients whose cultural capital overlaps with fewer practitioners and examiners due to the lack of diversity in patent practice.

For example, if an inventor asks a patent practitioner to help patent the inventor's hairbrush, the practitioner can refer the client to a different patent practitioner or accept the case. Assuming the practitioner chooses to accept the case, the practitioner has a few resources to help research the invention and write the patent

203. Sean B. Seymore, *Heightened Enablement in the Unpredictable Arts*, 56 UCLA L. REV. 127, 130 (2008).

application to the best of their ability. First, the practitioner can ask the client to disclose all information about the invention and supplement the attorney's cultural capital. Second, the practitioner can use internal documents at their firm to help write the application and self-supplement their cultural capital. Third, the practitioner can supplement their cultural capital by using outside resources—like publicly available patents and their prosecution histories—to provide language and template pathways known to result in a granted patent to use in the current patent application writing process.

As established above, it is absolutely necessary for a practitioner to ask the client to disclose all information about the invention. However, even if the client describes every piece of the invention as thoroughly as possible, the practitioner still needs to be able to convert this description into a patent application. This conversion process usually involves both internal and external searches through patent databases to ensure that common strategies toward a successful patent examination process are preserved. For example, if it is common to revise claims to include the length of bristles or the handle material for a hairbrush before allowance, a practitioner writing a hairbrush application will likely include these details in the final specification based on their research on existing patents and applications. The amount of information needed to effectively be conveyed to the patent practitioner before they can write the application differs based on the cultural-capital gap between the practitioner and the inventor.

At the very least, the practitioner must gather all information necessary to write the application. However, promoting improved disclosures by asking more questions to a client is not—in and of itself—a solution to patent equity gaps, even if it is a way to increase the cultural capital of a practitioner. While it is important for practitioners to recognize subject matter that they are unfamiliar with and to supplement their knowledge as best as possible, relying on clients to supplement this knowledge cannot be the only solution. Expecting a client to supplement the practitioner's knowledge disproportionately burdens clients whose invention is derived from minority-group cultural capital not commonly shared in the relevant art unit at the USPTO. Currently, patent prosecution is set up such that the less cultural-capital overlap there is between the practitioner and client, the more both the practitioner and client must work to overcome that cultural-capital gap. Herein, we propose solutions to address this disparity.

If a practitioner was an expert in writing hairbrush patents and the client asked them to compose a hairbrush patent application, the practitioner would rely on their client's knowledge and disclosure less

than a practitioner who was an expert in software patents. This is just one example of how the magnitude of cultural-capital overlap affects the patent prosecution process. Simply assuming that a client will supplement a practitioner's knowledge disproportionately affects those whose inventions are derived from cultural capital acquired outside the knowledge of a typical patent practitioner. For example, Boyd and Gopou's curl-sponge invention (used on very curly, fine hair[204]) is likely not an invention that cultural-majority-group attorneys (in this case, white attorneys) would regularly use, recognize as useful in their everyday lives, or regularly talk about.[205]

Though there are white practitioners who are certainly competent and able to protect a hair-sponge invention (likely because some have researched such products and/or have acquired cultural capital in Black hair-care products), we hypothesize that the vast majority of patent practitioners do not fit into this category.[206] Therefore, due to disparate cultural-capital knowledge acquisition between the average practitioner and the inventor of the hair sponge, an inventor patenting in this space would likely need to take more time and energy to supplement the average practitioner's knowledge in this field than an inventor patenting in a hairbrush space tailored to those with European ancestry.

The practitioner who is concerned about overburdening their inventor may default to internal firm documents to write a patent application. However, this supplementation process does not resolve all problems at hand arising from the imbalances described herein. Certainly, if the firm has experts in hairbrush patents for many inventors, the internal firm documents might be ripe with examples to help the practitioner write a new patent application and increase the practitioner's relevant cultural capital. However, new clients are taken in and represented by a firm if there is no conflict of interest between

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204. *What's the Difference Between 4a, 4b, and 4c Curl Types?*, HAIRFLAIR, https://www.hairflair.com/2021/08/24/whats-the-difference-between-4a-4b-and-4c-curl-types/ (last visited Dec. 19, 2023) [https://perma.cc/2PZE-UVTD].

205. *See Do Races Have Different Hair?*, HEALTHY SOLS., https://www.healthysolutionsweb.com/do-races-have-different-hair/ (last visited Dec. 19, 2023) [https://perma.cc/755Z-GTKT] (explaining that white individuals typically have straight or wavy hair, unlike those of African descent, who typically have tight curls); *Lawyers by Race & Ethnicity*, AM. BAR ASS'N, https://www.americanbar.org/groups/young_lawyers/projects/men-of-color/lawyer-demographics/ (last visited Dec. 19, 2023) [https://perma.cc/6UVD-SJTQ] (noting that the majority of attorneys in the United States are white).

206. *See* AM. BAR ASS'N, *supra* note 205 (describing overrepresentation of white men and women in the legal profession); Ruth Sayers, *Lived Experiences in Research – Opportunities and Problems*, MCPIN FOUND. (Jan. 6, 2017), https://mcpin.org/lived-experiences-in-research-opportunities-and-problems/ [https://perma.cc/YCP5-MEK7] ("[A]ll researchers need to reflect on how their own status and the total of their life experiences will always influence their work.").

their body of work and the law firm's other clients. Therefore, it is unlikely that the law firm would have a substantial library of patent examples for the attorney to use when composing a new client's first application. We do not recommend that a practitioner only rely on their clients and internal firm documents to supplement their cultural capital.

The practitioner should also use the third proposed option—outside resources—to supplement their cultural capital. Many outside resources, from libraries to the USPTO to the internet, are available for practitioners. In the Subsection that follows, we propose ways to improve some of these resources.

### 2. Advancing USPTO Search Tools

The USPTO has several search tools that practitioners and inventors can use to research patents. The USPTO also has bulk databases where they store information about every published application and granted patent. Each patent can be accessed if a person knows the title, subject matter, patent examiner's name, patent application number, or inventors on the patent.[207] However, there is currently no function where someone can search by the practitioner who composed the application.

Our first proposal to improve patent applications—especially to reduce cultural-competency gaps in patent applications—is to introduce a new search function for the USPTO search tools. When researching a client's invention before writing a full patent application, practitioners use search tools to determine if patents have been written about similar inventions.[208] This helps practitioners not only identify prior art but also identify ways previous practitioners have written similar applications.[209] However, for now, these results can only be grouped by options such as file date and subject matter. Even if a practitioner wanted to, they cannot readily determine the expertise of any practitioner who wrote a patent application from the contents of the application. Therefore, the practitioner attempting to find a model to use when writing their patent application is forced to use a template

207. *Patent Public Search Basic (PPUBS Basic)*, U.S. PAT. & TRADEMARK OFF., https://ppubs.uspto.gov/pubwebapp/static/pages/ppubsbasic.html (last visited Dec. 19, 2023) [https://perma.cc/66ZS-2SCE].

208. *See Seven-Step U.S. Patent Search Strategy*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/sites/default/files/documents/patent-7step-classification.pdf (last visited Dec. 19, 2023) [https://perma.cc/F7LC-4WZM] (explaining how to search for prior art using a search tool).

209. Interview with Anonymous, in N.Y.C., N.Y. (June 19, 2022); *see* U.S. PAT. & TRADEMARK OFF., *supra* note 208 (explaining how to use search tools to examine various facets of prior art).

that may have close subject matter without knowing whether the practitioner who wrote the template is experienced in that subject matter.

In our reformulation of the USPTO search tools, practitioners and inventors should still search for inventions by subject matter. However, a search function should be added to this search tool capable of identifying the drafter of each patent application such that the searcher could group and order results by experienced drafter as well as closest relevant subject matter. The searcher could see the most experienced patent practitioners who wrote the most patents and applications in that particular subject matter or those with the highest allowance rates.[210] This would be equivalent to searching for practitioners with high cultural capital in a given subject matter, regardless of their USPTO classification, and would likely result in better templates chosen at the beginning of the patent application process.

This additional search function could either be implemented directly in the USPTO's Patent Center or developed by a private party. Google Patents, for example, is also used by practitioners when composing patent applications and could also implement these additional search features.[211] Either way, such a system would help identify practitioners who are the most experienced writers in a particular subject area, allowing patent application writers to model their patent applications off of the most experienced workers in their field rather than just the most relevant application by subject matter. Implementation of this feature will lead to more efficient services, lower costs, and better-quality searches for patent practitioners.

### 3. Improve Pro Bono and Pro Se Support

Our next proposal is to improve access to pro bono services and pro se support. The USPTO pro bono program is celebrated as an opportunity to match "volunteer patent attorneys and agents with financially under-resourced inventors . . . to provide free legal assistance in securing patent protection."[212] However, this program can

210. Note that this would work if all patent practitioners were credited equitably. *Cf.* Jordana R. Goodman, *Ms. Attribution: How Authorship Credit Contributes to the Gender Gap*, 25 YALE J.L. & TECH. 309, 352–60 (2023) (discussing the potential implications that gendered misattribution can have on patent prosecution).

211. GOOGLE PATS., patents.google.com, (last visited Dec. 19, 2023) [https://perma.cc/D9SD-ZJD8].

212. *Patent Pro Bono Program: Free Patent Legal Assistance*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents/basics/using-legal-services/pro-bono/patent-pro-bono-program (last updated Aug. 29, 2023, 4:38 PM) [https://perma.cc/F4BW-8BZC].

be improved by adding funding options to support pro bono inventors. Although there are many volunteers helping underserved inventors, many more could be helped if the inventors received funding for inventions related to specific subject matters to promote better distribution of funds to traditionally under-resourced areas.

The questionnaire to match volunteer patent professionals with inventors is often subject matter based in that the questionnaire typically asks the practitioner to list subject matters that they are experts in.[213] For example, practitioners in Massachusetts looking to volunteer are asked to include their "technical expertise (life sciences, mechanical engineering, physics, etc.)."[214] Though this will certainly help inventors who are creating in the academic or STEM space, inventors who are looking for someone familiar with Black hair care may have a more difficult time discerning which practitioner to use. There should be an additional prompt to allow practitioners to voluntarily disclose information or to allow inventors to seek out additional information about other areas of cultural competency such that inventors can easily obtain assistance for patent protection in areas outside of academic expertise.

Further, we recognize that, even with improved access to attorneys and less bias in the legal profession, some inventors will still decide to file pro se. Patent and Trademark Resource Centers ("PTRCs") were built "to support the intellectual property needs of the public and provide assistance with patent and trademark research."[215] Librarians receive annual training "in the areas of patents, trademarks, and copyright on site at the [USPTO] . . . [and disseminate] patent and trademark information."[216] However, this program is not necessarily widely recognized.[217] A free resource like this, as readily accessible to the public as any other library resource, is an excellent way to assist pro se inventors with common patent questions.

Rather than just receiving training from the USPTO, librarians should receive assistance from practioners, who can provide free information regarding up-to-date claim and specification drafting

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213. *See, e.g.*, *For Attorneys and Law Students*, ARTS & BUS. COUNCIL GREATER BOS., https://artsandbusinesscouncil.org/for-attorneys-and-law-students/ (last visited Dec. 19, 2023) [https://perma.cc/WX5B-RMGT].

214. *Id.*

215. Martin Wallace & Suzanne Reinman, *Expanding the Intellectual Property Knowledge Base at University Libraries: Collaborating with Patent and Trademark Resource Centers*, ISSUES SCI. & TECH. LIBRARIANSHIP 1 (Mar. 2018), https://rc.library.uta.edu/uta-ir/bitstream/handle/10106/27292/ISTL_MS_201708_01-REV2.pdf [https://perma.cc/AWK2-GFZ3].

216. *Id.* at 1–2.

217. *See id.* at 15 ("Over half of the respondents to the initial survey indicated that they were not aware of the PTRC program.").

practices to supplement the librarians' cultural capital in the legal patent process. PTRCs could support these efforts by offering their facilities for workshops. PTRCs may also facilitate conversations for STEM students, aspiring patent attorneys, interested entrepreneur-inventors, and experienced attorneys so that individuals have a better sense of those who work in and want to be present in the inventor space.

Practitioners could give free lecture sessions at the library, or at least they could advertise their sessions at the local bar association, such that both librarians and pro se inventors can benefit from their guidance firsthand. As a result of this engagement, librarians will be able to guide inventors in identifying whether a claim is compliant with USPTO rules and regulations. PTRC-trained librarians can also illustrate how patent claims should be written to maximize the probable scope of protection. Should these inventors later hire a patent practitioner, they will understand whether the practitioner-drafted claims are drafted in a way that complies with normative practice.

Third, the USPTO must better train their examiners to not import their own cultural biases when examining a patent application. There is no reason to reject an application for a hair product over an antiperspirant device. The USPTO should explore employing a set of anthropologists or sociologists to recognize disparities in the cultural capital of their examiners leading to disparate treatment of inventions stemming from minority-group cultural capital. These anthropologists and sociologists could also examine the systemic structural biases in the USPTO, including how examiners construct their definition of a PHOSITA and the cultural biases within art unit categorization.

### *B. Reform Legal Education*

In addition to reforming educational resources after law school, the legal community should support law school reform to increase the cultural capital of future generations of attorneys and teach those attorneys how to supplement their cultural capital equitably. Students become lawyers in the hopes of helping others, and teaching students how to be culturally competent attorneys can only serve to help students meet that goal.[218] Students also currently believe that "their legal training somehow makes lawyers less prone to thinking about and acting on stereotypes or biases than other people" and that they

218. *See* Renwei Chung, *10 Reasons to Attend Law School from Rising 1L Students Throughout America*, ABOVE THE L. (May 3, 2019, 6:41 PM), https://abovethelaw.com/2019/05/10-reasons-to-attend-law-school-from-rising-1l-students-throughout-america/ [https://perma.cc/7TTD-SHQP] (quoting the responses of rising 1Ls to the question of how they hope to use their law degree to change the world).

"understood their own biases and could identify them and know when they were acting upon their own perceptions" better than an average person, by virtue of legal training that has no antibias component.[219] In other words, students believe they are immune from cultural-capital bias—and not just in patent law.

Law schools are already required to "provide training and education to law students on bias, cross-cultural competency, and racism . . . at the start of the program of legal education, and . . . at least once again before graduation."[220] However, this training is not enough to address the legal and ethical concerns of a practice disparately affecting those in minority cultural groups. Law schools should expand their curriculum to include discussions of cultural humility, encouraging future "practitioners to become self-aware and self-critical in order to understand how their own identities, beliefs and practices impact on their interactions with clients. Practitioners must also ask what structural forces come into play when addressing client issues and how to engage around these issues in meaningful ways."[221] Cultural humility "makes explicit the interaction between the institution and the individual and the presence of systemic power imbalances."[222] This curriculum should be complemented by a rigorous evaluation system to ensure its effectiveness.

There exists an "obligation of lawyers to promote a justice system that provides equal access and eliminates bias, discrimination, and racism in law [that] should be among the values and responsibilities of the legal profession to which students are introduced."[223] This includes increasing the average minority-group cultural capital of lawyers and law students to reduce biased and racist outcomes and procedures in the patent process.

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219. Shahrokh Falati, *The Makings of a Culturally Savvy Lawyer: Novel Approaches for Teaching and Assessing Cross-Cultural Skills in Law School*, 49 J.L. & EDUC. 627, 645 (2020).

220. Memorandum from the Am. Bar Ass'n Standards Comm. to the Council of the Section of Legal Educ. and Admissions to the Bar 8 (May 7, 2021), https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/council_reports_and_resolutions/may21/21-may-standards-committee-memo-proposed-changes-with-appendix.pdf [https://perma.cc/E4QD-HHD7].

221. Marcie Fisher-Borne, Jessie Montana Cain & Suzanne L. Martin, *From Mastery to Accountability: Cultural Humility as an Alternative to Cultural Competence*, 34 SOC. WORK EDUC. 165, 175 (2015).

222. *Id.* at 177.

223. *About Standard 303*, UNIV. OF ST. THOMAS, https://law.stthomas.edu/about/centers-institutes/holloran-center/about-standard-303/ (last visited Dec. 19, 2023) [https://perma.cc/Z8LM-V7EQ] (quoting the ABA House of Delegates' interpretation of Standard 303(c)).

Racism does not just mean Jim Crow racism.[224] Students must be taught to recognize the "commonsense racism" of beliefs that racial stereotypes are considered natural.[225] They must also be provided opportunities to identify and challenge "colorblind racism"—where people "rationalize minorities' contemporary status as the product of market dynamics, naturally occurring phenomena, and blacks' imputed cultural limitations."[226] To eliminate these biases, students can learn to recognize the lack of diversity in their profession and in their clients as a starting point to facilitate discussions about the reasons for that lack of diversity and the impacts of that disparity. Though many reasons for the lack of diversity in clients and the legal profession rest on societal structures outside of law students' control, they can learn to recognize small portions of this leaky pipeline where they can make a difference.

The adage, "you never get a second chance to make a first impression" is apt here. When meeting with clients, it is important to put them at ease.[227] Unconscious conversation can affect this interaction, and a negative interaction between an attorney and a client can lead to suboptimal results.[228] Students should learn to develop language bridging speech communities to make clients of all backgrounds, races, genders, and socioeconomic statuses comfortable. "Cultural competency is achieved by identifying and understanding the needs and behaviors of individuals seeking help. More importantly, the practice of cultural competency is driven in service delivery systems by

224. *See* Angela Onwuachi-Willig, *Policing the Boundaries of Whiteness: The Tragedy of Being "Out of Place" from Emmett Till to Trayvon Martin*, 102 IOWA L. REV. 1113, 1119–20, 1120 n.26 (2017) (discussing how racism of today consists of "ostensibly 'race-neutral' actions that . . . sustain a form of rationalizing racial inequities and injustices that sociologist Eduardo Bonilla-Silva refers to as 'colorblind racism.' " (citing EDUARDO BONILLA-SILVA, RACISM WITHOUT RACISTS: COLOR-BLIND RACISM AND THE PERSISTENCE OF RACIAL INEQUALITY IN AMERICA 2 (4th ed. 2014))); EDUARDO BONILLA-SILVA, RACISM WITHOUT RACISTS: COLOR-BLIND RACISM AND THE PERSISTENCE OF RACIAL INEQUALITY IN AMERICA 2 (4th ed. 2014) ("Whereas Jim Crow racism explained blacks' social standing as the result of their biological and moral inferiority, color-blind racism avoids such facile arguments. Instead, whites rationalize minorities' contemporary status as the product of market dynamics, naturally occurring phenomena, and blacks' imputed cultural limitations.").

225. Onwuachi-Willig, *supra* note 224, at 1119 n.25 (quoting IAN HANEY LÓPEZ, DOG WHISTLE POLITICS: HOW CODED RACIAL APPEALS HAVE REINVENTED RACISM AND WRECKED THE MIDDLE CLASS 181 (2014)).

226. BONILLA-SILVA, supra note 224, at 14.

227. *See* Mary Ellen Sullivan, *Putting Clients at Ease: Body Language 101*, ATT'Y AT WORK, https://www.attorneyatwork.com/putting-clients-at-ease-body-language-101/ (last updated Aug. 12, 2022) [https://perma.cc/2RF6-EVCA] (suggesting body language shifts to make clients more comfortable).

228. *See id.* (referring to body language as "unconscious conversation").

a client's preferred choices, not by culturally blind or culturally free interventions."[229]

Culturally competent discussions include highlighting the values and the needs of the client. A discussion embedded in cultural humility will also require the attorney to have engaged with systemic questions related to inequities faced by their clients.[230] These questions could examine social and economic barriers to a client receiving legal assistance, determine how the attorney can actively challenge power imbalances, and review the attorney's previous training and development opportunities to address inequalities.[231]

In patent law, asking the client to go into detail about their passion for the project, how it personally affects them, and how they plan to use their product going forward would be a culturally competent means of reducing perception biases that might indirectly affect the client-attorney interaction. These questions simultaneously increase the practitioner's cultural capital necessary to prosecute the patent application. What's more, asking these broad questions will both put the client at ease and potentially help elicit language to be used in the case going forward—especially language the practitioner could not have provided on their own. This bridges the speech communities of the attorney and client.

In law schools, students could also benefit from taking classes where they are exposed to "topics related to emotional intelligence, mindfulness practices and cultural competence, especially in the context of race, gender, sexual identity, ethnicity, economic background, etc."[232] Professors may facilitate discussions between diverse law students in their classes, allowing students to voice "their life experiences and backgrounds and explore cultural issues and biases."[233] A social cognition theory, as discussed by Professor Andrea Curcio, "provide[s] law students and their professors a better foundation from

229. Aastha Madaan, *Cultural Competency in the Practice of Law*, ARAG LEGAL INS., https://www.araglegal.com/attorneys/learning-center/topics/delivering-great-client-service/cultural-competency-in-practicing-law (last visited Dec. 19, 2023) [https://perma.cc/2FNM-BDZZ].

230. *See* Fisher-Borne et al., *supra* note 221, at 169 ("Many cultural competency frameworks fail to encourage critical self-awareness that examines or challenges the inherent power imbalance between provider and client but instead focus primarily on *exposing* providers to different (i.e., non-dominant) cultural groups." (citation omitted)).

231. *See id.* ("Many current cultural competency models fail to account for the complex history and reality of present health, economic, and social inequalities.").

232. Falati, *supra* note 219, at 658.

233. *Id.*

which to explore key topics of implicit bias, the Implicit Associations Test, [and] confirmation bias."[234]

Not only will these teachings—either under Standard 303[235] or personally undertaken by doctrinal and clinical professors—help parallel student's expectations going into law school, but they will also help turn the tables on the ethical backdrop of the legal industry. Ensuring students use open, culturally appropriate language with a client is a beneficent approach to fighting for justice for the client and advancing client interests and goals. This requires future attorneys to actively think about putting their clients at ease, reflecting their clients' language, and giving their clients' knowledge the attention and respect it deserves in the intake process to bridge cultural gaps and facilitate competent representation.

### *C. Model Rules Amendments*

To motivate and mandate that attorneys increase the baseline minority-group cultural capital, we propose changing the Model Rules of Professional Conduct ("MRPC"). We suspect that the issues highlighted above extend far beyond the realm of patent law. For this reason, we want to explicitly expand attorney inquiry responsibility to include cultural elements. If attorneys are already being trained to a higher standard than required by the MRPC as discussed in Section III.B, there is no need to keep the MRPC as the status quo. We propose that the comments to MRPC 1.1[236] be amended as follows:

> [5] Competent handling of a particular matter includes inquiry into and analysis of the factual, ~~and~~ legal, and cultural elements of the problem, and use of methods and procedures meeting the standards of competent practitioners. It also includes adequate preparation. The required attention and preparation are determined in part by what is at stake; major litigation and complex transactions ordinarily require more extensive treatment than matters of lesser complexity and consequence. A lawyer shall discuss the factual, legal, and cultural elements of the problem with their client to determine the client- and attorney-perceived level of complexity and consequence of the matter. An agreement between the lawyer and the client regarding the scope of the representation may limit the matters for which the lawyer is responsible. See Rule 1.2(c).

234. *Id.* at 648 (footnotes omitted); Andrea A. Curcio, *Addressing Barriers to Cultural Sensibility Learning: Lessons from Social Cognition Theory*, 15 NEV. L.J. 537, 540 (2015).

235. The American Bar Association requires law schools to develop a plan to comply with Standard 303, which requires that students have opportunities develop their professional identity and receive education on bias, cross-cultural competency, and racism. *ABA Standard 303: Resources for Career Service Offices*, NALP (May 2023), https://www.nalp.org/aba_standard_303 [https://perma.cc/2BC5-RAHY].

236. MODEL RULES OF PRO. CONDUCT r 1.1 (AM. BAR. ASS'N 2018) ("A lawyer shall provide competent representation to a client. Competent representation requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation.").

By including a positive discussion between the attorney and the client, this comment requires an attorney to actively engage in a behavior that requires them to consider their client's perception, rather than just their own. This will increase the shared cultural capital of the client and their attorney. This may negate a behavior or intuitive bias developed in law school that " 'legal training somehow immunizes lawyers from viewing legal problems and clients through their own cultural lenses, and from having cultural biases that affect their analyses and interactions.' "[237]

Additionally, Rule 8.4(g) states that

> it is professional misconduct for a lawyer to . . . (g) engage in conduct that the lawyer knows or reasonably should know is harassment or discrimination on the basis of race, sex, religion, national origin, ethnicity, disability, age, sexual orientation, gender identity, marital status or socioeconomic status in conduct related to the practice of law . . . .[238]

Comments to Rule 8.4(g) define discrimination as including "harmful verbal or physical conduct that manifests bias or prejudice towards others."[239] However, as noted by scholars, "only twenty-four states and Washington[,] D.C., have adopted any semblance of an anti-bias rule" as described in Rule 8.4(g) and "lawyers are rarely disciplined even if a formal investigation takes place after a complaint to a state's ethical committee."[240]

Not only should more states adopt this Rule, but we propose that Rule 8.4(g)'s commentary be expanded to define discrimination systemically, such that actions systemically discriminating against underrepresented communities (including substandard performance, not offering equitable pro bono opportunities, and giving inequitable advice) may also be found to be professional misconduct. Such a rule would motivate attorneys to actively seek out antibias training to increase their minority-group cultural capital external to their interactions with their clients, and to ensure their cumulative actions are not contributing to the systemic inequities prevalent in legal practice.

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237. L. Danielle Tully, *The Cultural (Re)Turn: The Case for Teaching Culturally Responsive Lawyering*, 16 STAN. J. C.R. & C.L. 201, 232 (2020).

238. MODEL RULES OF PRO. CONDUCT r. 8.4(g) (AM. BAR ASS'N 1983).

239. MODEL RULES OF PRO. CONDUCT r. 8.4(g) cmt. 3 (AM. BAR ASS'N 1983).

240. Xeris Gregory, Note, *Ignorance Is Not Bliss: Why More Than the Model Rules of Professional Conduct Are Necessary for Competency in the Legal Profession*, 42 J. LEGAL PROF. 243, 255–56 (2018).

## CONCLUSION

We can no longer relegate explanations for the underrepresentation of Black inventors solely to factors outside the legal profession. Attorneys have an ethical obligation to maintain the integrity of their profession and, as such, have a responsibility to recognize how their actions and the legal system they operate within unjustly and unethically affect their clients.

Through the stories of Gwen Jimmere, Bruce Boyd, and Brigitte Gopou, we highlighted barriers to equitable patent accessibility for inventors in the Black hair-care space. Lack of knowledge of the patent system, inequitable access to pro bono opportunities, and attorney-client communication gaps all contribute to inventors receiving less patent protection than they deserve.

In both cases, the inventors experienced a hermeneutical injustice when they attempted to share their knowledge but faced prejudicial flaws in the system. The responsibility to fix the systemic issues plaguing underrepresented inventors rests primarily on the legal community, which has the tools and resources necessary to beneficently pursue patent inventorship equity. Through patent system amendments, MRPC revisions, and law school education reform, practitioners can begin to pursue a more culturally aware, competent, and humble practice. Such an approach will increase inventor diversity and inclusion, require practitioners to challenge and explore how their biases affect their practices, and reduce the epistemic injustice of underrepresenting, undercrediting, and undervaluing Black inventors.