



2024

Open Source Perfume


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Cardozo Law Review, Forthcoming.

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OPEN SOURCE PERFUME

Amanda Levendowski[†]

Perfume is a powerful art and technology, but its secrets are closely held by a privileged few—by some counts, there are more astronauts than there are perfumers. As critics have noted increasingly since 2020, those select few perfumers often share similar backgrounds. The Western perfume industry prizes perfumers with elite pedigrees, which often precludes marginalized perfumers. It also perpetuates exclusionary practices, from erasing “noses” who develop perfumes to exoticizing non-Western cultures, that push some marginalized perfumers into teaching themselves perfumery. But teaching oneself through recreating and remixing existing fragrances presents a different challenge. As interviews with American, British, and French perfumemakers reveal, IP plays a complicated role in perfumery. Some aspects of scents, like colors and odors, remain unsettled but likely fall into the negative space left by trademark and copyright law. Others, like molecules and formulas, are protected by IP that rarely deters competitors but effectively prevents aspiring perfumemakers from creating and sampling scents. The free culture movement addressed similar problems in other industries by championing creativity with limited or no IP, but the perfume industry has remained largely untouched.

Drawing on work by perfumer and educator Saskia Wilson-Brown, this Article suggests that perfumery is overdue for a transformation. One is emerging: open source perfume. Open source perfumes allow anybody to replicate or reimagine fragrances, which empowers aspiring perfumemakers and the public to practice

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perfumery. It's simple. Crafting an open perfume requires releasing public, operationalizable documentation about the scent, including its ingredients and where to purchase them. Existing open source licenses feature terms that enable perfumemakers to reject or limit IP rights in aspects of their perfumes. For those seeking ways to share scents and signal commitment to democratizing perfumery, this Article draws on personal experience to pioneer the use of open source hardware certification—which extends the open source ethos into tangible products, broadly called “hardware”—which provides additional infrastructure for forfeiting rights in branding, works, components, and know-how to share scents that are made to be sampled. Together, these interventions can fuel fragrances that are free: free to make, free to sample, and free from gatekeeping. Open perfume ought to be the next free culture frontier, and this Article helps chart a course toward its expansion.

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INTRODUCTION

For a stretch in the mid-aughts, it seemed like every Brooklyn Millennial smelled the same.¹ Attorneys and artists left behind lingering trails of sandalwood and smoky leather in cocktail bars and subway cars.² The smell became the signature scent of trendy boutiques that sold Sally Rooney's *Normal People* alongside impressive arrays of clogs.³ An ode to the familiar fragrance went viral.⁴ When a journalist joked that a Quinnipiac poll found one in five respondents shared that same signature scent, it was imminently believable.⁵ Le Labo Santal 33 quickly clinched the title of "first iconic perfume of the aughts."⁶

Santal 33's omnipresence demonstrates the powers of perfume. It shares stories.⁷ It evokes emotions.⁸ And it's profoundly proprietary.

¹ At least the ones with \$220 to burn. Olivia Fleming, *That Perfume You Smell Everywhere is Santal 33*, N.Y. TIMES (Nov. 16, 2015), <https://www.nytimes.com/2015/11/16/t-magazine/perfume-santal-33-ds-durga-aesop.html> [https://perma.cc/G8PL-RYKJ].

² *Santal 33*, LE LABO, <https://www.lalabofragrances.com/santal-33-147.html> [https://perma.cc/S5DV-VJ3X].

³ Maya Singer, *What Happens When Your Signature Scent Goes Mainstream?*, VOGUE (Apr. 16, 2020), <https://www.vogue.com/article/niche-signature-fragrance-goes-mainstream> [https://perma.cc/9FYA-N7FH].

⁴ Jane Larkworthy, *Allow Us To Introduce This Singing Bottle of Perfume*, THE CUT (Jan. 21, 2020), <https://www.thecut.com/2020/01/mur-the-artist-who-wrote-a-song-about-santal-33.html> [https://perma.cc/Y9DW-8RJL].

⁵ Jane Larkworthy, *New York's Cult Fragrance Wouldn't Exist If It Weren't For Me*, THE CUT (Nov. 6, 2019), <https://www.thecut.com/2019/11/le-labos-santal-33-a-history.html> [https://perma.cc/H2K2-ULC2].

⁶ Allie Volpe, *Le Labo Santal 33: The Scent that Went from Ruggedly Cool to Utterly Basic*, FASHIONISTA (Jan. 10, 2019), <https://fashionista.com/2019/01/le-labo-santal-33-perfume-trend-over> [https://perma.cc/E6FE-3X79]; Singer, *supra* note 3. The scent is so popular that perfume enthusiasts have identified similar scents that cost significantly less money, like Maison Louis Marie's Bois de Balincourt. It nails the sandalwood notes but substitutes Santal 33's musky leatheriness for sweet spice, like nutmeg and cinnamon. Ellie Conley, *Everyone Says This Perfume is a Dupe for Le Labo Santal 33, and Luckily, It's a Lot More Affordable*, IN THE KNOW (Jan. 20, 2023, 5:44 PM), <https://www.intheknow.com/post/le-labo-santal-33-dupe> [https://perma.cc/GSH8-UYXX]; *Bois de Balincourt*, MAISON LOUIS MARIE, <https://maisonlouismarie.com/products/no-04-bois-de-balincourt-perfume-oil> [https://perma.cc/75UN-B3QA]. Bois de Balincourt is, however, not a dupe, as discussed *infra* Section II.A.3.b.

⁷ Kerry Benson, *It's True, Scent Really Does Have Power Over Memory*, THE BRINK (Mar. 16, 2020), <https://www.bu.edu/articles/2020/its-true-scent-really-does-have-power-over-memory> [https://perma.cc/AA4X-8KK3].

⁸ Colleen Walsh, *What the Nose Knows*, HARVARD GAZETTE (Feb. 27, 2020), <https://news.harvard.edu/gazette/story/2020/02/how-scent-emotion-and-memory-are-intertwined-and-exploited> [https://perma.cc/6T7N-7HBL]; Rachel S. Herz, *The Role of Odor-Evoked Memory in Psychological and Physiological Health*, BRAIN SCI. 22, 23 (2016); Rachel S. Herz, James Eliassen, Sophia Beland & Timothy Souza, *Neuroimaging Evidence for the Emotional Potency of Odor-evoked Memory*, 42 NEUROPSYCHOLOGIA 371, 371 (2004); Amanda N. Miles & Dorth

While scholars debate the wisdom of the term intellectual property (IP), the term describes exclusive rights that protect brands, works, inventions, and know-how from unauthorized copying. Chris Sprigman and Kal Raustiala have speculated that perfume partially occupies IP's so-called "negative space," a term they coined to capture that "substantial area of creativity into which copyright and patent do not penetrate and for which trademark provides only very limited propertization."⁹ But, as both acknowledge, perfumery does not neatly occupy IP's negative space—its legal status is far stranger. Colors. Odors. Molecules. Formulas. Not only do several of these features trigger IP protections, like patent and trade secrecy, aspiring perfume makers (and even established ones) may assume that they all do. They're not right, but they're not quite wrong either. Unlike other creative industries such as publishing, music, and film, the applicability of fundamental IP rights, like trademarks to fragrance colors or copyrights to perfume odors, remain untested and unsettled. And those limited established rights are unsatisfying to both rightsholders and aspiring perfumers, albeit for different reasons.¹⁰ The IP rights in perfume that do exist are not powerful enough to deter commercial competitors, yet they prevent aspiring perfumers from practicing their art by limiting access to materials, formulas, and methods like sampling.¹¹

In perfumery, "sampling" refers to taking or remaking another perfumer's scent as the basis for a new one, which may or may not be released commercially. As Sarah McCartney, founder of the British independent perfume house 4160 Tuesdays, explained, sampling is "the classical way of doing things, like the classical way to learn art You know, if you want to write songs that you play everybody else's songs first."¹² Aspiring perfumers may seek to recreate something familiar, like Santal 33, to understand how its notes of Australian sandalwood, cedarwood, spice, leather, and musk combine to create a compelling scent.¹³ But as perfumer and educator Saskia Wilson-Brown explains, "[w]hat you might refer to as 'sampling culture' in music, for example, doesn't exist in the world of scent. I know a lot of people who got in

Berntsen, *Odour-induced Mental Time Travel into the Past and Future: Do Odour Cues Retain a Unique Link to our Distant Past?*, 19 *MEMORY* 930, 930 (2011).

⁹ Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 *V.A. L. REV.* 1687, 1764 (2006); see also Elizabeth L. Rosenblatt, *A Theory of IP's Negative Space*, 34 *COLUM. J.L. & ARTS* 317, 324 (2011).

¹⁰ See Charles Cronin, *Lost and Found: Intellectual Property of the Fragrance Industry; From Trade Secret to Trade Dress*, 5 *N.Y.U. J. INTELL. PROP. & ENT. L.* 256, 283–89 (2015) [hereinafter Cronin, *Lost and Found*].

¹¹ *Id.*

¹² Interview with Sarah McCartney (July 21, 2023) [hereinafter McCartney interview].

¹³ *Santal 33*, *supra* note 2.

trouble this way. I think that sampling is important and necessary because it allows people to build on each other's creativity. It allows us to learn from each other."¹⁴ When music sampling bumped into IP rights, artists faced lawsuits.¹⁵ Yet artists in other industries, from Andy Warhol to Alexander McQueen, sampled successfully to push their practices forward.¹⁶ In perfumery, IP often reinforces the art as an exclusive industry.

It's also an exclusionary one. Since 2020, there has been a surge of discussion about the profound lack of diversity in perfumery.¹⁷ The mainstream industry is rife elitism, erasure, and exclusionary nomenclature, which deters many aspiring perfumers—particularly marginalized ones—from pursuing the practice. Mainstream Western perfume industry prioritizes elite formal training in Paris or a small town called Grasse, France, which is often financially and logistically out of reach for aspiring perfumers.¹⁸ Attribution and advertising practices decenter perfumers' contributions to favor the (white) celebrities who become the “faces” of perfumes, erasing their creative and authorial

¹⁴ Saskia Wilson-Brown: *The Founder of the Institute for Art and Olfaction on the Art and Politics of Scent*, DEEM, <https://www.deemjournal.com/stories/saskia-wilson-brown> [<https://perma.cc/Y6MC-4YHL>].

¹⁵ See, e.g., *Bridgeport Music, Inc. v. Dimension Films*, 410 F.3d 792, 801 (6th Cir. 2005) (“Get a license or do not sample. We do not see this as stifling creativity in any way.”). De La Soul's *3 Feet High and Rising* was excluded from streaming services while the band's lawyers cleared hundreds of samples. Ben Sisario, *De La Soul's Music is Finally Back. It's a Bittersweet Victory*, N.Y. TIMES (Mar. 2, 2023), <https://www.nytimes.com/2023/03/01/arts/music/de-la-soul-catalog-streaming.html> [<https://perma.cc/E9NC-DJER>]. For a deeper dive into the legality of sampling and the racism underlying its resistance, see *Not in Court 'Cause I Stole a Beat: The Digital Music Sampling Debate's Discourse on Race and Culture, and the Need for Test Case Litigation*, 2012 UNIV. ILL. J. L., TECH. & POL'Y 141 (2012); see also Jean-Hugues Kabuiku & Mathys Rennela, *On the Capitalistic and Racist Dynamics of Sampling*, TECHNOMATERIALISM, <https://technomaterialism.com/on-the-capitalistic-and-racist-dynamics-of-sampling> [<https://perma.cc/V3HS-SQNH>].

¹⁶ *Givenchy Fall/Winter 1998 Paris* (The Fashion Channel 1998), <https://www.youtube.com/watch?v=S-ihgiH9GOc> [<https://perma.cc/AUH3-P7MT>].

¹⁷ Dianna Mazzone, *The Fragrance Industry Has a Diversity Problem*, ALLURE (Sept. 23, 2020), <https://www.allure.com/story/fragrance-industry-diversity-black-perfumers> [<https://perma.cc/F6QJ-7KR4>]; Alexandra Garfinkle, *The Fragrance Industry is Facing a Reckoning with Diversity*, BYRDIE (Jan. 16, 2022, 2:47 PM), <https://www.byrdie.com/diversity-in-fragrance-5215900> [<https://perma.cc/K8WS-94QM>]; Danielle Jackson, *Where Are All the Black Women in the Fragrance Industry*, POPSUGAR (Nov. 9, 2020, 11:05 AM), <https://www.popsugar.com/beauty/black-women-diversity-fragrance-industry-47946268> [<https://perma.cc/9VHT-LUFV>]; Jessica Matlin, *Why Are We Still Describing Perfumes as Oriental?*, HARPER'S BAZAAR (May 26, 2021), <https://www.harpersbazaar.com/beauty/a36503673/oriental-perfume-and-fragrance-backlash> [<https://perma.cc/SA8K-4VZR>].

¹⁸ Tembe Denton-Hurst, *5 Black Perfumers Changing the Scent Industry*, THE CUT (Sept. 2, 2021), <https://www.thecut.com/2021/09/5-black-perfumers-changing-the-scent-industry.html> [<https://perma.cc/6A8D-PV3V>].

presence.¹⁹ And the industry continues to describe a family of fragrances as Oriental, despite mounting protests from Asian and Asian-American perfumers.²⁰ Stacked together, these hurdles explain why a staggering number of mainstream Western perfume makers remain white Frenchman with formal training.²¹

This Article joins existing efforts to democratize an exclusive, exclusionary industry. To resolve murky IP rights without a rollback for rightsholders, perfumers can opt-in to certifying scents through the Open Source Hardware Association (OSHWa), an organization that “aims to foster technological knowledge and encourage research that is accessible, collaborative and respects user freedom” by certifying tangible objects, like perfumes, as “open.”²² Not only does certification eliminate IP ambiguities, the process also addresses accessibility ones. The OSHWA certification database doubles as a centralized search engine for open source perfume formulas, a much-needed resource that does not exist.²³ Drawing on a series of interviews with British, French, and American perfumemakers who operate outside the mainstream industry,²⁴ as well as my own practice pioneering the use of OSHWA to certify open source perfumes,²⁵ this Article deconstructs the role that IP and social barriers play in perfumery and devises a path to democratizing perfumery as an art and technology.

Perfumery is poised to be the next cultural institution overdue for a transformation, and open source perfume provides a powerful one. The emerging open source perfume movement builds on parallel progress in

¹⁹ Baze Mpinja, *7 Black Perfumer Changing the Scent Game for Good*, HUFFINGTON POST (Dec. 5, 2022), https://www.huffpost.com/entry/black-perfumers-fragrance-representation-beauty-industry_n_638a0b75e4b07115f85986c3 [<https://perma.cc/4CWG-RCLK>].

²⁰ Dan Miller, *Decolonizing Scent with Yosh Han*, SPORA HEALTH (Mar. 30, 2023), <https://web.archive.org/web/20230330021437/https://blog.sporahealth.com/more-reads/decolonizing-scent-with-yosh-han> [<https://perma.cc/CY8C-THEG>].

²¹ Eleanor Beardsley, *In France's Perfume Capital of the World, There's a World of Beautiful Fragrance*, NAT'L PUB. RADIO (Sept. 25, 2021, 7:02 AM), <https://www.npr.org/2021/09/25/1039336681/grasse-perfume-france> [<https://perma.cc/9K7G-ALZF>].

²² *About OSHWA*, OPEN SOURCE HARDWARE ASS'N (2023), <https://www.oshwa.org/about/> [<https://perma.cc/L7Y8-86A7>].

²³ Interview with Joey Rosin (July 31, 2023) [hereinafter Rosin interview].

²⁴ Initial interviews were conducted in July 2023 with support from the Georgetown Center for Transnational Legal Studies. Additional interviews are anticipated during the Edison Fellowship.

²⁵ Since January 2023, I've certified four fragrances inspired by the Internet, and several people have reported making and remixing their own versions. *See, e.g., World Wide Web*, OPEN SOURCE HARDWARE ASS'N (Jan. 18, 2023), <https://certification.oshwa.org/us002162.html> [<https://perma.cc/LR27-VHZZ>]; *Search Engine*, OPEN SOURCE HARDWARE ASS'N (Mar. 22, 2023), <https://certification.oshwa.org/us002176.html> [<https://perma.cc/W62E-5YAY>]; *Touch Grass*, OPEN SOURCE HARDWARE ASS'N (May 19, 2023), <https://certification.oshwa.org/us002180.html> [<https://perma.cc/9BBQ-X8MV>]; *Buddy List*, OPEN SOURCE HARDWARE ASS'N (June 22, 2023), <https://certification.oshwa.org/us002351.html> [<https://perma.cc/5TAM-RH3K>].

software and knowledge but, unlike those efforts, it is led predominantly by self-taught women and women of color.²⁶ Not surprisingly, the industry is skeptical. Pioneering perfumer and educator Saskia Wilson-Brown observes, “[o]pen source programming around scent is . . . tricky because it’s a very new concept for the perfume industry.”²⁷ She described industry reception to her open source perfume advocacy by reflecting that “[t]he few people within the industry that I’ve spoken to about it, are like, ‘Okay good luck with that.’”²⁸ While perfumers have published their fragrance formulas since at least 800 AD, and many others are available online, public formulas are spread across thousands of books, websites, and social media feeds, many of which are not truly open or, in other instances, housed on obscure fora. Not only does OSHA certification clarify IP issues, but also provides a concentrated place for aspiring perfumers to start their art.

This Article proceeds in four parts, each one using a different fragrance as a frame for demonstrating different doctrines, discriminatory barriers, and directions for democratizing perfumery.²⁹ Part I details fragrance fundamentals using Le Labo Santal 33 and La Boticá Nolita 96, beginning with industry nomenclature, scent descriptions, and a taxonomy of the industry’s players. Part II documents how IP and industry practices create an exclusive and exclusionary industry. Section A examines IP protections, or lack thereof, in the “juice”—an insider term for liquid fragrance—informed by the iconic Chanel N° 5. Trademark and copyright are untested protectors, and both pose problems. Colors can be guarded as trademarks.³⁰ But granting a monopoly over common shades of perfume, like Santal 33’s near-clear hue, would negatively impact competitors, which undercuts trademark eligibility. Some countries have concluded that perfumes are protectable as works of authorship by copyright, but their fleeting nature likely makes them insufficiently fixed to qualify for legal protection in the United States.³¹ Patent and trade secrets protect perfumes, but in a porous way. Processes for producing synthetic molecules can be shielded by patent law, but that path often goes unwalked by smaller perfumers because

²⁶ See *infra* Conclusion.

²⁷ *Id.*

²⁸ It is the topic of Wilson-Brown’s doctorate. See Carla Seipp, *Beauty Disruptor Series: Saskia Wilson-Brown on Open-Access Scent*, BEAUTY MATTER (Sept. 1, 2022), <https://beautymatter.com/articles/beauty-disruptor-series-saskia-wilson-brown-on-open-access-scent> [https://perma.cc/R9ZP-RYZS]. Wilson-Brown was also my perfume teacher.

²⁹ See Amanda Levendowski, *Teaching Doctrine for Justice Readiness*, 29 CLINICAL L. REV. 111 (2022).

³⁰ See *What Is A Trademark?*, U.S. PAT. & TRADEMARK OFFICE (July 18, 2023, 9:10 AM), <https://www.uspto.gov/trademarks/basics/what-trademark> [https://perma.cc/KQ2P-XMQ2].

³¹ See 17 U.S.C. § 102.

registration requires divulging processes' details publicly, which subjects them to appropriation by competitors after a relatively short term.³² While those limitations highlight the appeal of trade secrets, formulas are increasingly being reverse engineered using technology, which is widely available to competitors but beyond the reach of aspiring perfumers.³³ However, that technology is unavailable to aspiring perfumemakers, who instead have limited access to formulas to sample. Practically speaking, the law of IP and perfumery is untested, unsettled, and (to some) unsatisfying at preventing sampling or duplication. A different barrier to an inclusive industry is the industry itself. Section B documents how the industry's exclusionary practices limit diversity in the industry, drawing on the story of Guerlain Shalimar. Centuries after the rise of commercial perfumery, the industry still prizes pedigrees, both in terms of heritage and training, that favor perfumers who are white, male, and formally trained in France.³⁴ When aspiring perfumemakers overcome those barriers, their contributions are often erased by industrywide attribution and advertising practices. And despite its widespread rejection as an offensive term, many perfumers cling to the fragrance family "Oriental" to capture stereotypically mystical and mysterious scents.³⁵ The result is a mainstream industry whose Western perfumers do not reflect the industry's vast global reach—and a niche industry that increasingly does, thanks to self-taught perfumemakers.

With creative effort, however, perfumery can be democratized.³⁶ Part III discusses how open source perfume can address IP and industry barriers to teaching aspiring perfumemakers. Existing open source licenses, like the Creative Commons Attribution-ShareAlike license, are already used by perfumers to release detailed information about their fragrances, like the series of P-22 hosted by Open Source Smell Culture. But existing databases can be diffuse, which is why in 2023 I began submitting my series of Internet-inspired perfumes, like World Wide Web, to the Open Source Hardware Association (OSHW) for certification as open source hardware.³⁷ OSHWA certification signals perfumers' commitment to creating fragrances that can be shared and sampled while curating a centralized database of open source perfumes that are easily findable by emerging and established perfumemakers.

³² See *Class 512: Perfume Compositions*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/web/patents/classification/uspc512/defs512.htm> [<https://perma.cc/Z6ZN-RD6M>].

³³ See 18 U.S.C. § 1839.

³⁴ See *infra* Section II.B.1.

³⁵ See *infra* Section II.B.3.

³⁶ Seipp, *supra* note 28.

³⁷ TK.

Fragrance might feel frivolous, but it is not. Globally, perfume is a \$58 billion industry and only growing.³⁸ Beyond its reach, however, dismantling the legal and social barriers to practicing perfumery is urgent. “My stories come from my unique perspective,” explained Chris Collins, the first Black perfumer to have a fragrance line in Bergdorf Goodman. “The more diversity we have, the more stories we get to hear.”³⁹ Right now, the public experiences a small handful of those stories, many of which hit the same notes. Open source perfumes provide a powerful path to sharing new stories. By deconstructing the IP and industry barriers to practicing perfumery, this Article devises a new way to fuel fragrances that are free—free to make, free to sample, and free from gatekeeping. The next free culture frontier should be open source perfume, and this Article charts a course toward the practice’s expansion.

I. PERFUME PRIMER

Le Labo Santal 33 was created by perfumer Frank Voelkl, who is an archetypal “nose,” the industry term for a perfumer: he is a white man who grew up and trained in France.⁴⁰ While he lived in France, Voelkl was inspired by the sophisticated fragrances his mother wore, and he pursued perfumery.⁴¹ For formal training, he attended the prestigious ISIPCA in Paris, a school specializing in perfume, cosmetics, and flavoring.⁴² Voelkl soon landed a role as a professional perfumer at the world’s largest privately owned composition house, where he develops fragrances for luxury brands and perfumeries like Le Labo.⁴³

³⁸ *Fragrances – Worldwide*, STATISTA (Nov. 3, 2023), <https://www.statista.com/outlook/cmo/beauty-personal-care/fragrances/worldwide> [https://perma.cc/YMT4-NMHT].

³⁹ Mazzone, *supra* note 17.

⁴⁰ *Principal Perfumer Frank Voelkl*, FIRMENICH (2021), <https://www.firmenich.com/fragrance/fine-fragrance/people/frank-voelkl> [https://perma.cc/377N-UHYU].

⁴¹ *Id.* Fun fact: Voelkl’s mother wore chypre perfumes, discussed *infra* Section I.A. My open perfume, IYKYK—because if you do, you do—is the first certified open source chypre fragrance. TK.

⁴² *Principal Perfumer Frank Voelkl*, *supra* note 40.

⁴³ *Id.* Fun fact: ISIPCA, the Parisian perfume school Voelkl attended, was founded by perfumer Jean-Jacques Guerlain, whose grandfather created Shalimar, the fragrance that frames Section II. *ISIPCA: Institut Supérieur International du Parfum, de la Cosmétique et de l’Aromatique Alimentaire*, FRANCE UNIVERSITÉ NUMÉRIQUE, <https://www.fun-mooc.fr/en/organizations/isipca-institut-superieur-international-du-parfum-de-la-cosmetiq> [https://perma.cc/BFL9-YFAW]; *Fast Facts*, FIRMENICH (2021), <https://www.firmenich.com/our-company#fast-facts> [https://perma.cc/PX9L-5ZYW]. Fun fact: Voelkl also designed Covet for celebrity perfumer Sarah Jessica Parker. *Frank Voelkl*, FRAGRANTICA, https://www.fragrantica.com/noses/Frank_Voelkl.html [https://perma.cc/TTA3-CGB2]. For a deeper dive into Parker’s involvement in perfumery, see Chandler Burr.

If Voelkl reflects the predictable path to perfumery, Afro-Dominican perfumer Dawn Marie West represents the unconventional one taken by many marginalized perfumers. Creative director West founded her perfumery, La Boticá, in 2018.⁴⁴ Formerly a fine art photographer and museum supervisor with no ties to France, let alone fragrance, West explored entering the world of traditional perfumery without success.⁴⁵ “When I looked into places I could study,” West explained, “I realized how representation for Black perfumers is virtually nonexistent.”⁴⁶ Instead, West taught herself perfumery.⁴⁷ La Boticá is infused with West’s story, from its scents (which draw from her Afro-Dominican roots) to its sourcing (which relies on sustainable ingredients from indigenous communities within and beyond the Dominican Republic).⁴⁸ Her fragrances are also a success: Nolita 96, inspired by her experiences working in downtown Manhattan art galleries, sells out routinely and her candles are recommended routinely.⁴⁹

The two noses behind Santal 33 and Nolita 96 appear to have little in common—not their experiences, not their educations, and not their employment.⁵⁰ And yet, the two both created perfumes with significant

⁴⁴ Denton-Hurst, *supra* note 18. “Boticá” is Spanish for “drugstore.”

⁴⁵ G Editors, *Meet Dawn Marie West from La Boticá*, GARMENTORY (July 7, 2020), <https://www.garmentory.com/the-thread/meet-dawn-marie-west-from-la-botica> [https://perma.cc/98VF-PMPH].

⁴⁶ Denton-Hurst, *supra* note 18.

⁴⁷ *Id.*

⁴⁸ *Id.* La Boticá also donates a percentage of its proceeds to The Dream Project, a nonprofit organization serving nearly 30 communities in the Dominican Republic to educate thousands of children and young adults. *The Brand*, LA BOTICÁ, <https://www.laboticanyc.com/thebrand> [https://perma.cc/SZH9-Q8RQ] (2023).

⁴⁹ Mpinja, *supra* note 19; Katie Stanovick & Anna Buckman, *The Black-Owned Candle Brands You Should Know & Support*, THE ZOE REPORT (June 9, 2020), <https://www.thezoereport.com/beauty/13-black-owned-candle-brands-to-support-right-now-22964530> [https://perma.cc/8ARZ-QGCN]; Natalie Arroyo Camacho, *15 Latinx-Owned Wellness and Lifestyle Brands to Shop ASAP*, BYRDIE (Nov. 19, 2021), <https://www.byrdie.com/latinx-owned-wellness-and-lifestyle-brands-5078955> [https://perma.cc/5ZX8-N626]; China Rodriguez & Annie Blay, *27 Best Holiday Gift Ideas From Black-Owned Brands*, ALLURE (Nov. 11, 2022), <https://www.allure.com/gallery/black-owned-beauty-fashion-gift-ideas> [https://perma.cc/FM35-EDUH]; Tembe Denton-Hurst & Jenna Milliner-Waddell, *28 Great-Smelling Candles from Black-Owned Businesses*, THE STRATEGIST (Jan. 25, 2023), https://nymag.com/strategist/article/best-candles-from-black-owned-businesses.html#_ga=2.129244364.1337266646.1676489418-2128331856.1674001142 [https://perma.cc/F2L3-UJCU]; Siena Gagliano, Megan Uy, Rachel Sylvester & Alexis Bennett, *30 Black-Owned Candle Companies You Need to Have on Your Radar*, COSMOPOLITAN (Feb. 1, 2023), <https://www.cosmopolitan.com/lifestyle/g33247000/black-owned-candle-companies> [https://perma.cc/29FE-6L6M]; Denton-Hurst, *supra* note 18 (addressing how hype for the brand took off during the racial reckoning of 2020).

⁵⁰ Ironically, both fragrances did begin life as candles. Larkworthy, *supra* note 5; Denton-Hurst, *supra* note 18. West opted to begin with candles because the materials were cheaper. *Id.*

similarities.⁵¹ Part A provides a vocabulary for describing individual ingredients, known as “notes,” and fragrance families, which illuminate the olfactory overlap between Santal 33 and Nolita 96. However, Voelkl and West still occupy very different parts of the perfume industry. Part B describes the different players that create, market, and distribute perfumes. Taken together, this Section uses two perfumes to provide a clear, comprehensive primer for describing and developing Western perfumery.

A. *Describing Scents*

While each word has its own subtle distinctions, this Article uses the words perfume, scent, and fragrance interchangeably to describe a cohesive odor composed from a series of notes. A “note” is any material that composes the odor of a perfume. Those materials may be natural or synthetic; some synthetics may be substitutes for naturals or wholly invented.⁵² A heady sandalwood note features in Santal 33 and Nolita 96.⁵³ In both perfumes, the scent of sandalwood is prominent—and political. When Europeans colonized India, they extensively harvested sandalwood for its fragrance.⁵⁴ As a result, sandalwood trees were overexploited to the point of endangerment.⁵⁵ While other countries grow sandalwood, its precarity as a natural material means that many perfumers opt for synthetic ones that imitate the tree’s warm, spicy smell.⁵⁶

Perfumers, as well as crowd-sourced community websites, often share information about perfumes’ notes, which carry different classifications based on molecular weight and tenacity; top notes are the lightest and fade the fastest, base notes are the heaviest and last the

⁵¹ In my experience, it was incredibly challenging and time consuming to identify the niche perfume foil, by nose and notes, to Santal 33.

⁵² MANDY AFTEL, *FRAGRANT: THE SECRET LIFE OF SCENT* (2014).

⁵³ See *Santal 33*, *supra* note 2; *Nolita 96 Eau de Parfum 50mL*, LA BOTICÁ, <https://www.laboticanyc.com/shop/nolita-96-perfume-preorder> [<https://perma.cc/TM3Q-J86U>] (2023).

⁵⁴ Ezra D. Rashkow, *Perfumed the Axe that Laid It Low: The Endangerment of Sandalwood in Southern India*, 51 *INDIAN ECON. & SOC. HIST. REV.* 1 (Mar. 10, 2014).

⁵⁵ *Id.*

⁵⁶ *Id.*; R.C. McLellarn, K. Dixon & D.M. Watson, *Prolific or Precarious: A Review of the Status of Australian Sandalwood (Santalum Spicatum [R.Br.] A.DC., Santalaceae)*, 43 *THE RANGELAND J.* 211 (2021). Some perfumers, like Mandy Aftel, work only with natural scents. See MANDY AFTEL, *ESSENCE AND ALCHEMY: A NATURAL HISTORY OF PERFUME* (2001). However, it is unclear whether the note in either Santal 33 or Nolita 96 is natural or synthetic, as neither perfumery discloses details about their compositions.

longest, and heart notes fall in between.⁵⁷ Santal 33 and Nolita 96 share a number of notes:

Top Notes: Iris
Heart Notes: Santal, Violet
Base Notes: Cardamom, Musk⁵⁸

However, notes are not rules, and some transcend these categories. Despite being a heart note, the “santal,” or sandalwood, in both perfumes lasts with the tenacity of a base note—in my experience, it lingers for hours, not minutes.⁵⁹ Despite these similarities, the two fragrances diverge, largely due to Santal 33’s addition of an alluring “smoking wood alloy” comprised of Australian sandalwood, cedarwood, and “spicy, leathery, musky notes.”⁶⁰ When multiple notes work together in a perfume, like Santal 33’s smoking wood alloy, they are called an “accord.”⁶¹ The result is that the two scents are similar in the same way as two sweaters, one freshly laundered (Nolita 96) and one worn to a campfire (Santal 33). The similar materials make for divergent olfactory experiences.

Similar arrangements of multiple notes or accords create perfumes that share similar profiles, known as “fragrance families.” The first visualization of fragrance families, known as a “fragrance wheel,” was introduced by Austrian perfumer Paul Jellinek in the late 1940s.⁶² His fragrance wheel divided scents by vegetable or animal qualities and separated those into quadrants for bitter, vegetable, sweet, and animal.⁶³

⁵⁷ *Basic Perfume Primer*, INST. FOR ART & OLFACTION, https://artandolfaction.com/wp-content/uploads/2020/12/IAO_1_PRIMER_V4.pdf [<https://perma.cc/2G29-D4KS>]. There are exceptions to these categorizations, of course, such as aldehydes, which add sparkle to top notes yet have the tenacity of base notes—they are base notes that “work[] on the top.” *Id.* Aldehydes are a dominant note in Chanel No. 5. See *infra* Section II.A.

⁵⁸ *Nolita 96*, *supra* note 53; *Santal 33 Le Labo*, FRAGRANTICA, <https://www.fragrantica.com/perfume/Le-Labo/Santal-33-12201.html> [<https://perma.cc/NB7V-GD56>].

⁵⁹ See *Santal 33*, *supra* note 2; *Nolita 96*, *supra* note 53; *Basic Perfume Primer*, INST. FOR ART & OLFACTION, https://artandolfaction.com/wp-content/uploads/2020/12/IAO_1_PRIMER_V4.pdf [<https://perma.cc/2G29-D4KS>].

⁶⁰ *Santal 33*, *supra* note 59. Le Labo uses the word “alloy,” not accord, which may feel more evocative of the American West and its mining opportunities. *Id.*

⁶¹ Barbara Herman, *Fragrance Terms, Explained*, INTO THE GLOSS, <https://intothegloss.com/2014/07/perfume-fragrance-definition/> [<https://perma.cc/825U-PHLE>].

⁶² Isobel Hush, *Understanding the Fragrance Wheel*, SHAY & BLUE (Feb. 7, 2021), <https://www.shayandblue.com/blogs/nose-dive/understanding-the-fragrance-wheel>. The first fragrance family was developed and visualized by Austrian perfumer Paul Jellinek. *Id.*; see PAUL JELLINEK, *THE PRACTICE OF MODERN PERFUMERY* (1954).

⁶³ Laura Donna, *Fragrance Perception: Is Everything Relative?*, 34 *PERFUMER & FLAVORIST* 26, 27 (Dec. 2009), <https://img.perfumerflavorist.com/files/base/allured/all/document/2009/11/>

Unlike subsequent fragrance wheels, Jellinek further defined categorizations by highlighting physiological responses to perfumes, like whether they are stimulating, narcotic, and (anti-)erogenous.⁶⁴ Decades later, perfume expert Michael Edwards published a streamlined fragrance wheel in his annual perfume manual.⁶⁵ Edwards' current fragrance wheel also has four core categories—amber, woody, fresh, and floral—further broken down along fourteen descriptive gradients like citrus, aromatic, and multiple variations of woods.⁶⁶ Natural perfumer Mandy Aftel designed the most detailed of the leading perfume wheels, featuring twelve core categories and dozens of subcategories, which are supplemented by lists of representative notes.⁶⁷ And the Institute for Art and Olfaction adapted Edwards' and Aftel's approaches to provide a comprehensive, open source list of fragrance families that also includes definitions for specific style, like “chypre,” which is characterized by its citrusy bergamot top notes and earthy oakmoss base notes.⁶⁸ The latter list is used throughout this Article.

Fragrance families are flexible, but they can also present fairly consistently across different fragrance wheels. Jellinek's fragrance wheel categorizes both Santal 33 and Nolita 96 as stimulating woody perfumes.⁶⁹ On Edwards' wheel, the two are dry woods fragrances.⁷⁰

pf.PF_34_12_026_09.pdf [https://perma.cc/7W9A-PTAE]. Jellinek further divided into 19 subcategories, like resinous, sultry, rancid, fatty, and fecal. JELLINEK, *supra* note 62.

⁶⁴ *Id.* at 28.

⁶⁵ MICHAEL EDWARDS, THE FRAGRANCE MANUAL (1992). Edwards's influence on the field cannot be overstated. See *Fragrances of the World* by Michael Edwards, INT'L PERFUME BOTTLE ASS'N <https://perfumebottles.org/article/fragrances-of-the-world-by-michael-edwards> [https://perma.cc/4VTC-77QC] (describing Edwards's book “Fragrances of the World” as the “Perfume Bible”).

⁶⁶ *Discover Michael Edwards' world of fragrances*, FRAGRANCES OF THE WORLD, <https://www.fragrancesoftheworld.com> [https://perma.cc/JG8C-X5XB]. The amber category used to be “Oriental,” as discussed in detail *infra* Section II.B.3. See also *Discover Michael Edwards' World of Fragrances*, FRAGRANCES OF THE WORLD (last accessed Jan. 15, 2023), <https://www.fragrancesoftheworld.com/>. However, “Oriental” is still used in the 33rd edition's fragrance wheel. MICHAEL EDWARDS, FRAGRANCES OF THE WORLD 5 (2022).

⁶⁷ Mandy Aftel, *Aftelier Natural Perfume Wheel*, MINISTRY OF SCENT, <https://ministryofscent.com/products/mandy-aftels-fragrance-wheel> [https://perma.cc/5L9P-D57N]. It also features a list of common top, heart, and base notes on the back. *Id.*

⁶⁸ *Basic Perfume Primer*, INSTITUTE FOR ART & OLFACTION, https://artandolfaction.com/wp-content/uploads/2020/12/IAO_1_PRIMER_V4.pdf [https://perma.cc/7CWL-RRC4].

⁶⁹ Laura Donna, *Fragrance Perception: Is Everything Relative?*, in 34 PERFUMER & FLAVORIST 26 (2009), https://img.perfumerflavorist.com/files/base/allured/all/document/2009/11/pf.PF_34_12_026_09.pdf [https://perma.cc/7QNM-8W86]; *Santal 33*, *supra* note 2; *Nolita 96*, *supra* note 53.

⁷⁰ *Discover Michael Edwards' World of Fragrances*, WORLD OF FRAGRANCES (2023), [Rhttps://www.fragrancesoftheworld.com](https://www.fragrancesoftheworld.com) [https://perma.cc/9TDL-X3VE] (choose “Match It fragrance finder” from dropdown; then type in fragrance). Other woods are mossy, woods and woody amber. *Id.*

Aftel's wheel classifies both as soft woody scents.⁷¹ And based on the Institute for Art and Olfaction fragrance "wheel," both are woody perfumes.⁷² No matter which of these experts or perfumers you ask, and despite differences in formulas, both perfumes' persistent sandalwood note plays a prominent role in identifying its core fragrance family: woody.⁷³

B. *Demystifying the Industry*

Understanding where and how noses do their work clarifies categories of fragrance developers. West and Voelkl are noses working in different spheres of the Western perfume industry: niche perfumery and mainstream perfumery. La Boticá is an example of the former.⁷⁴ "Niche" does not necessarily mean that noses are in-house; rather, it signifies that the perfumery relies on entrepreneurs and investors who operate independently of the legacy institutions that comprise mainstream perfumery.⁷⁵ While definitions vary among perfumers, niche perfumeries may be further defined in at least two ways: artisan and independent. Artisan perfumeries rely on in-house noses to develop their fragrances; independent perfumeries may rely on outsiders.⁷⁶

Beyond niche lies mainstream perfume. Mainstream fragrances are often produced by brands that specialize in scent and other personal care items, like Le Labo, or luxury brands that sell a more diversified set of goods, like Chanel. While France continues to occupy a prominent place in perfumery, the newest dominant players in the mainstream industry are global composition houses like Givaudan (Swiss), International Fragrance and Flavors (American), Symrise (German), Takasago (Japanese), and Firmenich (Swiss), where Voelkl works, which specialize in contracting with niche and mainstream perfumeries to develop fragrances for them.⁷⁷ It works like this: perfumeries describe their

⁷¹ Aftel, *supra* note 67.

⁷² *Basic Perfume Primer*, *supra* note 68.

⁷³ This Article uses the Institute for Art and Olfaction wheel when describing perfumes.

⁷⁴ Denton-Hurst, *supra* note 18.

⁷⁵ Garfinkle, *supra* note 17. Before Le Labo was acquired, it was also niche.

⁷⁶ This definition is adapted from the categories in the Art and Olfaction Awards. *Artisan Category Qualifiers*, ART AND OLFACTION AWARDS, <https://www.artandolfactionawards.org/submission/artisan> [https://perma.cc/9Z5S-R5S2]; *Independent Category Qualifiers*, ART AND OLFACTION AWARDS, <https://www.artandolfactionawards.org/submission/independent> [https://perma.cc/N4G5-BJ32].

⁷⁷ CHANDLER BURR, *THE PERFECT SCENT: A YEAR INSIDE THE PERFUME INDUSTRY IN PARIS AND NEW YORK XVII* (2009). See also Samuel Fillon & Elizabeth Kupervaser-Gould, *Uncovering the perfume industry*, SOMMELIER DU PARFUM BLOG (Jan. 20, 2021),

proposed scent in a creative brief, which may range from a single sentence to several pages of directives to a series of paintings, songs, and films that capture the intended “vibe” of the perfume.⁷⁸ Composition houses respond by pitching different compositions of scents, the most compelling of which “win[s] the brief.”⁷⁹ Voelkl, for example, was selected by Le Labo to create Santal 33 from his position at Firmenich.⁸⁰ Perhaps unsurprisingly, composition houses often produce perfumes for luxury brands and celebrity fragrances, which rarely employ in-house noses.⁸¹

Additional important industry players are licensees, which contract with different brands to produce and/or market perfumes using other peoples’ formulas.⁸² While licensees’ offerings are familiar, their names are rarely part of perfumes’ packaging or marketing. Le Labo was acquired by licensee Estée Lauder (New York) in 2014 and Guerlain, the perfumery used to frame this Article’s discussion of the industry’s exclusionary practices, is owned by LVMH (France).⁸³ Other leading

<https://blog.sommelierduparfum.com/en/uncovering-the-perfume-industry> [https://perma.cc/V5T9-8AJZ]; Garfinkle, *supra* note 17.

⁷⁸ BURR, *supra* note 77, at 5–6.

⁷⁹ *Id.*

⁸⁰ Frank Voelkl, LUCKY SCENT (last accessed Jan. 15, 2023), <https://www.luckyscent.com/perfumers/51/frank-voelkl>. Dolce & Gabbana’s fragrance Velvet Amber Sun was also created by Voelkl. Frank Voelkl, FIRMENICH, <https://www.firmenich.com/fragrance/fine-fragrance/people/frank-voelkl> [https://perma.cc/AHL4-U39U].

⁸¹ Chanel and Hermès are notable exceptions. Olivier Polge is the current Chanel nose. *I Am A Nose*, CHANEL, <https://www.chanel.com/us/fragrance/chanel-parfumeur/i-am-a-nose> [https://web.archive.org/web/20210508171424/https://www.chanel.com/us/fragrance/chanel-parfumeur/i-am-a-nose]. He was born in Grasse, France, trained with composition house IFF, and is the son of Chanel’s former nose, Jacques Polge. *Olivier Polge*, FRAGRANTICA, https://www.fragrantica.com/noses/Olivier_Polge.html [https://perma.cc/PB68-7RPT]. Jean-Claude Ellena was the inaugural in-house nose at Hermès, who joined the company in 2014. BURR, *supra* note 77. Ellena was also born in Grasse, France (a recurring theme, to be sure) to a family of perfumers and joined Hermès after training at the Givaudan Perfumery School and working at composition house Givaudan. *Jean-Claude Ellena*, FRAGRANTICA, https://www.fragrantica.com/noses/Jean-Claude_Ellena.html [https://perma.cc/V2YX-5RK9]. Christine Nagel was appointed to the Hermès role after Ellena’s departure. Naomi Pike, *Career Girl: How Hermès’s Christine Nagel Got The Chicest Job In Beauty*, BRITISH VOGUE (July 9, 2021), <https://www.vogue.co.uk/miss-vogue/article/christine-nagel-hermes-nose> [https://web.archive.org/web/20210710101229/https://www.vogue.co.uk/miss-vogue/article/christine-nagel-hermes-nose]. Nagel, a Swiss perfumer, joined the luxury house after studying chemistry and working at composition house Firmenich, where she was initially not permitted to join the perfumery section due to her untraditional training. *Christine Nagel*, FRAGRANTICA, https://www.fragrantica.com/noses/Christine_Nagel.html [https://perma.cc/ND6S-XFQQ].

⁸² See Joan Kennedy, *The Companies Behind Fashion’s Biggest Fragrances*, THE BUSINESS OF FASHION (Feb. 27, 2023), <https://www.businessoffashion.com/articles/beauty/the-companies-behind-fashions-biggest-fragrances/> [https://perma.cc/9NCK-5CRA].

⁸³ *Le Labo*, ESTÉE LAUDER COMPANIES, <https://www.elcompanies.com/en/our-brands/le-labo> [https://perma.cc/BT4V-J9BX]; *Guerlain*, LVMH, <https://www.lvmh.com/houses/perfumes->

licensees include Coty (New York), L'Oréal (France), and Shiseido (Japan).⁸⁴ Mainstream perfumeries are often invisibly owned by these conglomerates.

II. PRECLUDING ASPIRING PERFUMERS FROM PRACTICING PERFUMERY

In the 1960s, Chanel ran a prolific campaign for its iconic Chanel N° 5 perfume proclaiming that “[e]very woman alive loves Chanel N° 5.”⁸⁵ But perhaps not every woman. The lore of Chanel N° 5 is tainted by Coco Chanel’s entanglements with the Nazi regime. Chanel romanced a rising Nazi officer.⁸⁶ She invoked Nazi laws in a failed attempt to wrestle back control of her perfume house from the Wertheimer brothers because they were Jewish.⁸⁷ Chanel’s perception as an “indisputable collaborator” with the Nazis led her to be officially questioned by a French judge.⁸⁸ And since her death, Chanel-the-brand has offered only milquetoast reflections on the antisemitic history of its namesake, stating:

cosmetics/Guerlain [https://perma.cc/8HHE-AEMM]. Chanel, by comparison, is independently owned by the Wertheimer family. L’Officiel Vietnam, *The Hidden Chanel Family: A Luxury Empire Revived from the Ashes*, L’OFFICIEL (Aug. 18, 2023), <https://www.lofficielusa.com/fashion/coco-chanel-hidden-wertheimer-family-fashion-legacy> [https://perma.cc/8W3X-Q5N4].

⁸⁴ *The Companies That Own the Majority of Fragrance Brands on the Planet*, FRAGRANCEX, <https://www.fragrancex.com/fragrance-information/the-companies-that-own-the-majority-of-fragrance-brands-on-the-planet.html> [https://web.archive.org/web/20210727053120/https://www.fragrancex.com/fragrance-information/the-companies-that-own-the-majority-of-fragrance-brands-on-the-planet.html]; Samuel Fillon & Elizabeth Kupervaser-Gould, *Uncovering the Perfume Industry*, SOMMELIER DU PARFUM BLOG (Jan. 20, 2021), <https://blog.sommelierduparfum.com/en/uncovering-the-perfume-industry> [https://perma.cc/6HK3-X49Q].

⁸⁵ See, e.g., CHANEL NO. 5, Registration No. 0701978 (the only live mark); EVERY WOMAN ALIVE LOVES CHANEL NO. 5, Registration No. 1058841 (prior Registration No. 0807105).

⁸⁶ *Id.* Hans Günther von Dincklage divorced his half-Jewish wife on the cusp of the Nuremberg Laws’ enactment. Judith Warner, *Was Coco Chanel a Nazi Agent?*, N.Y. TIMES (Sept. 2, 2011), <https://www.nytimes.com/2011/09/04/books/review/sleeping-with-the-enemy-coco-channels-secret-war-by-hal-vaughan-book-review.html> [https://perma.cc/A3XZ-65MZ].

⁸⁷ Dana Thomas, *The Power Behind the Cologne*, N.Y. TIMES MAG. (Feb. 24, 2022), <https://www.nytimes.com/2002/02/24/magazine/the-power-behind-the-cologne.html> [https://perma.cc/NU26-8NB6]. The full story is even wilder. The Wertheimers, who maintain control of Chanel’s perfumery operations today, outsmarted Chanel by transferring their stake in Les Parfums Chanel to a Frenchman named Félix Amiot, who returned the company after the war. *Id.* Unfortunately, Amoit was also a Nazi collaborator: his company, in which the Wertheimers acquired nearly fifty percent prior to the deal, sold arms to the Nazis. *Id.*

⁸⁸ Nothing more happened to her. Judith Warner, *Was Coco Chanel a Nazi Agent?*, N.Y. TIMES (Sept. 2, 2011), <https://www.nytimes.com/2011/09/04/books/review/sleeping-with-the-enemy-coco-channels-secret-war-by-hal-vaughan-book-review.html> [https://perma.cc/A3XZ-65MZ]. Other commentators have bluntly characterized Chanel as an “incorrigible anti-Semite.” James McAuley, *The Exchange: Coco Chanel and the Nazi Party*, NEW YORKER (Aug. 31, 2011),

Gabrielle Chanel was a daring pioneer, and the House of Chanel upholds and extends her extraordinary legacy. Her influence on many designers has been significant, and she continues to inspire new generations. However, her actions during World War II are the subject of discussion in many publications and biographies. The actions that some have reported in no way represent the values of Chanel today. Since that time in history, the House of Chanel has moved forward well beyond the past of its founder.⁸⁹

While Chanel's complicated legacy can overshadow her work, Chanel N° 5 will always reflect the innovative impressions of someone other than Chanel herself: her perfumery's first nose, Ernst Beaux.

After serving in the French military, he joined A. Rallet and Company, an elite Russian perfumery housed outside Grasse, France.⁹⁰ Rarely discussed, Beaux created the famous fragrance through sampling. In the fifth flask he presented to Chanel, Beaux offered her a riff on his own Rallet No. 1, a scent crafted for the Russian tsarina characterized by an overdose of icy Champagne-bubble organic compounds—called aldehydes—overlaid with florals, the effect itself inspired by the groundbreaking aldehydes in *Quelques Fleurs*.⁹¹ If Beaux had been barred from seeking inspiration in existing fragrances, it is no exaggeration to say that the history of perfumery would have been forever changed.⁹²

Chanel N° 5 may be part of the house's decision to “move forward,” but the intertwined legacies of its namesake and maker remain a pungent reminder that perfume is, and always has been, political. This Part deconstructs legal, social, and political such forces that keep perfumery proprietary. Section I.A discusses the porous relationship between IP and perfumery. When it comes to trademark colors and copyrightable odors, the law is untested and unsettled—but it remains likely that these aspects of scent fall beyond IP's grasp. But other components, like molecules and formulas, are protectable by patents and trade secrecy. While these forms of IP do not deter competitors from copying, they both have a chilling

<https://www.newyorker.com/books/page-turner/the-exchange-coco-chanel-and-the-nazi-party> [<https://web.archive.org/web/20140824145923/https://www.newyorker.com/books/page-turner/the-exchange-coco-chanel-and-the-nazi-party>]. For a much deeper dive into Chanel's Nazi era, see Hal Vaughan, *SLEEPING WITH THE ENEMY: COCO CHANEL'S SECRET WAR* (2011).

⁸⁹ Olivia Pinnock, *Do Coco Chanel's Nazi Connections Matter for Fashion Today?*, FORBES (Oct. 1, 2020, 1:28 PM), <https://www.forbes.com/sites/oliviapinnock/2020/10/01/coco-chanel-nazi-connection-matter-for-fashion-today> [<https://perma.cc/45RK-ZJFR>].

⁹⁰ TILAR J. MAZZEO, *THE SECRET OF CHANEL N° 5: THE INTIMATE HISTORY OF THE WORLD'S MOST FAMOUS PERFUME* 54 (2010). Fun fact: François Coty, founder of leading licensee Coty, trained at a lab owned by the family that purchased A. Rallet & Co. *Id.*

⁹¹ *Id.* at 70–72.

⁹² His perfume singlehandedly created the fragrance family of aldehydic florals *Id.* at 67.

effect on aspiring perfumers' sharing and sampling of scents. Those effects are compounded by industry practices. Section I.B documents how elitism, erasure, and exclusionary practices limit who can thrive as perfumers, with a preference for white men trained in France.⁹³ Together, IP and industry practices create barriers for aspiring perfumers to pursue the art of perfumery.

A. Examining IP In the "Juice"

In the summer of 1920, Russian-French nose Ernest Beaux was contracted to create a new perfume, for women, the likes of which the world had never seen.⁹⁴ After months of experimentation, Beaux presented several vials to his client for inspection.⁹⁵ Her face was implacable as she smelled each one, but she chose the fifth flask, which featured a fragrance characterized by a bouquet of florals doused in an overdose of aldehydes.⁹⁶ "I always launch my collection on the fifth day of the fifth month," proclaimed Coco Chanel, "so the number 5 seems to bring me luck—therefore, I will name it 'N° 5.'"⁹⁷ At the moment of its selection, Chanel N° 5 had already become the stuff of lore.⁹⁸

Over a century later, Chanel N° 5 remains popular, potent, and proprietary. Nearly every aspect of Chanel N° 5, inside and outside, down to its iconic crystal bottle, is potentially protectable by IP.⁹⁹ Broadly, IP describes owners' exclusive rights to protect brands, works, inventions, and know-how from unauthorized copying, such as sampling. As a concept, however, "IP" is relatively new.¹⁰⁰ The term emerged in the

⁹³ Interview with Alex Charra (July 21, 2023) [hereinafter Charra interview].

⁹⁴ MAZZEO, *supra* note 90, at 59.

⁹⁵ *Id.* at 60–61.

⁹⁶ *Id.* at 61.

⁹⁷ *Id.*

⁹⁸ Tynan Sinks, *Why Chanel N° 5 Has Withstood the Test of Time, 100 Years After Its Launch*, FASHION MAG. (July 5, 2021), <https://fashionmagazine.com/beauty-grooming/chanel-no-5> [<https://perma.cc/YTE7-929V>]. That lore involves Nazis as much as innovation. *See infra* p. [insert page#].

⁹⁹ However, Chanel's bid to register the Chanel flask has failed in both the United States and Lithuania. *See Chanel Seeking To Register The Shape Of Its Chanel No. 5 Fragrance Bottle As A Trademark*, LEGAL ERA (Aug. 18, 2022, 4:15 AM), <https://www.legaleraonline.com/news/chanel-seeking-to-register-the-shape-of-its-chanel-no-5-fragrance-bottle-as-a-trademark-832070> [<https://perma.cc/W32L-ZWPW>]; Lietuvos Aukščiausiasis Teismas [Supreme Court of Lithuania] Jan. 12, 2022, e3K-3-118-969/2022 (Lith.), <https://liteko.teismai.lt/viesasprendimupaieska/tekstas.aspx?id=dbdc6ed1-828a-45c2-ad1e-b28aecd66c0d> [<https://perma.cc/VZJ4-LJVT>].

¹⁰⁰ This Article adopts the term without endorsing it.

1870s during an existential debate over the patent system.¹⁰¹ Anti-patenters believed that modern people were predisposed to invent, making expensive and oppressive patent monopolies unnecessary.¹⁰² Patent proponents countered the claims. British inventor Sir David Brewster spun up a growing coalition of patent defenders who called for “radical change.”¹⁰³ Not abolition, but reform. His movement analogized patents to the more comfortable concept of copyrights, which had existed in Britain since the Statute of Anne of 1710, and which were enshrined in the United States Constitution.¹⁰⁴ As Sir Brewster explained, “[v]iewing all intellectual rights as equal,” meaning, in his view, complete and everlasting, “and regarding them as sacred and unalienable as any other species of property, we maintain that they should be put upon the same footing.”¹⁰⁵ To complete the concept, Brewster coined the term “intellectual property” to unite copyrights and patents under a single banner.¹⁰⁶ It worked—patents persisted.

After a century of dormancy, the term “IP” reemerged in the late 1960s.¹⁰⁷ So did debates over its scope which continue today.¹⁰⁸ The term has expanded beyond patents and copyrights to encompass adjacent fields like trademarks, trade dress, trade secrets, and even right of publicity, four of which have the potential to directly affect aspiring perfumemakers’ abilities to sample scents: trademark, copyright, patent, and trade secrets.¹⁰⁹ Drawing on work by Charles Cronin and Claire

¹⁰¹ ADRIAN JOHNS, *PIRACY: THE INTELLECTUAL PROPERTY WARS FROM GUTENBERG TO GATES* 275–278 (2009).

¹⁰² *Id.* at 271. Similar arguments underpin the success of the free culture movement, discussed *infra* Part III.

¹⁰³ JOHNS, *supra* note 101, at 276.

¹⁰⁴ *Id.* at 275–76; U.S. CONST. ART. 1, § 8 cl. 8 (“The Congress shall have power . . . [t]o promote the [p]rogress of [s]cience and useful [a]rts, by securing for limited [t]imes to [a]uthors and [i]nventors the exclusive [r]ight to their respective [w]ritings and [d]iscoveries.”) Fun fact: somewhat counterintuitively, “science” was aligned with copyrighted works, and “useful arts” were associated with patents. *Golan v. Holder*, 565 U.S. 302, 324 (2012).

¹⁰⁵ JOHNS, *supra* note 101, at 277. He also held some racist views, including suggesting that the abolition of patents would present “a tendency to become Chinese” by becoming complacent and stagnated. *Id.* at 278.

¹⁰⁶ *Id.* at 277.

¹⁰⁷ Its rise is attributed to the inclusion of “IP” in “World Intellectual Property Organization.” Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1033, n.4 (2005) (suggesting the correlation); Justin Hughes, *A Short History of ‘Intellectual Property’ in Relation to Copyright*, 33 CARDOZO L. REV. 1293 (2012) (confirming it).

¹⁰⁸ See *infra* Section III.

¹⁰⁹ The lack of definitional clarity is one critique levied against the term “IP.” *Intellectual Property: The Term*, ELECTRONIC FRONTIER FOUNDATION (2023), <https://www.eff.org/issues/intellectual-property/the-term> [https://perma.cc/3RR4-N6YC]. However, many scholars’ primary objections to the term are the linking of IP protection to tangible

Guillemin, which canvas several key IP issues in perfumery, this Article illustrates how IP in the “juice,” or the liquid fragrance itself, remains largely untested, unsettled, and—in the eyes of some mainstream perfumers—unsatisfying.¹¹⁰

This Section uses Chanel N° 5 to illustrate the unusual relationship between IP and perfumery. Trademark law guards words, phrases, symbols, designs, and other methods of identifying the source of goods or services.¹¹¹ Colors are capable of operating as trademarks, as demonstrated in Part A. Chanel N° 5’s golden glow is recognizable, but a key trademark doctrine precludes protection for elements caused by ingredients, the desire to appeal to customers or practices that limit competition, which may preclude Chanel N° 5’s hue from trademark protection. However, the theory has never been tested. Even if perfumes are not protectable as trademarks, scents are often composed of materials developed through novel processes. Part B documents another unsettled form of protection for perfume odor: copyright. Copyright covers original works of authorship that are “fixed in a tangible medium of expression,” such as paintings, photographs, poems, plays—and, in some jurisdictions, perfumes.¹¹² While fragrances are likely to be original works of authorship, as several European courts have held, their fleeting nature means they are unlikely to qualify for copyright protection in the United States.

But IP protects other aspects of perfumes. Part C discusses how patents shield inventions, such as new and useful processes for isolating or engineering molecules.¹¹³ Musky civetone, along with powdery florals and icy aldehydes, combine to create the iconic odor of Chanel N° 5.¹¹⁴

property rights. For a deeper dive into that debate, see Amanda Levendowski, *Hard Truths About Soft IP*, COLUMBIA L. REV. FORUM, n.8 (forthcoming 2023).

¹¹⁰ Charles Cronin, *Genius in a Bottle: Perfume, Copyright, and Human Perception*, 56 J. COPYRIGHT SOC’Y 427 (2009) [hereinafter Cronin, *Genius in a Bottle*]; Cronin, *Lost and Found*, *supra* note 10; Charles Cronin, *Law and Odor: Elusive Copyright and Other Intellectual Property Protections for Fragrances*, in UNCONVENTIONAL COPYRIGHT (Elgar 2018) [hereinafter Cronin, *Law and Odor*]; Claire Guillemin, *Law & Odeur: Fragrance Protection in the Fields of Perfumery and Cosmetics* (Schriften Zum Geistigen Eigentum Und Zum Wettbewerbsrecht 2016).

¹¹¹ *What Is a Trademark?*, U.S. PAT. & TRADEMARK OFF. (July 18, 2023, 9:10 AM), <https://www.uspto.gov/trademarks/basics/what-trademark> [<https://perma.cc/3TKD-XV2L>]. For a deeper dive into the history of trademark law, see FRANK I. SCHECHTER, *THE HISTORICAL FOUNDATIONS OF THE LAW RELATING TO TRADE-MARKS* 19 (1925); Daniel M. McClure, *Trademarks and Competition: The Recent History*, 59 LAW & CONTEMP. PROBS. 13, 29, 33 (1996).

¹¹² 17 U.S.C. § 102(a) (defining copyrightable works); *What Is Copyright?*, U.S. COPYRIGHT OFF., <https://www.copyright.gov/what-is-copyright> [<https://perma.cc/5HXB-PAK2>]; 17 U.S.C. § 106(1)–(2) (defining exclusive rights in copyrightable works); *infra* Part B.

¹¹³ 35 U.S.C. § 101.

¹¹⁴ Tania Sanchez, *100 Years of Chanel No. 5*, PERFUMES: THE GUIDE (Oct. 14, 2021) <https://www.perfumestheguide.com/post/100-years-of-chanel-no-5> [<https://perma.cc/9FEL-F95Y>].

There is a hint of funk in Chanel N° 5 that comes from civetone and synthetic musk, and at least one method of creating that latter “captive” molecule is patented. And as Part II(A)(3)(b) deconstructs, perfume formulas can be concealed through trade secrecy.¹¹⁵ What was once a go-to protection for the perfume industry has waned with the advent of new technologies, however. With \$48,000 worth of used equipment and some specialized skills, secret formulas can be reverse-engineered, replicated, and even sold commercially without infringing on perfumeries’ IP rights—but only by competitors. As a side effect of the extreme industry’s reliance on trade secrecy, aspiring perfumemakers are left with limited access to formulas to sample and learn from replicating. By exploring each potentially protectable component of perfume through its relationship to Chanel N° 5, this Section illuminates the complexities of porous IP protections and their effects on aspiring perfumemakers.

It’s important to recognize, however, that the porous IP protections in the juice have not prevented other forms of IP from providing recourse for commercial copying: trade dress and trademark law. The duo protects external aspects of perfumes—such as branding, packaging, and slogans—from infringement globally, even when those rights may not extend to the liquid inside.¹¹⁶ Bottles and fonts can be just as recognizable as the juice itself, and they are often customers’ first engagement with fragrance.¹¹⁷ Chanel routinely uses trade dress to protect its Chanel N° 5 fragrance from counterfeiting.¹¹⁸ These alternate modes of IP protection do not govern the “juice” or generally affect aspiring perfumers—and which is the central focus of this Section.

¹¹⁵ See *infra* Section II.A.3.b.

¹¹⁶ Cronin, *Lost and Found*, *supra* note 10; *Counterfeit Perfume Seizures Total \$51 Million*, U.S. CUSTOMS & BORDER PROT. (Feb. 7, 2012), <https://www.cbp.gov/newsroom/national-media-release/counterfeit-perfume-seizures-total-51-million> [<https://perma.cc/YGJ4-9ZH3>]; *L’Oréal SA v. Bellure NV*, [2010] EWCA Civ 535, (appeal taken from Eng.) (European Court of Justice finding that a dupe company did not take unfair advantage of L’Oréal’s trademarks when used on packaging descriptively). Fun fact: The term “cologne” was the first fragrance trademark for a perfume produced by Johann Maria Farina, but the mark became generic over time. *World’s oldest perfume manufacturer*, GERMAN PAT. & TRADE MARK OFF., https://www.dpma.de/english/our_office/publications/milestones/brandswithhistory/farina/index.html [<https://perma.cc/ELG9-AFWE>] (June 22, 2023). For a deeper dive into genericide, see John Dwight Ingram, *The Genericide of Trademarks*, 2 BUFF. INTELL. PROP. L.J. 154 (2004).

¹¹⁷ Rosin interview, *supra* note 23.

¹¹⁸ *Chanel Prevails in Unfair Competition Case Over Its N° 5 Perfume Bottle in China*, FASHION, L. & BUS. (Jan. 28, 2022), <https://www.fashionlawbusiness.com/flbstories/chanel-prevails-in-unfair-competition-case-over-its-perfume-bottles-in-china> [<https://perma.cc/RQ2U-L9PP>]; *Chanel Pushes for Another No. 5 Bottle Trademark Registration, Emphasizing “Look-For” Ads*, THE FASHION L. (Mar. 8, 2023), <https://www.thefashionlaw.com/chanel-pushes-for-no-5-bottle-trademark-registration-citing-acquired-distinctiveness> [<https://web.archive.org/web/20230312091342/https://www.thefashionlaw.com/chanel-pushes-for-no-5-bottle-trademark-registration-citing-acquired-distinctiveness>].

1. Colors as Trademarks

Chanel filed its first American trademark application for the CHANEL N° 5 mark with the U.S. Patent and Trademark Office on October 30, 1959.¹¹⁹ But even prior to registration, Chanel accrued rights in the perfume's name. Many trademark rights exist as soon as sellers use their trademarks in commerce, which Chanel began doing in the 1920s.¹²⁰ However, federal registration still confers certain benefits, such as constructive notice of the registrant's ownership and prima facie notice that the mark is valid.¹²¹ Unlike other forms of IP, such as copyright and patent, registered and enforced trademark rights can extend indefinitely.¹²² But registrations require renewal through evidence that the mark remains in use.¹²³ That proof is provided by submitting "specimens," or visual submissions that show the registered mark as actually used in commerce, to the U.S. Patent and Trademark Office every ten years.¹²⁴

In 2020, Chanel submitted its renewal specimen depicting the CHANEL N° 5 mark for its parfum.¹²⁵ While the word mark was the only subject of trademark renewal, a different feature of the fragrance cannot be ignored: the perfume's gold color. The pale champagne shade, clearly visible through every crystal flask, gives off a subtle glow that, as Deborah Gerhardt and Jon McClanahan Lee have documented, signals luxury.¹²⁶ Some perfumers, including Chanel, consider color when

¹¹⁹ This mark consists of CHANEL NO 5, Registration No. 701,978. The registration is in Class 3, which covers perfumes, for "perfumes" and other toiletries. *Id.* For a deeper dive into how to search and read trademark registrations, see Amanda Levendowski, *Trademarks as Surveillance Transparency*, 36 BERKELEY TECH. L.J. 439 (2021); Amanda Levendowski, *Dystopian Trademark Revelations*, 55 CONN. L. REV. (forthcoming 2023).

¹²⁰ 15 U.S.C. § 1125 (providing that unregistered marks can be protected from infringement, dilution, and tarnishment); *id.* § 1125(d) (providing that unregistered marks can be protected from cybersquatting).

¹²¹ *Matal v. Tam*, 582 U.S. 218, 226–27 (2017).

¹²² *See* 15 U.S.C. § 1058(a).

¹²³ *Id.* § 1058(b)(1)(A).

¹²⁴ TMEP § 904.07(a) (July 2022); 15 U.S.C. § 1059; TMEP § 1606.04.

¹²⁵ Combined Declaration of Use and/or Excusable Nonuse/Application for Renewal of Registration of a Mark under Sections 8 & 9, USTPO TSDR CASE VIEWER (Apr. 9, 2020), <https://tsdr.uspto.gov/documentviewer?caseId=sn72084287&docId=S8920200410152857&linkId=3#docIndex=2&page=1> [<https://perma.cc/3LMK-GBBZ>]. Some may be more familiar with a darker amber shade of Chanel N° 5—that is for the N° 5 eau de parfum, which is (counterintuitively) slightly less potent than the parfum formula. *N° 5 Eau de Parfum Spray*, CHANEL, <https://www.chanel.com/us/fragrance/p/125530/n5-eau-de-parfum-spray> [<https://perma.cc/EH2Q-PCDS>].

¹²⁶ Gold is the color most strongly associated with luxury. Deborah R. Gerhardt & Jon McClanahan Lee, *Owning Colors*, 40 CARDOZO L. REV. 2483, 2500 (2019). Fun fact: during my

formulating fragrance. As American indie perfumer Michael Nordstrand disclosed, “there is a lot of thought for somebody like me, who comes from a design background and art background, I think a lot about color and what it means.”¹²⁷

Trademarks, not unlike N° 5 itself, have a long legacy. Early marks date back to Stone Age cave paintings; the first trademark law was enacted in 1266.¹²⁸ For centuries, however, color alone simply could not be registered as a trademark in the United States.¹²⁹ As the Supreme Court explained in a 1906 case involving wire rope streaked with red, where color is made the essential feature of a trademark, it must be so defined or connected with some symbol or design that other manufacturers can know what they can safely do. “Whether mere color can constitute a valid trademark may admit of doubt. Doubtless it may, if it be impressed in a particular design, as a circle, square, triangle, a cross, or a star. But the authorities do not go farther than this.”¹³⁰ The Supreme Court was quite clear: color applied to entire goods was not protectable.

That changed when Congress enacted the Trademark Act of 1946, better known as the Lanham Act.¹³¹ In doing so, Congress expanded trademark registration to include slogans, sounds, and, for the first time, possibly colors.¹³² A subsequent duo of Supreme Court cases about

interview with Sarah McCartney, I smelled a vintage bottle of Chanel N° 5 from 1947—the color was nearly fluorescent orange. McCartney interview, *supra* note 12.

¹²⁷ Interview with Michael Nordstrand, American Indie Perfumer (Aug. 14, 2023) [hereinafter Nordstrand interview].

¹²⁸ Patrick J. Gallagher, *Trademarks Past and Present*, WIPO MAGAZINE (Mar. 2005), https://www.wipo.int/wipo_magazine/en/2005/02/article_0003.html [https://perma.cc/MQT9-GM56].

¹²⁹ See, e.g., Paul DuGuid, *California Marking & Collective Amnesia*, 47 U. CAL. DAVIS L. REV. 581 (2013) (discussing California’s first state-based trademark registration system, which did not include colors as qualifying trademarks); Patent Act of July 8, 1870, ch. 230, 16 Stat. 198 (not identifying colors as qualifying trademarks); *A. Leschen & Sons Rope Co. v. Broderick & Bascom Rope Co.*, 201 U.S. 166, 171 (1906); early American trademark laws were invalidated as unconstitutional because the legislation was grounded in the authority of the Progress Clause, which only animates copyright and patent law. In *re Trade-Mark Cases*, 100 U.S. 82, 93–99 (1879); subsequent trademark legislation invoked the authority of the Commerce Clause and international treaties—it survived. Graeme B. Dinwoodie, *The Common Law and Trade Marks in an Age of Statutes*, in *THE COMMON LAW OF INTELLECTUAL PROPERTY: ESSAYS IN HONOUR OF PROFESSOR DAVID VAVER*, 331, 338–39 (Catherine W. Ng, Lionel Bently & Guiseppina D’Agostino, eds., Hart Pub. 2010); Mark P. McKenna, *Trademark Law’s Faux Federalism*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW*, 288, 289–92 (Shyamkrishna Balganesh, ed., Cambridge U. Press. 2013).

¹³⁰ *A. Leschen & Sons Rope Co. v. Broderick & Bascom Rope Co.*, 201 U.S. 166, 171 (1906).

¹³¹ 15 U.S.C. §§ 1051–1072.

¹³² In *re Owens-Corning Fiberglas Corp.*, 774 F.2d 1116, 1119-20 (Fed. Cir. 1985).

insulation foam and dry-cleaning press pads determined whether iconic shades are protectable as trademarks.¹³³

In 1980, Owens-Corning Fiberglas Corporation took a gamble. The company applied to register the color pink as applied to fiberglass residential insulation, the foam-looking material used to pack wall interiors, which it had begun using in the 1950s. The company sought to make its insulation stick in consumers' minds by spending \$42,000,000 on advertising during primetime television.¹³⁴ Sticking with precedent, the Examiner denied the registration and the Trademark Trial and Appeal Board, which reviews Examiners' determinations, affirmed it.¹³⁵

On appeal to the Federal Circuit, however, the court proclaimed that “[c]olor marks, as other indicia [of source], [are] no longer barred from registration” under the Lanham Act.¹³⁶ That was not to say that all color marks were registrable. To evaluate color marks, Judge Pauline Newman used two trademark touchstones—functionality and distinctiveness—to determine that Owens-Corning's pink for insulation was a protectable color mark. Citing a series of post-Lanham decisions, Judge Newman explained that “[i]n determining registrability of color marks, courts have considered factors such as the nature of the goods, how the color is used, the number of colors or color combinations available, the number of competitors, and customary marketing practices.”¹³⁷ She also drew a hard line, concluding that “when the color applied to goods serves a primarily utilitarian purpose[,] it is not subject to protection as a trademark.”¹³⁸ Her conclusion was consistent with a prior Supreme Court decision that held that a product feature was utilitarian, or “functional,” if “it is essential to the use or purpose of the article or if it affects the cost or quality of the article.”¹³⁹ Examiners and judges were directed to evaluate three factors: “(1) whether a particular design yields a utilitarian advantage, (2) whether alternative designs are available in order to avoid hindering competition,

¹³³ The closest color to the Chanel N° 5 liquid is Pantone 127 C, a dusty golden yellow similar to the shade of a light lager.

¹³⁴ *In re Owens-Corning Fiberglas Corp.*, 774 F.2d at 1124–26. The company also ran an ad featuring a Native Alaskan, referred to by the court by the outdated and offensive shorthand “Eskimo,” who was staying cool in a Death Valley igloo wrapped in a blanket of pink insulation. *Id.* at 1126. Yikes.

¹³⁵ *Id.* at 1118. See also *In re Gen. Petroleum Corp. of Cal.*, 49 F.2d 966 (C.C.P.A. 1931) (denying registration for violet gasoline); *In re Sec. Eng'g Co.*, 113 F.2d 494 (C.C.P.A. 1940) (denying registration for blue-and-aluminum oil well reamers).

¹³⁶ *In re Owens-Corning Fiberglas Corp.*, 774 F.2d at 1120.

¹³⁷ *Id.* at 1120–21.

¹³⁸ *Id.* at 1120.

¹³⁹ *Inwood Lab'ys, Inc. v. Ives Lab'ys, Inc.*, 456 U.S. 844, 850 n. 10 (1982).

and (3) whether the design achieves economies in manufacture or use.”¹⁴⁰ Applying these factors, the Federal Circuit held that “the color ‘pink’ has no utilitarian purpose, does not deprive competitors of any reasonable right or competitive need, and is not barred from registration on the basis of functionality.”¹⁴¹

But there remained a lingering issue: did consumers actually associate pink insulation with Owens-Corning? The color pink obviously existed before and beyond the company’s insulation, but, under the Lanham Act, Owens-Corning could accrue secondary meaning in the color by demonstrating that pink had become “distinctive” of their goods through their longtime use, advertising expenditures, or survey evidence.¹⁴² According to Judge Newman, the company demonstrated distinctiveness through a combination of all three, citing Owens-Corning’s decades of use; their television, radio, and print advertising; its point-of-sale marketing materials; and a consumer survey showing that forty-one percent of polled consumers linked pink with Owens-Corning insulation.¹⁴³ Convinced that “Owens-Corning pink” was not functional and was distinctive, the Federal Circuit declared that Owens-Corning was the first American company “entitled to register its mark” in a color applied to the entirety of the goods.¹⁴⁴

While the Federal Circuit’s decision seemed definitive, it did not settle the dispute over whether the Lanham Act permitted the protection of color marks. Post-*Owens-Corning*, several circuits declined to extend trademark registration to colors, and the Supreme Court was asked to resolve the growing circuit split.¹⁴⁵ At the center of the controversy was a dry-cleaning company called Qualitex. In the 1950s, roughly the same time that Owens-Corning adopted pink for its insulation, Qualitex began using an iridescent green-gold color on their dry-cleaning press pads.¹⁴⁶ In 1991, Qualitex successfully registered “a particular shade of green-

¹⁴⁰ *In re Owens-Corning Fiberglas Corp.*, 774 F.2d at 1121 (quoting *In re Morton-Norwich Products, Inc.*, 671 F.2d 1332, 1340–41 (C.C.P.A. 1982)). Fun fact: *Morton-Norwich* was argued before Judge Howard T. Markey, later of the Federal Circuit, who is the namesake of the U.S. Patent and Trademark Office’s mascot, T-Markey. See Mark Trademan & T. Markey, U.S. PATENT & TRADEMARK OFFICE (Oct. 27, 2014, 9:09 AM), <https://www.uspto.gov/kids/team2.html> [<https://perma.cc/CK4X-F3CU>].

¹⁴¹ *In re Owens-Corning Fiberglas Corp.*, 774 F.2d at 1122.

¹⁴² 15 U.S.C. § 1052(f).

¹⁴³ *In re Owens-Corning Fiberglas Corp.*, 774 F.2d at 1125–27.

¹⁴⁴ *Id.* at 1128.

¹⁴⁵ *Compare* *NutraSweet Co. v. Stadt Corp.*, 917 F. 2d 1024, 1028 (7th Cir. 1990) (barring protection of color alone) *with* *Qualitex Co. v. Jacobson Prod. Co.*, 13 F.3d 1297 (9th Cir. 1994), *rev’d*, 514 U.S. 159 (1995), *and* *In re Owens Corning Fiberglas Corp.*, 774 F.2d 1116, 1128 (Fed. Cir. 1985) (allowing trademark protection for certain colors), *and* *Master Distributors, Inc. v. Pako Corp.*, 986 F.2d 219, 224 (8th Cir. 1993) (declining to prohibit protection for color as a trademark).

¹⁴⁶ *Qualitex Co. v. Jacobson Prod. Co.*, 514 U.S. 159 (1995).

gold” as a mark for, in part, “press pads and covers for press pads for commercial and industrial presses.”¹⁴⁷ When a rival company began selling its own green-gold press pads, Qualitex sued them for trademark infringement.¹⁴⁸ In the Supreme Court decision’s opening paragraphs, Justice Stephen Breyer was unequivocal: “there is no rule absolutely barring the use of color alone [as a trademark].”¹⁴⁹ The statement was consistent with U.S. Patent and Trademark Office practices, which followed the Federal Circuit’s lead in *Owens-Corning* by approving registrations for color alone when it has “become distinctive of the applicant’s goods in commerce,” and where “there is [no] competitive need for colors to remain available in the industry,” meaning that the color is not “functional.”¹⁵⁰

Accordingly, the Supreme Court adopted and applied the doctrines of functionality and distinctiveness as barometers for determining whether colors could be registered as trademarks. Justice Breyer acknowledged that “[color] can act as a symbol that distinguishes a firm’s goods and identifies their source, without serving any other significant function.”¹⁵¹ While Qualitex’s press pads did effectively hide stains, any color could do that job—the green-gold shade primarily “act[ed] as a symbol.”¹⁵² Further, Justice Breyer confirmed that Qualitex’s customers did, identify the green-gold press pads as the company’s, demonstrating distinctiveness.¹⁵³ The Court confirmed that “color alone, at least sometimes, can meet the basic legal requirements for use as a trademark.”¹⁵⁴ Qualitex’s success in the Supreme Court cemented the functionality/distinctiveness two-step test for color marks and paved the way for registering colors as trademarks consistently.

Post-*Qualitex*, several luxury companies successfully sought registrations for color marks, from LVMH’s Tiffany blue boxes to Louboutin’s red-soled shoes.¹⁵⁵ Could Chanel N° 5 gold be next? The

¹⁴⁷ The mark consists of a particular shade of green-gold, Registration No. 1,633,711.

¹⁴⁸ *Qualitex Co. v. Jacobson Prod. Co.*, No. 90-CV-1183, 1991 WL 318798 at *3 (C.D. Cal. Sept. 3, 1991), *aff’d in part, rev’d in part* 13 F.3d 1297 (9th Cir. 1994) *rev’d*, 514 U.S. 159 (1995).

¹⁴⁹ *Qualitex Co. v. Jacobson Prod. Co.*, 514 U.S. 159, 162 (1995).

¹⁵⁰ *Id.* at 166 (quoting U.S. Dep’t of Commerce, Patent and Trademark Off., TRADEMARK MANUAL OF EXAMINING PROCEDURE § 1202.04(e) (2d ed. 1993); *see In re Owens Corning Fiberglas Corp.*, 774 F.2d 1116 (CA Fed. 1985).

¹⁵¹ *Qualitex Co. v. Jacobson Prod. Co.*, 514 U.S. 159, 166 (1995).

¹⁵² *Id.* at 166.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ The mark consists of a shade of blue often referred to as robin’s-egg blue which is used on boxes, Registration No. 2359351; [t]he mark consists of a red lacquered outsole on footwear that contrasts with the color of the adjoining (“upper”) portion of the shoe, Registration No. 3361597. For a deeper dive into the lively litigation that permitted protection of Louboutin’s red soles—

perfume's color has been linked with the perfume for more than a century: an advertisement from the perfume's launch in 1921 prominently features the fragrance's gold shade.¹⁵⁶ Ninety-nine years later, Chanel's 2020 short film featuring "face" Marion Cotillard lingered on the fragrance for the final three seconds of the advertisement, highlighting the glowing gold liquid in the flask.¹⁵⁷ While the cost of the ad is not known publicly, Chanel spent \$33,000,000 on a single Chanel N° 5 advertisement in 2004—nearly as much as Owens-Corning over multiple years—and presumably the Cotillard ad also cost in the multiple millions.¹⁵⁸ Given Chanel N° 5's longtime status as the leading fragrance in the world, a survey could certainly reveal that a substantial portion of consumers associate Pantone 127 C, a "medium light shade of yellow," with Chanel N° 5.

The shade's function still matters immensely, and it is likely dispositive. Some perfumeries choose combinations of active ingredients that simultaneously produce the perfect scent and color, like niche perfumer D.S. & Durga's Pistachio perfume, which is naturally a pale green without color-enhancing additives.¹⁵⁹ Crude citrus oil is dark yellow; red mandarin is red; oakmoss is bottle green.¹⁶⁰ Colors created by carefully chosen ingredients that simultaneously play roles in the fragrance are, as the Supreme Court explained in a case about traffic signs, "essential to the use or purpose of the article."¹⁶¹ Because those ingredients reflect so-called utilitarian functionality, such shades are excluded from trademark protection.

excepting on red shoes, like those of Yves Saint Laurent, for functionality reasons—see Claire Guehenno, *Color War: The Louboutin Decision and Single-Color Marks in the Fashion Industry*, 4 HARV. J. SPORTS & ENT. L. 225 (2013); Danielle E. Gorman, Note, *Protecting Single Color Trademarks in Fashion After Louboutin*, 30 CARDOZO ARTS & ENT. L.J. 369 (2012).

¹⁵⁶ *Launch of Chanel N°5 Perfume*, CHANEL, <https://www.chanel.com/us/about-chanel/the-history/1920/> [https://perma.cc/S4ZR-2UXC].

¹⁵⁷ CHANEL, *CHANEL N°5, the Film with Marion Cotillard*, YOUTUBE (Oct. 29, 2020), <https://www.youtube.com/watch?v=qeMqcApmS7g> [https://perma.cc/9NZL-PHKH].

¹⁵⁸ *This Chanel N.5 Ad is the Epitome of Excess, Pre-Financial Crash*, ELEPHANT (Sept. 3, 2020), <https://elephant.art/chanel-no-5s-2004-ad-is-the-epitome-of-excess-pre-financial-crash-03092020/> [https://perma.cc/53SX-2EKH]; CHANEL, *CHANEL N°5, the film with Nicole Kidman – CHANEL Fragrance* (Sept. 19, 2012), <https://www.youtube.com/watch?v=0hcaaKhGL00> [https://perma.cc/X9XT-YE7L].

¹⁵⁹ E-mail from Ashley Williams to Amanda Levendowski, Associate Professor of L., Geo. Univ. L. Ctr. (Mar. 20, 2023) (on file with author) ("[W]e did not add any color to our Pistachio.").

¹⁶⁰ Rosin interview, *supra* note 23.

¹⁶¹ *TrafFix Devices, Inc. v. Marketing Displays, Inc.*, 532 U.S. 23, 32 (2001) (quoting *Qualitex Co. v. Jacobson Prod. Co.*, 514 U.S. 159, 165 (1995)); *see also* *Nor. Am. Chemical v. O. M. Scott & Sons Co.*, 4 U.S.P.Q. 2d 1316, 1320 (E.D. Pa. 1987) (blue color of fertilizer was functional because it signaled the presence of nitrogen).

But Chanel N° 5's color is not utilitarian—at least, not exclusively. The shade of Chanel N° 5 has changed over time, from a near fluorescent orange in the late 1940s to the present pale gold shade associated with the perfume.¹⁶² Today, Chanel identifies Yellow 5, Yellow 6, Red 33, and Red 4 among the perfume's ingredients.¹⁶³ Fragrance colors may also be enhanced with additives, whether to appeal to customers or amplify the impression of the fragrance. However, those shades pose a different functionality problem: aesthetic functionality, which kicks in where there is “no indication that the . . . color . . . ha[s] any bearing on the use or purpose of the product or its cost or quality,” yet the hue has other competitive advantages.¹⁶⁴ Colorful perfumes can make a lasting impact. As American independent perfumer Joey Rosin observed, “[s]ometimes materials are added to color [perfumes and] you'd have that goal to have things that are violently blue, aquamarine blue. I don't know what that perfume is called. I don't even know how it smells, but I just know that it's so blue.”¹⁶⁵ Similarly, Chanel N° 5 is a distinctive gold, which—like the perfume and brand itself—consumers associate with luxury.¹⁶⁶ Other perfumes, like Viktor & Rolf's popular Flowerbomb, use additives to achieve a rosy hue that teases the floral rose note driving the fragrance.¹⁶⁷ Both types of additives are included for their appeal and amplifying effects, or, in the language of trademark law, their aesthetics.

There is also a sustainability limitation to protecting scents' shades as trademarks. In a 1906 lawsuit over dual-colored match tips, the Sixth Circuit raised the existential problem posed by color marks: there are only so many colors. “The primary colors, even adding black and white, are but few,” wrote Judge John Richards, “[i]f two of these colors can be appropriated for one brand of tipped matches, it will not take long to

¹⁶² I had an opportunity to smell a bottle from 1947 during my interview with Sarah McCartney, which clarified why the perfume became a classic. McCartney interview, *supra* note 12.

¹⁶³ *N° 5 Eau de Parfum Spray*, *supra* note 125. The exact formula is likely a trade secret, discussed *infra* Section II.A.3.b.

¹⁶⁴ *TrafFix Devices, Inc. v. Marketing Displays, Inc.*, 532 U.S. 23, 33 (2001) (citing *Qualitex Co. v. Jacobson Prod. Co.*, 514 U.S. 159, 165 (1995)).

¹⁶⁵ Rosin interview, *supra* note 23.

¹⁶⁶ Deborah R. Gerhardt & Jon McClanahan Lee, *Owning Colors*, 40 *CARDOZO L. REV.* 2483, 2500 (2019). Rosin reported “accidentally” making perfumes the same shade of Champagne, noting that it is “a very easy color to make.” Rosin interview, *supra* note 23. The idea of the color being proprietary “never even occurred” to him. *Id.*

¹⁶⁷ *Flowerbomb Eau de Parfum*, VIKTOR&ROLF (2023), https://us.viktor-rolf.com/fragrance/flowerbomb-eau-de-parfum-VKR_002.html#tab=ingredients [<https://perma.cc/D2L6-K6ME>]. Fun fact: Chanel nose Jacques Polge co-created Flowerbomb while he worked at the composition house IFF. *Olivier Polge*, FRAGRANTICA https://www.fragrantica.com/noses/Olivier_Polge.html [<https://perma.cc/DW4Y-RSY>]. Flowerbomb's shade of pink is strikingly similar to Chanel Chance. Nordstrand interview, *supra* note 127.

appropriate the rest.”¹⁶⁸ In an industry where many perfumes fall into a limited range of clear, almond, gold, and amber shades, so-called “color depletion” is a concern for perfumeries.¹⁶⁹ In an empirical work investigating the parallel issue of word mark depletion, Barton Beebe and Jeanne Fromer concluded that “both depletion and congestion are becoming increasingly serious problems for the trademark system.”¹⁷⁰ There are roughly 171,146 in-use English words, 47,156 obsolete ones, and untold numbers of fanciful marks that are not yet words at all.¹⁷¹ Compared to colors, word depletion is a non-issue: there are only 2,390 Pantone colors, many of which are not desirable because they are adjacent to existing perfumes’ colors, appear unattractive, create unnecessary expenses or are otherwise unsustainable as scents’ shades.¹⁷² However, the problem of color depletion does not necessarily sway courts.

Qualitex’s competitor invoked color depletion theory, explaining that “if one of many competitors can appropriate a particular color for use as a trademark, and each competitor then tries to do the same, the supply of colors will soon be depleted.”¹⁷³ Justice Breyer was unpersuaded, largely because the argument “relies on an occasional problem to justify a blanket prohibition. When a color serves as a mark, normally alternative colors will likely be available for similar use by others.”¹⁷⁴ While that may be true for teal insulation and orange press pads, it’s less applicable to perfumes, which tend to occupy a relatively narrow range of clear, almond, golden, and amber colors, most of which happen to fall within a

¹⁶⁸ *Diamond Match Co. v. Saginaw Match Co.*, 142 F. 727, 729 (6th Cir. 1906).

¹⁶⁹ Litigants have raised color depletion as a defense. When asked why an alleged infringer adopted a particular color mark, the owner answered, “[w]e’re running out of colors.” *Kasco Corp. v. Southern Saw Serv. Inc.*, 27 U.S.P.Q. 2d 1501, 1505 (T.T.A.B. 1993). *See also* *Campbell Soup Co. v. Armour & Co.*, 175 F.2d 795, 798 (3d Cir. 1949) (denying registration for Campbell’s red and white coloring for soup cans).

¹⁷⁰ Barton Beebe & Jeanne C. Fromer, *Are We Running Out of Trademarks? An Empirical Study of Trademark Depletion and Congestion*, 131 HARV. L. REV. 945, 1041 (2018).

¹⁷¹ Beth Sagar-Fenton & Lizzy McNeill, *How Many Words Do You Need to Speak a Language?*, BBC (June 23, 2018), <https://www.bbc.com/news/world-44569277> [<https://perma.cc/6N4N-7CHZ>].

¹⁷² Joy Stempkowski, *When Should You Replace Your Pantone Guides?*, PANTONE <https://www.pantone.com/articles/technical/graphics-system-edition-how-many-pantone-colors-are-you-missing> [<https://perma.cc/X2N7-8957>]. Although some colors are more desirable than they seem—UPS registered the fairly unremarkable Pullman brown as a mark for its postal vehicles. U.S. Trademark Application Serial No. 7677164 (filed Mar. 1, 2022). Fun fact: UPS’ color mark was the third registration after Owens-Corning pink and Qualitex green-gold. Addy Bink, *Brown Wasn’t Always UPS’s Color: Here’s Why It Is Now*, THE HILL (Aug. 21, 2022), https://thehill.com/homenews/nexstar_media_wire/3591855-brown-wasnt-always-upss-color-heres-why-it-is-now [<https://perma.cc/EC3P-W6FD>].

¹⁷³ *Qualitex Co. v. Jacobson Prod. Co.*, 514 U.S. 159, 168 (1995).

¹⁷⁴ *Id.*

few shades of Chanel N° 5 gold.¹⁷⁵ To confront that issue, the Supreme Court turned back to the doctrine of functionality. “[I]f a ‘color depletion’ . . . problem does arise,” Justice Breyer wrote, “the trademark doctrine of ‘functionality’ normally would seem available to prevent the anticompetitive consequences . . . minimizing that argument’s practical force.”¹⁷⁶

Allowing Chanel to monopolize Chanel N° 5 gold would affect competitors. Multiple fragrances by niche perfumer Frédéric Malle, for example, are closely adjacent to Chanel N° 5’s gold, all of which would require expensive, time-consuming, and potentially scent-altering reformulation to avoid allegations of trademark infringement.¹⁷⁷ Those are the select wares of a lone perfumery—extending trademark rights to such a common color of perfume would certainly “put competitors at a significant non-reputation-related disadvantage.”¹⁷⁸

When fragrances’ colors are attributable to note-contributing ingredients, those colors cannot be protected due to utilitarian functionality. And when their colors are selected to provide other competitive advantages, such as appealing to customers, those colors are precluded by aesthetic functionality. For the latter reason, it is unlikely that Chanel N° 5’s of gold operates as a mark. But ambiguity around the scope of color rights for perfumes presents a problem for aspiring perfumemakers. Even if noses are not thinking of their notes in terms of “color marks” and “infringement,” they consider color when formulating their own fragrances, whether to be independently attention-getting or avoid the unwanted attention from others. Perfumeries’ rights in color marks for fragrances are unlikely, but that has yet to be clearly

¹⁷⁵ Another theory, color recognition theory, counters that many colors are too “close” to one another to be effectively or reliably distinguishable. Sunila Sreepada, *The New Black: Trademark Protection for Color Marks in the Fashion Industry*, 19 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1131, 1141–42 (2009). Courts do not care much for that argument, either. *See* 514 U.S. at 167–68.

¹⁷⁶ 514 U.S. at 169.

¹⁷⁷ *See, e.g.*, Musc Ravageur, Carnal Flower, Noir Epices, and Rose Tonnerre are select examples. *PERFUMES COLLECTION, EDITIONS DE PARFUMS FREDERIC MALLE* (2023), <https://www.fredericmalle.com/products/19566/perfume> [<https://perma.cc/W453-5UBW>].

¹⁷⁸ Justin Hughes, *Cognitive and Aesthetic Functionality in Trademark Law*, 36 CARDOZO L. REV. 1227, 1233 (2015). *See* *PERFUMES COLLECTION, EDITIONS DE PARFUMS FREDERIC MALLE* (2023), <https://www.fredericmalle.com/products/19566/perfume> [<https://perma.cc/W453-5UBW>] (the flavor of functionality implicated by fragrance color is “aesthetic functionality,” which focuses on a visual aspect of the mark rather than a utilitarian one); *Pagliari v. Wallace China Co.*, 198 F.2d 339 (9th Cir.1952) (pioneering the theory in a dispute of floral designs on hotel china). The doctrine has a convoluted and complicated history. For a deeper dive into aesthetic functionality. *See* Justin Hughes, *Cognitive and Aesthetic Functionality in Trademark Law*, 36 CARDOZO L. REV. 1227 (2015); A. Samuel Oddi, *The Functions of ‘Functionality’ in Trademark Law*, 22 HOUS. L. REV. 925, 951–62 (1985).

established. A lack of clarity deterred neither Owens-Corning nor Qualitex from seeking and enforcing trademark protection in their respective colors, and aspiring perfumemakers might be right to be wary.¹⁷⁹ As McCartney summarized, “I don’t understand the fun in [protecting colors] in the sense that it . . . forbids the other creators and artists to use it and create, like very beautiful things with it . . . I think it’s a limitation you put on others that yeah, that’s a bit selfish . . . I don’t really like the concept.”¹⁸⁰ Ultimately, as Rosin quipped, the smell of the scent will provide the “most color.”¹⁸¹

2. Odors as Copyrightable

As Ernst Beaux reflected, “it is the aldehyde note that, since the creation of Chanel N° 5, has more than anything else influenced new perfume compositions.”¹⁸² His fragrance is famed for its overwhelmingly icy top note, which comes from those aldehydes.¹⁸³ There are many types of aldehydes, some that smell fatty, others burnt, and still more floral. The aldehydes in Chanel N° 5, known as C-12, smell to many people like “winter.”¹⁸⁴ By incorporating previously unimagined quantities of C-12 into novel combinations to produce Chanel N° 5, Beaux created an odor that both made and changed history.¹⁸⁵

Some odors can be registered as trademarks.¹⁸⁶ The first American scent mark was registered in 1991 for “a high impact, fresh floral fragrance reminiscent of plumeria blossoms” for embroidery thread.¹⁸⁷ Other scent marks protect the “sweet, slightly musky, vanilla fragrance, with slight overtones of cherry, combined with the smell of a salted,

¹⁷⁹ If anything, the law was stacked against Owens-Corning, and it hardly favored Qualitex.

¹⁸⁰ McCartney interview, *supra* note 12.

¹⁸¹ Rosin interview, *supra* note 23.

¹⁸² MAZZEO, *supra* note 90, at 67.

¹⁸³ *Id.* at 62. Chanel N° 5 is often misattributed as the first perfume to use aldehydes, but that would be a tie between Pierre Armingeat’s Rêve d’Or and Georges Darzens’ Floramyne, both from 1905. *Id.* at 67. Chanel N° 5 did not even popularize aldehydes—that distinction goes to Après L’Ondée. *Id.*

¹⁸⁴ *Id.* at 62.

¹⁸⁵ *Id.* at 66.

¹⁸⁶ The “trademarkable” in the Section heading is a shorthand—one does not trademark a thing; one registers a trademark in a thing.

¹⁸⁷ The mark is a high impact, fresh, floral fragrance reminiscent of plumeria blossoms. No. 1639128. For a deeper dive into how the U.S. Patent and Trademark Office permitted a scent mark, see *In re Celia Clarke*, 17 U.S.P.Q. 2d 1238 (T.T.A.B. 1990). Play-Doh also has a mark registered for its molding compound. NO DRAWING – SENSORY MARK, Registration No. 5467089. Clarke’s mark was later cancelled. The mark is a high impact, fresh, floral fragrance reminiscent of plumeria blossoms. No. 1639128.

wheat-based dough” of Play-Doh molding clay and the “flowery musk scent” of Verizon Wireless stores.¹⁸⁸ But these disparate scent marks share something: none are for perfumes, which cannot be registered as marks in the United States. As the U.S. Patent and Trademark Office has explained, “[s]cents that serve a utilitarian purpose, such as the scent of perfume . . . are functional and not registrable.”¹⁸⁹ Consequently, the aldehydic bouquet of Chanel N° 5 can never qualify for American trademark protection. Instead, perfumeries may turn to an alternative: copyright law.

Cronin predicted that, “[g]iven . . . the significant financial stake in [the perfume] industry held by U.S. concerns, it is inevitable that a U.S. court will soon encounter a prima facie dispute involving a copyright claim for a manufactured fragrance.”¹⁹⁰ Copyright owners are granted exclusive rights in their work, like the right of reproduction.¹⁹¹ Protection is robust, though not indefinite. In the United States, an author’s copyright lasts for their lifetime and extends seventy years beyond death.¹⁹² But copyright only protects “original works of authorship fixed in any tangible medium of expression . . . from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”¹⁹³ When it comes to perfumes, the qualifying questions are complicated because American courts have never addressed whether perfumes are copyrightable. However, French ones have—many times over.

In 1975, the Paris Court of Appeals became the first court to address whether perfume is copyrightable.¹⁹⁴ French mainstream perfumery de Laire contracted with the luxury house of Rochas to create new scents for that house based on Laire’s own formulas, which it disclosed to Rochas.¹⁹⁵ The perfumery later alleged that Rochas infringed copyrights in the perfumes by manufacturing its own identical fragrances.¹⁹⁶ While the Court determined that de Laire’s formulas were not copyrightable, Claire Guillemin revealed why its decision was largely attributable to two

¹⁸⁸ The mark is a scent of a sweet, slightly musky, vanilla fragrance, with slight overtones of cherry, combined with the smell of a salted, wheat-based dough, Registration No. 5,467,089; The mark consists of a flowery musk scent, Registration No. 4,618,936.

¹⁸⁹ TMEP § 1202.13 (24th ed. July 2022); *TrafFix Devices, Inc. v. Marketing Displays, Inc.*, 532 U.S. 23, 24 (2001) (quoting *Qualitex Co. v. Jacobson Products Co.*, 514 U.S. 159, 165 (1995)).

¹⁹⁰ Cronin, *Genius in a Bottle*, *supra* note 110, at 429.

¹⁹¹ 17 U.S.C. § 106 (2002).

¹⁹² 17 U.S.C. § 302 (1998).

¹⁹³ 17 U.S.C. § 102(a) (1976).

¹⁹⁴ *Rochas v. de Laire*, Cour d’appel Paris, 4th ch., 3 July 1975, *Gaz. Pal.*, 21–22 (1976); Cronin, *Genius in a Bottle*, *supra* note 110, at 435.

¹⁹⁵ *Id.* at 436.

¹⁹⁶ *Id.*

tactical errors.¹⁹⁷ First, she explained, the error of nomenclature. In the lower court, de Laire repeatedly referred to their allegedly infringed perfumes as “inventions,” triggering a perception that perfumes are industrial rather than intellectual works, which would be better suited to patent protection.¹⁹⁸ This perception was amplified by a second error: the erasure of noses, the so-called “authors” of perfumes.¹⁹⁹ De Laire never named the perfumes’ noses in the litigation.²⁰⁰ Without evidence of authors whose personalities could be perceived through the perfumes, the Court declined to extend copyright protection to de Laire’s perfumes.²⁰¹

Importantly, however, the Court did not hold that perfumes were not protectable by copyright law. To the contrary, the Court acknowledged that the list of copyrightable works of intellect (“oeuvres de l’esprit”) was non-exhaustive, leaving open the door to further attempts to seek copyright protection for perfumes.²⁰²

Multiple such attempts were made, with mixed results, over the decades.²⁰³ But in a recent French Supreme Court case, copyrightability was again denied to perfume.²⁰⁴ According to the Court, fragrances are not sufficiently original to merit protection. The Court likened perfumers’ work to that of industrial artisans, like plumbers and carpenters, whose skills do not produce original works.²⁰⁵ Further, the Court held, fragrances are not works of authorship at all. Rather, “they are a product of the application of purely technical knowledge and lack, therefore a discernable association with the individual personalities of their

¹⁹⁷ *Id.*; Claire Guillemin, LAW & ODEUR: FRAGRANCE PROTECTION IN THE FIELDS OF PERFUMERY AND COSMETICS (2016).

¹⁹⁸ *Id.* at 44; Claire Guillemin, LAW & ODEUR: FRAGRANCE PROTECTION IN THE FIELDS OF PERFUMERY AND COSMETICS (2016).

¹⁹⁹ GUILLEMIN, *supra* note 110.

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² *Id.*

²⁰³ Compare *Mugler v. Molinard*, Tribunal de Commerce [T. Com] [court of commerce] Paris, 15e ch., Sept. 24, 1999, *Gaz. Pal.* 2001, 17-18.01, no. 17-18 (holding perfume protectable by copyright), and *Societe Bellure v L’Oréal SA*, Cour d’appel de Paris, Jan. 25, 2006, with *Beaute Prestige International v Senteur Mazal*, Cour de Cassation (case 07-13952, July 1, 2008) (overruling lower court decision that perfume is protectable by copyright). For a deeper dive into perfume-related litigation in France, see Cronin, *Genius in a Bottle*, *supra* note 110, and Cronin, *Law and Odor*, *supra* note 110.

²⁰⁴ *Bsiri-Barbir v. Haarman & Reimer*, Cour de cassation [cass. 1e civ.] Paris, June 13, 2006, d. 2006, *Somm.* 1741, J. daleau.

²⁰⁵ *Id.*

creators.”²⁰⁶ Even in France, the heart of the Western fragrance industry, perfumes are not protectable by copyright.

French courts did not settle perfume’s non-copyrightability for Europe, let alone globally. Rather, the Dutch Supreme Court has taken the opposite approach, holding that perfumes are more than industrial or technical works because perfumes can bear the “personal imprint of the creator,” transforming scents into works of authorship.²⁰⁷

While the issue has never been litigated, it seems likely that American courts would lean toward the Dutch analysis of authorship because the bar is so low. Confronted with the copyrightability of phone books, which used to publish the names and contact information for local residents, the Supreme Court determined that satisfying the originality requirement “necessitates independent creation plus a modicum of creativity.”²⁰⁸ Facts, such as those contained in a phone book, could not qualify for copyright protection.²⁰⁹ However, Justice Sandra Day O’Connor elaborated that the standard is not a high bar, as “[t]here remains a narrow category of works in which the creative spark is utterly lacking or so trivial as to be virtually nonexistent.”²¹⁰

Perfumes may differ from other recognized works of authorship, such as symphonies or paintings, but they do not lack creative spark. Rosin likened perfumery to poetry, stating that “the perfumer mindset and training has to do with figuring out the vocabulary and the nomenclature [of scent] and really like, what does it mean to be citrus or citric? . . . You know it’s sweet, [but] what’s a sweet smell? Like sugary sweet, is it like candied sweet? Is it burnt sweet? Is it maple sweet? Is it flowery sweet? There’s so many different [sweetnesses]—is it cavity-inducing saccharine?”²¹¹ Alternately, Nordstrand linked perfumery to programming, another copyrightable art, by saying that “there is definitely a very scientific and mathematical area of perfumery, which you know, directly relates to the composition, you’d have to think creatively So I could definitely see a connection to coding,

²⁰⁶ David A. Einhorn & Lesley Portnoy, *The Copyrightability of Perfumes: I Smell a Symphony*, INTEL. PROP. TODAY, [https://archive.pwh/4sd9c] (quoting Bsiri-Barbir v. Haarman & Reimer, Cour de cassation [cass. 1e civ.] Paris, June 13, 2006, d. 2006, Somm. 1741, J. daleau).

²⁰⁷ Lancôme/Kecofa, Hoge Raad der Nederlanden [H.R.] [Sup. Ct. of the Netherlands], June 16, 2006, AMI 2006/5, at 161 (ann. Quaadvlieg) (Neth.); Cronin, *Genius in a Bottle*, *supra* note 110, at 428.

²⁰⁸ *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 340 (1991); *see also* H.R. REP. NO. 94-1476, at 51 (1976) (“The phrase ‘original works of authorship,’ which is purposely left undefined, is intended to incorporate without change the standard of originality established by the courts under the present [1909] copyright statute.”).

²⁰⁹ *Feist*, 499 U.S. at 360.

²¹⁰ *Id.* at 359.

²¹¹ Rosin interview, *supra* note 23.

something very mathematical and analytical.”²¹² McCartney, however, views her fragrances as fleeting, “a bit more like kind of invisible sculpture or watercolors.”²¹³

Artistic analogies aside, Ernst Beaux imbued the formula for Chanel No. 5 with, to paraphrase the Dutch court, a “personal imprint” capturing his experiences: the fragrance’s abundance of sparkling aldehydes. Chanel No. 5 was not the first fragrance to use aldehydes—that was Houbigant’s *Quelques Fleurs* in 1912—but Beaux was inspired to incorporate their icy effervescence because of his experience serving in the military during World War I, when he was stationed near the Arctic Circle.²¹⁴ To some, including Beaux, aldehydes’ olfactory association with winter captured those experiences. Beaux’s invocation of the Arctic Circle was layered. Not only was it personal, but that decision reflected a deep knowledge of the audience he most needed to impress: Coco Chanel. Beaux was introduced to his client by her lover, Russian Duke Dmitri Pavlovich Romanov (of *the Romanovs*), who helped murder Rasputin.²¹⁵ Rooted in her lover’s Russian heritage, Chanel may have shared an affinity for the crisp scent of winter air.²¹⁶ Not only do many consider Beaux a brilliant artist—Chanel No. 5 is regarded as the most iconic fragrance by many—but it is entirely plausible that American copyright law would recognize him as an author as well.²¹⁷

The nose’s profound impact as a perfume’s author has led some, including David Einhorn and Lesley Portnoy, to conclude that perfumes are copyrightable in the United States because perfumers are obviously authors.²¹⁸ As Cronin reflected, however, “[w]hether a perfume may be a ‘work of authorship’ is a more subtle question than whether it may be

²¹² Nordstrand interview, *supra* note 127.

²¹³ McCartney interview, *supra* note 12.

²¹⁴ *Ingredient Profile—Aldehydes: The Success Behind Chanel No. 5*, IBERCHEM: BLOG (Nov. 6, 2017), <https://iberchem.com/ingredient-aldehydes> [<https://perma.cc/R9QN-BYSS>]; MAZZEO, *supra* note 90, at 65.

²¹⁵ Nazanin Lankarani, *Inspired by Imperial Russia, Chanel’s New Jewelry Collection Recalls the Young Coco Chanel’s Affair with a Romanov Duke*, ARTNET NEWS (July 2, 2019), <https://news.artnet.com/art-world/le-paris-russe-de-chanel-high-jewelry-collection-1590232> [<https://perma.cc/LC3A-8KML>].

²¹⁶ MAZZEO, *supra* note 90, at 57.

²¹⁷ Even expert perfumers disagree. See, e.g., *Perfumery: Art or Science*, GIVAUDAN, <https://www.givaudan.com/our-company/rich-heritage/250-year-odyssey/perfumery-art-or-science> [<https://perma.cc/LKM3-CEUN>]. Perfumes are often treated as art, however. The Louvre recently collaborated with perfumers to create scents inspired by their collection. Emma Moore, *Leading Perfumers Create Fragrances Inspired by the Louvre’s Great Works of Art*, WALLPAPER* (Oct. 17, 2022), <https://www.wallpaper.com/lifestyle/officine-universelle-buly-louvre-museum-fragrance-art> [<https://perma.cc/UJG5-667X>].

²¹⁸ Cronin, *Lost and Found*, *supra* note 10, at 277–79; Einhorn & Portnoy, *supra* note 206, at 8.

fixed.”²¹⁹ Fixation requires that works be “sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.”²²⁰ Importantly, fixation occurs when the work “can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”²²¹ And while perfumes are perceived through the sense of smell, scents are neither permanent nor stable.

Perfume is carefully chemically structured to develop as it dries down. Top notes disappear, leaving behind heart and base notes.²²² These notes are chosen to create harmonious odors at each stage of evaporation. Indeed, the perfume industry has an entire vocabulary for expressing the ephemeral nature of fragrance: “longevity” reflects how long a scent can be perceived (which is always less than indefinitely), and “sillage” represents the strength of the scent trail left by perfume (which can be strong or weak or nonexistent and also fades with time).²²³ The Dutch Court decision recognizes that the copyrightability of perfume is premised on the assumption that “*scent* is entitled to protection under copyright law, as incorporated in the olfactory substance contained in the perfume bottles.”²²⁴

However, simply comparing scents from two flasks of fragrances, as the French and Dutch courts apparently did, does not fully capture the characters of those fragrances, let alone their similarities and differences.²²⁵ Sniffing perfume from a flask is contrary to best practices. Scents are best smelled from skin or “scent strips,” which are small, sturdy strips of paper that facilitate smelling perfumes.²²⁶ There are even proper methods of sniffing a scent strip, such as the “bunny sniff” or “fly by” methods, neither of which are mentioned in the courts’ opinions.²²⁷ But smelling from the bottle presents an even bigger problem: perfumes are not built for bottles. They’re built for bodies.²²⁸

Chanel has long recognized the intimate connection between scent and skin. So much that the luxury house inadvertently provided reason to

²¹⁹ Cronin, *Genius in a Bottle*, *supra* note 110, at 451.

²²⁰ 17 U.S.C. § 101.

²²¹ 17 U.S.C. §§ 101, 102(a).

²²² *Basic Perfume Primer*, *supra* note 57, at 11.

²²³ The French pronunciation of “sillage” approximates “see-yahz.” *Sillage*, LAROUSSE, <https://www.larousse.fr/dictionnaires/french-english/sillage/71952> [https://perma.cc/CK89-ULRM].

²²⁴ Jehoram Herman Cohen, *Shall the Perfume Scent Decision of the Dutch Supreme Court Conquer the EU and the World or Will It Perish*, 54 J. COPYRIGHT SOC’Y U.S.A. 571, 572 (2007).

²²⁵ Einhorn & Portnoy, *supra* note 206.

²²⁶ *Basic Perfume Primer*, *supra* note 57, at 11.

²²⁷ *Id.* at 12.

²²⁸ AFTEL, *supra* note 52, at 3–4.

reject the notion that fragrances are fixed. A 1956 Chanel N° 5 campaign adopted the slogan, “Chanel *becomes* the woman you are.”²²⁹ It cooed, “[a] perfume is different on women because every woman has a skin chemistry of her own,” and continued, “Chanel *becomes* you because it becomes *you*.”²³⁰ Differences in skin chemistry are under-researched, but variations can be introduced by pH balance, skin texture, diet, and environment.²³¹ Michael Nordstrand, an independent American perfumemaker, explained that, when designing fine fragrances, he is “thinking [] chiefly of skin . . . but also hair, and fiber, different fiber. And then also thinking . . . about, you know, atmospheric conditions and things like that.”²³² Not only can different bodies shift scents, but bodies sense scents differently. The human sense varies by sex, age, hormones, environment, and other health factors.²³³ Chanel’s advertisement marketed the fundamental, fleeting flexibility of fragrance, the very opposite of fixation.

As Jeanne Fromer and Chris Sprigman have noted, fixation serves an important evidentiary function: it enables judges and jurors to compare two works to see whether there has been infringement.²³⁴ That function is undermined when odors smell radically different between bottle and body, as well as on different bodies, through different bodies, and in different environments.²³⁵ As Cronin explained, “[o]ur ability to conjure and reproduce a scent is drastically inferior to our ability to do the same with an image or sound.”²³⁶ However, even the Dutch Supreme Court seems likely to deny copyright protection, as the Court recognized that “scent itself is too fleeting and variable and dependent on the

²²⁹ MAZZEO, *supra* note 90, at 11.

²³⁰ *Id.* The extent to which this is biochemically accurate is disputed, but it remains a lively point of discussion (and marketing) among perfumers.

²³¹ Amy Lawrenson & Lucy Chen, *Whoa! Skin Type Can Change the Way Perfume Smells*, BYRDIE (Mar. 7, 2022, 7:00 P.M.), <https://www.byrdie.com/why-does-perfume-smell-different-on-everyone> [<https://perma.cc/A899-2QWD>]; Cronin, *Genius in a Bottle*, *supra* note 110, at 461–62.

²³² Nordstrand interview, *supra* note 127.

²³³ Gabrielle E. Brill, *Make Sense of Scent Trademarks: The United States Needs a Graphical Representation Requirement*, 56 U. RICH. L. REV. 19, 32 (2022); Erin M. Reimer, Note, *A Semiotic Analysis: Developing a New Standard for Scent Marks*, 14 VAND. J. ENT. & TECH. L. 693, 717 (2012).

²³⁴ JEANNE C. FROMER & CHRIS JON SPRIGMAN, COPYRIGHT LAW: CASES AND MATERIALS 18 (2023 ed.). This casebook is open source under a Creative Commons license.

²³⁵ See Douglas Lichtman, *Copyright as a Rule of Evidence*, 52 DUKE L.J. 683, 730–34 (2003); Lydia Pallas Loren, *Fixation as Notice in Copyright Law*, 96 B.U. L. REV. 939 (2016).

²³⁶ Cronin, *Genius in a Bottle*, *supra* note 110, at 446. He also objects to copyrightability for fragrances given the “dramatic differences in human acuity among the senses,” which he discusses in greater depth. *Id.* at 444; see generally *id.* at 427–447.

environment.”²³⁷ Several interviewed perfumers echoed the sentiment that fragrance is fleeting.²³⁸ Fleeting, variable, dependent—all variations supporting the conclusion that fragrance is not fixed. It follows that odor is also not copyrightable, at least in the United States.

3. Illustrating Proprietary Strategies

a. Molecules as Patentable

Chanel N° 5 is famed for its aldehydes, but it is also a zoo. Its notes include castoreum from the urine-filled sacs of beavers, ambergris from the vomit of whales, and musk from the caudal glands of the male musk deer.²³⁹ There is also another animalistic note underpinning the perfume. In 1972, Jacques Leal, then the London Chairman of Chanel, revealed that a key ingredient in Chanel N° 5 was the “sweat of the whipped Abyssinian civet cat.”²⁴⁰ In an interview, Leal confided that “[w]e don’t usually like to admit, but it’s one of those ancient techniques the Chinese invented.”²⁴¹ He explained that “[t]hey put the cat’s head into a sort of torture chamber, whip it, the cat gets mad, and it gives off a glandular secretion.”²⁴² Perhaps mistaking the source of the interviewer’s concern, Leal clarified, “[g]ood heavens . . . a Frenchman wouldn’t whip cats. [W]e just buy the stuff in bottles. Don’t ask me how many whipped cats go into a year’s output. I wouldn’t dare hazard a guess.”²⁴³ Animal rights activists did hazard a guess, however, and Leal’s remarks sparked

²³⁷ David A. Einhorn & Lesley Portnoy, *The Copyrightability of Perfumes: I Smell a Symphony*, INTELLECTUAL PROPERTY 8, Apr. 2010, https://www.bakerlaw.com/files/Uploads/Documents/News/Articles/INTELLECTUAL%20PROPERTY/Einhorn_&_Portnoy_IP_Today_4-1-10.pdf [<https://perma.cc/34X9-EH9P>] (quoting Hoge raad der nederlanden [HR] [Supreme Court of the Netherlands], June 16, 2006, NJ 585 (Neth.)).

²³⁸ McCartney interview, *supra* note 12; Charra interview, *supra* note 93.

²³⁹ Alex Boese, *The Ingredients of Chanel No. 5*, WEIRD UNIVERSE, Jan. 28, 2017, https://www.weirduniverse.net/blog/comments/ingredients_chanel_no_5 [<https://perma.cc/RLQ7-FWME>] (quoting *Bye Line by Jensen: Skunks with a \$35 Smell*, THE PROVO DAILY HERALD, July 16, 1972).

²⁴⁰ *Id.* Fact check: the liquid is decidedly not sweat—it is the secretion from perineal glands from both sexes of civet cat. R.M. Randall, *Perineal Gland Marking by Free-Ranging African Civets, Civettictis Civetta*, 60 J. MAMMALOGY 622, 623–25 (1979).

²⁴¹ Boese, *supra* note 239.

²⁴² *Id.*

²⁴³ *Id.* Fact check: Chinese were not the first perfumers to pioneer using civet; that distinction belongs to Arabic perfumers from the 10th century. *Civet*, THE PERFUME SOC’Y (2023) <https://perfumesociety.org/ingredients-post/civet> [<https://perma.cc/7F3E-EHNB>].

decades of protest regarding Chanel's use of the civet cats' secretion, also called civet.²⁴⁴

During our interview, McCartney shared a spritz of vintage Chanel N° 5 from 1947, when natural animal materials were still used, and I was struck by the incredible depth and complexity of the civet.²⁴⁵ At low concentrations, the liquid produces a smoky, musky scent that lends complexity and longevity to perfumes.²⁴⁶ The unusual odor complements other scents while remaining potent as a standalone note. Several niche perfumes, including Zoologist's Civet and Meleg's Civet Cat Chypre, even celebrate civet by making it the focal note in their fragrances.²⁴⁷

But civet is a complicated smell. At higher concentrations, the odor veers away from curiously compelling into what Mandy Aftel evocatively dubs "faecal floral."²⁴⁸ That scatological scent largely comes from a chemical called civetone ((9Z)-Cycloheptadec-9-en-1-one), initially isolated by chemist Erwin Sack in 1915.²⁴⁹ Civet's distinctive smell also comes from smaller amounts of indole (2,3-benzopyrrole) and skatole (3-methylindole).²⁵⁰ Indole is a prominent feature of orchids, jasmine, and decaying corpses; skatole is found in mammals' feces.²⁵¹ Given these components of civet's chemical composition, it is unsurprising that the unadulterated odor is unabashedly funky.²⁵²

²⁴⁴ *A Boycott of Chanel N° 5 Urged by Humane Groups*, N.Y. TIMES (Apr. 15, 1973), <https://www.nytimes.com/1973/04/15/archives/a-boycott-of-chanel-no-5-urged-by-humane-groups.html> [<https://perma.cc/M3VL-DQGB>]; *Is the Secret Behind Chanel N° 5's Success . . . Cat Pee?*, TORONTO STANDARD (July 3, 2012), <https://www.torontostandard.com/daily-cable-news/is-the-secret-behind-chanel-no-5s-success-cat-pee> [<https://perma.cc/RMJ6-6FNY>]. Fact check: civet is not cat pee.

²⁴⁵ And its disturbing origin.

²⁴⁶ MANDY AFTEL, *ESSENCE AND ALCHEMY: A BOOK OF PERFUME* 88–89 (1st ed. 2001).

²⁴⁷ *Zoologist Civet Deluxe Bottle*, ZOOLOGIST (2023), <https://www.zoologistperfumes.com/products/civet> [<https://perma.cc/4QF3-XG7V>]; *Civet Cat Chypre 50ML*, MELEG (2023), <https://melegperfumes.com/products/celebrate-life-bottle-civet-cat-chypre-50ml> [<https://perma.cc/B4RN-WUZF>]. My own husband insisted on using a robust amount of civet during a perfume-making workshop in Grasse.

²⁴⁸ Mark C. O'Flaherty, *Musk-Have Scent: The Kinky Allure of Civet*, FIN. TIMES (Sept. 22, 2022), <https://www.ft.com/content/99a13235-cdb9-431b-b8f1-e52ce4a10486> [<https://perma.cc/Y4HN-8HGA>]. According to some perfumers, the "faecal" part of "faecal floral" is part of the point. *Id.* "Our attraction to [civet] can be explained by something quite obvious," reveals niche perfumer Roja Dove, "[i]t smells of the anus. So, when we get a whiff of it, our brain knows what's nearby. It's a trigger." *Id.*

²⁴⁹ *Civetone*, 18 THE PERFUMERY AND ESSENTIAL OIL RECORD 156 (1927).

²⁵⁰ Danute Pajaujis Anonis, *Civet and Civet Compounds*, 22 PERFUMER & FLAVORIST 43, 44 (Jan./Feb. 1997), <https://img.perfumerflavorist.com/files/base/allured/all/document/2016/02/pf.9703.pdf> [<https://perma.cc/6HH5-APBN>]; BURR, *supra* note 77.

²⁵¹ Anonis, *supra* note 250, at 45.

²⁵² Fragrances using civet remain alluring to civet cats. Fun fact: Calvin Klein's *Obsession For Men*, which contains significant proportions of civet, is used by field biologists studying the wild cats to attract them. Jason G. Goldman, *You'll Never Guess How Biologists Lure Jaguars to*

Today, civet used in perfumes is almost always synthetic—including the civet in Chanel N° 5, as of 1998.²⁵³ Novel methods for synthesizing civet are subject to patent protection, which extends to inventions or discoveries of “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.”²⁵⁴ Unlike other forms of IP, patent terms extend 20 years.²⁵⁵ However, like trademarks, prospective inventions must be filed with the U.S. Patent and Trademark Office publicly.²⁵⁶ This approach, as Lisa Larrimore Ouellette has explored, creates a “quid pro quo of the patent system: the inventor receives the exclusive patent right in exchange for fully disclosing the invention to society, rather than keeping the invention secret (such as with trade secret protection).”²⁵⁷

Camera Traps, SCIENTIFIC AMERICAN (Oct. 10, 2013), <https://blogs.scientificamerican.com/thoughtful-animal/youe28099ll-never-guess-how-biologists-lure-jaguars-to-camera-traps> [https://perma.cc/6R6J-LTUY].

²⁵³ Patrick House, *The Scent of a Cat Woman*, SLATE (July 3, 2012, 6:45 AM), <https://slate.com/technology/2012/07/chanel-no-5-a-brain-parasite-may-be-the-secret-to-the-famous-perfume.html> [https://perma.cc/5GN2-3CVF]. Synthetic notes can be just as powerful as, and possibly even more potent than, naturals without many of the ethical or allergen drawbacks. Chandler Burr, *Synthetic No. 5*, N.Y. TIMES (Aug. 27, 2006), https://www.nytimes.com/2006/08/27/style/tmagazine/t_w_1532_1697_face_perfume_.html [https://perma.cc/ZQ6Y-RRXN].

²⁵⁴ 35 U.S.C. § 101.

²⁵⁵ Gamesmanship among patent owners has effectively extended patent terms well beyond the mandated 20 years. Rebecca Robbins, *Common Patenting Tactic by Drug Companies May Be Illegal*, F.T.C. SAYS, N.Y. TIMES (Sept. 14, 2023), <https://www.nytimes.com/2023/09/14/business/ftc-drug-patents-inhalers.html> [https://perma.cc/Z8UG-2Q6A]; Tahir Amin & David Mitchell, *Big Pharma's Patent Abuses Are Fueling the Drug Pricing Crisis*, TIME (Feb. 24, 2023, 7:00 AM), <https://time.com/6257866/big-pharma-patent-abuse-drug-pricing-crisis> [https://perma.cc/6XWY-754M].

²⁵⁶ *Patent essentials*, U.S. PATENT & TRADEMARK OFF., <https://www.uspto.gov/patents/basics/essentials#questions> [https://perma.cc/LMW6-GQN9].

²⁵⁷ Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information?*, 25 HARV. J.L. & TECH. 545, 554–61 (2012). Patents often reflect biases against women and people of color. For a deeper dive into those issues, see Amy C. Madl & Lisa Larrimore Ouellette, Commentary, *Policy Experiments to Address Gender Inequality Among Innovators*, 57 HOUS. L. REV. 813, 814 (2020); Jordana Goodman, *Sy-STEM-ic Bias: An Exploration of Gender and Race Representation on University Patents*, 87 BROOK. L. REV. 853 (2022); Kara W. Swanson, *Centering Black Women Inventors: Passing and the Patent Archive*, 25 STAN. TECH. L. REV. 305 (2022); Jordana R. Goodman, *Ms. Attribution: How Authorship Credit Contributes to the Gender Gap*, YALE TECH. L.J. (forthcoming 2023); Nina Srejovic, *Computer Software Patents and Gendered Views of Programming as Drudgery and Innovation*, in FEMINIST CYBERLAW (Meg Leta Jones & Amanda Levendowski, eds. U. Cal. P. forthcoming 2024). For a discussion of biases against women and people of color within the Patent Bar, which disproportionately excludes marginalized lawyers, see Elaine Spector and LaTia Brand, *Diversity in Patent Law: A Data Analysis of Diversity in the Patent Practice by Technology Background and Region*, 13 LANDSLIDE 1 (2020), https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2020-21/september-october/diversity-patent-law-data-analysis-diversity-patent-practice-technology-background-region [https://web.archive.org/web/20200924163330/https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2020-21/september-october/diversity-

Public patent disclosures are how we know that, since 1955, there have been multiple American patents covering processes for synthesizing the key scent-creating chemical in civet, civetone.²⁵⁸ Most have expired, enabling perfumers and composition houses to use those methods freely.²⁵⁹

One of the most recently granted patents for synthesized civetone, however, remains in effect. In 2018, composition house Takasago applied to patent its “invention relate[d] to recombinant microorganisms and methods for producing macrocyclic ketones and macrocyclic ketone precursors.”²⁶⁰ Takasago’s process to synthesize civetone is not limited to that material, however. The house’s patented process can also be used to synthesize other important ketones used in perfumery, like muscone, the chemical that gives deer musk its signature odor.²⁶¹ Synthetic musk also happens to be an important base note in Chanel N° 5.²⁶²

Such synthetics can be valuable to those that patent them. Two years prior to filing its dual civetone/muscone patent, Takasago patented a process for synthesizing a specific molecule called “1-muscone,” which was known within the industry but never marketable until Takasago figured out its efficient, novel method.²⁶³ The molecule is considered indistinguishable from natural musk, yet no deer are harmed in its making.²⁶⁴ Just a small amount of 1-muscone produces a significant olfactory impact.²⁶⁵ Ernst Beaux would almost certainly approve of its adoption by Chanel. “Henceforth, . . . it will be the responsibility of

patent-law-data-analysis-diversity-patent-practice-technology-background-region] (noting that there are more registered patent attorneys and agents named Michael than racially diverse women, who compose only 1.7 percent of registered patent attorneys and agents).

²⁵⁸ Patent Reg. No. 2790005 (preparation of civetone and its homologs); Patent Reg. No. 3070625 (process for the preparation of azelaic acid semi-ester suitable for making civetone dicarboxylic acid); Patent Reg. No. 3235601 (process to produce civetone and homologues). However, the first identifiable patent for synthesizing civetone is Swiss, dating back to 1928. CH No. 136543 (process for preparing civetone).

²⁵⁹ Patent Reg. No. 2790005; Patent Reg. No. 3070625; Patent Reg. No. 3235601.

²⁶⁰ Patent Reg. No. 20200347412.

²⁶¹ *Id.*

²⁶² Matvey Yudov, *Chanel N° 5: What Makes It What It Is?*, FRAGRANTICA (Oct. 21, 2021), <https://www.fragrantica.com/news/Chanel-5-What-Makes-It-What-It-Is-15705.html> [<https://perma.cc/GU89-6MW5>].

²⁶³ Patent Reg. No. 20160376523; Chandler Burr, *Ahh, the Seductive Fragrance of Molecules Under Patent*, N.Y. TIMES (Feb. 23, 2008), <https://www.nytimes.com/2008/02/23/business/worldbusiness/23perfume.html> [<https://perma.cc/T879-WDZ2>].

²⁶⁴ Some species of musk deer are endangered because they were hunted nearly to extinction for their scent glands. Paras Bikram Singh, Janak Raj Khatiwada, Pradip Saud & Zhigang Jiang, *mtDNA Analysis Confirms the Endangered Kashmir Musk Deer Extends Its Range to Nepal*, SCIENTIFIC REPORTS (Mar. 20, 2019), <https://www.nature.com/articles/s41598-019-41167-4> [<https://perma.cc/Z3E9-3LYJ>].

²⁶⁵ Burr, *Ahh, the Seductive Fragrance*, *supra* note 263.

research chemists to discover new molecules to permit original notes to see the light of day,” he proclaimed, “[t]he future of perfume lies in the hands of Science.”²⁶⁶

Patents present a complicated approach to shielding perfume-related processes from public appropriation. While the Patent Office dedicates entire categories of inventions to “essential oils” and “perfumes,” perfumers rarely avail themselves of those paths to protection.²⁶⁷ As Cronin explained, “the trade-off between patent’s twenty-year term of monopolistic control and full disclosure of the patented invention [is unpalatable to the fragrance industry]. This is not only because the market for many of the industry’s high-end products lasts more than twenty years, but also because longevity in the marketplace of some of these products actually makes them *more* valuable over time.”²⁶⁸ Alex Charra and Michael Nostrand, as well as perfume writer Chandler Burr, note that perfumers dub this phenomenon “captivity,” which gives rise to so-called “captive molecules.”²⁶⁹ Considering that iconic fragrances can have significant staying power—Chanel N° 5 has been a perennial best-selling perfume for more than a century—patent protection can feel more like a problem than a powerhouse option.²⁷⁰

Composition houses, like Takasago, are in a different situation. Unlike perfumeries, the business of composition houses is not solely centered on producing completed perfumes. Composition houses also sell raw ingredients, and they sell lots of those.²⁷¹ By investing millions of dollars into developing new captives—which Nordstrand describes as “a layer on top of patent”—composition houses can recoup their investments both by selling captives directly to perfumers and selling captives to competitors midway through their patent terms, options that

²⁶⁶ ELISABETH BARILLÉ & CATHERINE LAROZE, *THE BOOK OF PERFUME* 51 (Tamara Blondel trans., 1995); Cronin, *Genius in a Bottle*, *supra* note 110, at 434.

²⁶⁷ Raustiala & Sprigman, *supra* note 9, at 1772–73. Fun fact: one of the first patented perfumes was Roger & Gallet Vera Violetta, which combined synthetic ionones (discovered by chemists Ferdinand Tiemann and Paul Krüger of Haarmann & Reimer) with natural violet essence from the late 19th century. *THE BIG BOOK OF PERFUME FOR AN OLFACTORY CULTURE* 65 (Jeanne Doré ed., 2020).

²⁶⁸ Cronin, *Lost and Found*, *supra* note 10, at 274.

²⁶⁹ Interview with Alex Charra (July 21, 2023); Interview with Michael Nostrand (Aug. 14, 2023); Chandler Burr, *Ahh the Seductive Fragrance of Molecules Under Patent*, N.Y. TIMES (Feb. 23, 2008), <https://www.nytimes.com/2008/02/23/business/worldbusiness/23perfume.html>.

²⁷⁰ Marin Krstic, *Chanel No 5 Review (2023): World’s Most Famous Perfume*, SCENT GRAIL (Mar. 15, 2023), <https://scentgrail.com/holy-grail-scents/chanel-no-5-review/> [https://perma.cc/W7LN-6NWE].

²⁷¹ Burr, *Ahh, the Seductive Fragrance*, *supra* note 263.

are generally unavailable to perfumers.²⁷² But captives can price aspiring perfumemakers, including independent ones, right out of the equation. Jonathan Warr, who works in research and development at Takasago, explained that l-muscione is very much “a luxury material . . . costing high four figures per pound.”²⁷³ Most aspiring perfumemakers do not want or need commercial quantities of captives, and prices by the pound (or more) will far exceed their purchase power.²⁷⁴

b. Formulas as Trade Secrets

Ernst Beaux authored it when he created Chanel N° 5. Several years later, Pierre Wertheimer and his brother, Paul, learned it when they established Parfums Chanel alongside Coco herself.²⁷⁵ Henri Robert must have used it when he became Chanel’s in-house nose.²⁷⁶ And Jacques Polge, Chanel’s third nose, sampled it to create a lighter version in the 1980s.²⁷⁷ “It” being the original formula for Chanel N° 5. While a handful of stewards of the Chanel N° 5 formula are known, it’s a mystery how many other people have known or currently know it.

Knowing notes can be crucial to perfume purchasers’ decision-making, some aspects of N° 5’s composition are no secret.²⁷⁸ The fragrance’s funky animalistic notes, such as civet and musk, are famous.²⁷⁹ Chanel highlights aldehydes, rose, jasmine, citrus, and bourbon vanilla in their Chanel N° 5 marketing materials.²⁸⁰ Perfume enthusiasts routinely crowd-source the remainder of the scent’s composition by combining their noses with bits of publicly available information:

Top Notes: *Aldehydes*, ylang-ylang, *neroli*, bergamot, lemon

Heart Notes: iris, *jasmine*, *rose*, orris root, lily-of-the-valley

²⁷² *Id.*; Nordstrand interview, *supra* note 127.

²⁷³ Burr, *Ahh, the Seductive Fragrance*, *supra* note 263.

²⁷⁴ Nordstrand interview, *supra* note 127.

²⁷⁵ MAZZEO, *supra* note 90, at 93.

²⁷⁶ *Chief Perfumer Henri Robert*, FRAGRANTICA, https://www.fragrantica.com/noses/Henri_Robert.html [<https://perma.cc/9UET-HVES>]. Robert was raised in Grasse by his father, a Chief Perfumer. Before joining Chanel, Robert was the Chief Perfumer at Coty. TK. *Id.*

²⁷⁷ Erin Dixon, *A Portrait of Chanel N° 5*, DEPARTURES, <https://www.departures.com/wellness/chanel-no-5-olivier-polge-grasse-france> [<https://perma.cc/3LVE-GJYL>]. Polge grew up outside Grasse and trained as an apprentice there; his son, who also trained in Grasse, succeeded him as Chanel’s in-house nose. *Id.*

²⁷⁸ The lack of secrecy can even extend to sourcing. It has long been public knowledge that Chanel purchases and processes the last remaining jasmine harvest from Grasse, courtesy of its longtime relationship with the Mul family, who owns the fields. *Id.*

²⁷⁹ Boese, *supra* note 239.

²⁸⁰ *N° 5 Eau de Parfum Spray*, *supra* note 125.

Base Notes: *civet, musk, amber, sandalwood, vanilla, moss, vetiver, patchouli.*²⁸¹

However, notes are not a formula. The Chanel N° 5 formula includes the proportions and often sources of these notes, not just their identities. Those details remain a secret.

Cronin explained that “[t]he modern fragrance industry has a longstanding reputation for exceptional secrecy,” a tradition that dates to the early perfumery industry in France.²⁸² In contemporary perfumery, that secrecy takes the form in intellectual property. Perfume formulas can be shielded as trade secrets, not unlike Carthusian monks’ formula for their Chartreuse liquor.²⁸³ Trade secret law protects confidential information from (mis)appropriation.²⁸⁴ During the nineteenth century, trade secret protection developed at common law to promote, as the Supreme Court put it, “[t]he maintenance of standards of commercial ethics and the encouragement of invention.”²⁸⁵ Unlike most other forms of intellectual property law, trade secret law was long governed by state law, and nearly every state, district, and territory adopted some variation of the Uniform Trade Secrets Act (UTSA), a model law drafted by the Uniform Law Commission to help states standardize trade secret law.²⁸⁶

²⁸¹ *Chanel No 5 Parfum Chanel*, FRAGRANTICA, <https://www.fragrantica.com/perfume/Chanel/Chanel-No-5-Parfum-28711.html> [<https://perma.cc/349X-ESYV>]. Notes confirmed by Chanel or identified by other cited sources are italicized.

²⁸² Cronin, *Lost and Found*, *supra* note 10, at 267.

²⁸³ Fun fact: one of the earliest trademark cases in the United States involved a trademark dispute over the trademark for Chartreuse liquor, known for its bright green or yellow coloring and bitterly herbaceous flavor, which was challenged by the monks who fled to Spain against interlopers who overtook liquor distilling and exporting operations in the Chartreuse region of France. *Baglin v. Cusenier*, 221 U.S. 580, 586-589 (1911). The interlopers’ product was found infringing, and the monks prevailed. *Id.* at 599. Today, the full formula for Chartreuse is known by only two monks at a time, making it one of the longest lasting trade secrets in history. Marion Renault, *An Elixir From the French Alps, Frozen in Time*, N.Y. TIMES (Dec. 17, 2020), <https://www.nytimes.com/2020/12/17/business/chartreuse-monks-coronavirus.html> [<https://perma.cc/4REE-VH5A>]. The monks recently announced that they would be pulling back production of both green and yellow Chartreuse “to focus on their primary goal: protect their monastic life and devote their time to solitude and prayer.” Jason Wilson, *Where Has All the Chartreuse Gone?*, EVERYDAY DRINKING (Feb. 24, 2023), <https://www.everydaydrinking.com/p/where-has-all-the-chartreuse-gone> [<https://perma.cc/T5SN-XC9C>].

²⁸⁴ For a deeper dive into trade secret law, see Sharon K. Sandeen, *The Evolution of Trade Secret Law and Why Courts Commit Error When They Do Not Follow the Uniform Trade Secrets Act*, 33 HAMLINE L. REV. 493, 521–23 (2010).

²⁸⁵ *Keweenaw Oil Co. v. Bicon Corp.*, 416 U.S. 470, 481 (1974); Jeanne C. Fromer, *Machines as the New Oompa-Loompas: Trade Secrecy, the Cloud, Machine Learning, and Automation*, 94 N.Y.U. L. REV. 706, 709 (2019).

²⁸⁶ *Trade Secrets Act*, UNIF. L. COMM’N, <https://www.uniformlaws.org/committees/community-home?CommunityKey=3a2538fb-e030-4e2d-a9e2-90373dc05792> [<https://perma.cc/55VW-PBS3>]. New York is the lone outlier. *Id.* The right of publicity, sometimes classified as a

Widespread adoption of the UTSA, as Sharon Sandeen has documented, served to streamline complex common law.²⁸⁷

Then, in 2016, Congress enacted the Defend Trade Secrets Act (DTSA), which borrowed language from the Uniform Trade Secrets Act to create the first federal civil trade secret law.²⁸⁸ DTSA protections extend to information, including “formulas” that “derive[] independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other person who can obtain economic value from its disclosure or use” when the information is “the subject of efforts that are reasonable under the circumstances to maintain its secrecy.”²⁸⁹ Like trademark rights, well-maintained trade secrets can last indefinitely, which has led scholars like Michael Abramowicz and John Duffy to theorize that trade secrecy can, theoretically, offer “even more powerful incentives than patents.”²⁹⁰

If that was once true in the fragrance industry, it is no longer. A decade ago, the International Fragrance Association (IFRA), a leading global representative of the fragrance industry, released a report characterizing trade secrets in perfumery as “valuable yet vulnerable.”²⁹¹ Those vulnerabilities persist, courtesy of technological creations of and calls for transparency in fragrance formulas.

Regulators, consumers, and activists have long demanded greater transparency in perfumery, albeit for very different purposes. In 2004, the European Union began requiring that perfumes sold in Europe be labeled with potential allergens.²⁹² Nearly two decades later, California enacted the Cosmetic Fragrance and Flavor Ingredient Right to Know Act, which requires makers to list every fragrance and ingredient on one of the lists identified in the Act²⁹³ Retailers and activists have responded to these and other calls for transparency by asking perfumers to release all their ingredients for a range of reasons, which includes promoting “clean beauty,” protecting the environment through sustainable practices, and

form of IP, is likewise governed by state law. TK. For a deeper dive into the right of publicity, see JENNIFER E. ROTHMAN, *THE RIGHT OF PUBLICITY: PRIVACY REIMAGINED FOR A PUBLIC WORLD* (2018).

²⁸⁷ Sandeen, *supra* note 284, at 520.

²⁸⁸ 18 U.S.C. § 1836.

²⁸⁹ 18 U.S.C. § 1839(3). The language draws heavily from the UTSA. Unif. Trade Secrets Act § 1(4), UNIF. L. COMM’N (1985).

²⁹⁰ Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1622 (2011).

²⁹¹ See VALUABLE YET VULNERABLE: TRADE SECRETS IN THE FRAGRANCE INDUSTRY, INT’L FRAGRANCE ASS’N (2013).

²⁹² Council Directive 2003/15, 2003 O.J. (L66) (EC).

²⁹³ S.B. 312 (Cal. 2020).

precluding carcinogenic ingredients.²⁹⁴ If all these demands were taken at face value, perfumers might be required to release their full formulas.

As De Laire experienced in its copyright infringement lawsuit, and IFRA noted in its report, however, disclosing formulas can inadvertently position former collaborators to compete at lower prices at later times by appropriating proprietary formulas.²⁹⁵ Chanel seems to credit at least some of those concerns, as the luxury house still provides limited information about the ingredients, let alone formula, of Chanel N° 5.²⁹⁶

But some perfumers are embracing transparency, at least in certain circumstances. In September 2021, licensee L'Oréal, the largest cosmetics company in the world, launched a “transparency initiative” for its luxury brand Yves Saint Laurent, which happens to make one of the most popular perfumes: Black Opium.²⁹⁷ L'Oréal committed to providing publicly “95% [of ingredients] by weight of the ingredients present in the pure fragrance” yet “[m]inority substances only represent 5% by weight. They allow the perfumers’ know-show to remain a secret, as they are exclusive materials that make the character of the composition unique.”²⁹⁸ The licensee was joined by leading composition houses International Flavors & Fragrances (IFF) and Firmenich in their collective efforts “to be more transparent about the composition of our fragrances in response to growing demand from consumers, NGOs and retailers for better information about product composition.”²⁹⁹

In practice, L'Oréal's initiative requires rooting around the Yves Saint Laurent website to uncover a tab that provides consumers (and competitors) with Black Opium's predominant notes, which are

²⁹⁴ *Radical Fragrance Transparency*, CREDO BEAUTY (2023), <https://credobeaauty.com/collections/radical-fragrance-transparency/fragrance-gifts> [https://perma.cc/A4M7-D99Y] (highlighting products that fully disclose perfume ingredients, not just “fragrance”); Isabella Kwai, *To Some Fragrance Brands, Sustainability is the Top Note*, N.Y. TIMES, Dec. 4, 2022 (profiling niche perfumeries that disclose ingredients and develop packaging consistent with longtime sustainability); Janet Nudelman, *It's a Fragrance Ingredient Transparency Race to the Top*, BREAST CANCER PREVENTION PARTNERS (Sept. 18, 2018), <https://www.bcpp.org/its-a-fragrance-ingredient-transparency-race-to-the-top/> [https://perma.cc/39PC-XGZN] (detailing why labels using only “fragrance” can obfuscate dangerous ingredients from the public).

²⁹⁵ *Rochas v. de Laire*, Cour d'appel Paris, 4th ch., 3 July 1975, *Gaz. Pal.*, 21–22 (1976); INT'L FRAGRANCE ASS'N, *supra* note 291, at 7–8.

²⁹⁶ N° 5, CHANEL, [https://www.chanel.com/us/fragrance/p/120150/n5-parfum/ [permalink needed].

²⁹⁷ *Our Policy of Transparency in Fragrances*, L'ORÉAL, <https://inside-our-products.loreal.com/our-approach/our-policy-transparency-fragrances> [https://perma.cc/5HRE-4B86]. The name is a real choice, discussed *infra* Section III.B.

²⁹⁸ See Nudelman, *supra* note 294; L'ORÉAL, *supra* note 297. Of course, the brand discloses allergens, as required, even if they are not “necessary” to the transparency initiative. *Id.*

²⁹⁹ L'ORÉAL, *supra* note 297. L'Oréal is also the licensee for indie-presenting Maison Margiela. *Maison Margiela Fragrances*, L'ORÉAL GROUPE, <https://www.loreal.com/en/loreal-luxe/maison-margiela-fragrances/> [https://perma.cc/B9QY-59PE].

identified by chemical composition, plain-language description, and classified by fragrance family.³⁰⁰ Despite these transparent disclosures, Yves Saint Laurent continues to sell upwards of 887 bottles of Black Opium each day.³⁰¹

Engaging in transparency like Yves Saint Laurent does not protect perfumes' formulas from so-called "dupes," short for duplicates, a market unique to the fragrance industry.³⁰² Neither knockoffs nor counterfeits, dupes are often nearly identical chemical copies of popular perfumes sold by third-party corporations.³⁰³ Dossier is one of the leading makers of dupes—its close recreations of luxury fragrances sell for a fraction of the authentic perfume's price.³⁰⁴ Its 1.6 ounce bottle of Floral Aldehydes which Dossier markets as being "inspired by Chanel N°5," costs just \$29—a single ounce flask of Chanel N°5 is nearly fourteen times more, costing \$355.³⁰⁵ Dossier's methods remain something of a mystery, but companies and competitors can easily create dupes using technological reverse engineering.

As in some other areas of IP, like copyright, reverse engineering is a legal way to recreate works or know-how without engaging in infringement or misappropriation.³⁰⁶ Expert noses can reverse engineer complex scents, like N°5, by smell alone; doing so was often part of their training.³⁰⁷ Without comprehensive formulas to follow, however,

³⁰⁰ *Black Opium Eau De Parfum*, YVES SAINT LAURENT, <https://www.yslbeauty.com/int/fragrance/fragrance-for-her/black-opium/black-opium-eau-de-parfum/WW-40701YSL.html#tab=musk-like> [<https://perma.cc/SZ9A-MEDT>]. While Taskago's 1-muscone captive is not on the menu, Black Opium contains at least four "musk like" notes, including oxacyclohexadecen-2-one (a soft woody, powdery musk) and 3-methylcyclopentadecenone (an elegant, soft musk with "animalic inflection"). *Id.*

³⁰¹ Blake Newby, *The Story Behind YSL Black Opium—& Why it Sells 887 Bottles Each Day*, THE ZOE REPORT (Oct. 28, 2020), <https://www.thezoereport.com/p/ysl-black-opium-sells-887-bottles-per-day-heres-why-everyones-so-hooked-39125645> [<https://perma.cc/UCN6-PRDK>].

³⁰² Emily Jensen, *Inside the Complex World of Fragrance Dupes*, ALLURE (Mar. 1, 2023), <https://www.allure.com/story/inside-the-complex-world-of-fragrance-dupes> [<https://perma.cc/GG3K-FSFY>].

³⁰³ *Id.*

³⁰⁴ Erin Jahns, *I Tested Dossier's Under-\$55 Dupes for Le Labo, Chanel, and More—These Impressed*, WHO WHAT WEAR: FRAGRANCE (Mar. 18, 2023), <https://www.whowhatwear.com/dossier-perfumes> [<https://perma.cc/T2NZ-WTCK>].

³⁰⁵ *N° 5*, CHANEL (2023), <https://www.chanel.com/us/fragrance/p/120150/n5-parfum>; *Floral Aldehydes*, DOSSIER, <https://dossier.co/products/floral-aldehydes> [<https://perma.cc/KPK9-JVZS>]; *N°5*, CHANEL, <https://www.chanel.com/us/fragrance/p/120150/n5-parfum> [<https://perma.cc/MXU2-SWUZ>]. Dupes can reference their olfactory inspirations directly due to the trademark doctrine of descriptive use, which allows the invocation of a mark to reference that mark's goods or services. 15 U.S.C. § 1115(b)(4) (2002).

³⁰⁶ *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 490–91 (1974) (recognizing that trade secret protection does not prevent independent creation or reverse engineering).

³⁰⁷ BURR, *supra* note 77, at 3–4.

aspiring perfume makers are unlikely to do the same using a sense they are still refining.

Dupe companies are unlikely to rely on noses, literally or metaphorically, to recreate fragrances. To reverse engineer perfumes, companies can deploy a duo of technologies, known as gas chromatograph/mass spectrometers (GC/MS).³⁰⁸ GC/MS machines use analytical systems to convert liquid fragrance samples into chemical components, which are separated based on each molecular weight—the same metric used to classify top, heart, and base notes.³⁰⁹ The effect of GC/MS reverse engineering is artistic, practical—and financial. Cronin detailed how these technologies offer perfumery clients, like mainstream perfumeries and luxury houses,

a new means for negotiating lower prices for the development of new fragrances, as well as those for ongoing supplies of already commissioned products. If a fragrance house balks at the price negotiated by a client for ongoing supplies of a product that it developed for the client, the client could reverse engineer the fragrance, and then buy supplies of it at a lower price from a competitor of the initial supplier. The competitor would have legitimately obtained the formula without incurring the cost of creating it.³¹⁰

Technological reverse engineering is the purview of competitors, particularly composition houses. As soon as new perfumes are released, samples are fed into corporate GC/MS machines, which can cost at least \$30,000, for analysis.³¹¹ That cost all but ensures that the technologies are only used by commercial perfumers. Aspiring perfumers cannot

³⁰⁸ Olivia Su, Note, *Odor in the Courts! Extending Copyright Protection to Perfume May Not Be So Nonscentical: An Investigation of the Legal Bulwarks Available for Fine Fragrances and Advancing Reverse Engineering Technology*, 23 S. CAL. INTERDISC. L.J. 633, 674–75 (2014); Cronin, *Lost and Found*, *supra* note 10, at 270–73. Fun fact: law enforcement requested fragrance formulas from perfume houses so they could be compared using GC/MS machines to identify suspects' perfume and cologne; the houses declined to participate. McCartney interview, *supra* note 12.

³⁰⁹ Andrew Tipler & Sheila Eletto, *Application Note: Gas Chromatography/Mass Spectrometry*, PERKINELMER (2013), https://resources.perkinelmer.com/corporate/cmsresources/images/44-155954app_011482_01_characterizationofperfumefragrances.pdf [https://perma.cc/D87Q-K4AB]. The charming industry phrase for this process is “shoot[ing] the juice.” BURR, *supra* note 77, at 128.

³¹⁰ Cronin, *Lost and Found*, *supra* note 10, at 271–72.

³¹¹ *Id.* at 128 (“Everyone in the industry knows that the first twenty bottles of IFF’s perfumes are bought by IFF’s competitors, who take them back to the labs where the techs ‘shoot’ the juice . . . the machines crunch it, the techs eyeball the molecules, fill in the gaps with a little wizardry, do a polish, and send the formula directly to the hard drives of the executives.”); *Agilent 7890/5975C/7693 GC/MS System*, LABX (2023), <https://www.labx.com/item/agilent-7890-5975-c-7693-gc-ms-system/4343601> [https://perma.cc/7TGM-KCE9].

afford purchasing GC/MS machines to reverse engineer scents to sample—they even struggle to purchase raw ingredients.³¹² Further, Nordstrand noted that “it’s a job in its own entirety to learn how to interpret a GCMs correctly. And it’s never 100% accurate,” further limiting its usability by aspiring perfumers.³¹³

Some noses resist GC/MS machines by loading their perfumes with inert natural ingredients that complicate the formula.³¹⁴ One molecular distillation of rose, the May rose varietal of which is central to Chanel N° 5, contains more than eighty molecules; different species’ distillations could consist of up to a thousand molecules.³¹⁵ Such efforts offer only delays, however, not deterrence. The prominence of dupes is proof, even as some perfumers believe that dupes’ pervasiveness stunts perfumery. As Yosh Han explained, “[i]f the resources spent on development and marketing were applied towards supporting original designs and educating consumers, the fragrance industry would evolve. Dupes are the equivalent of fast fashion.”³¹⁶

Transparency, both in the form of disclosing a perfume’s formula and reverse engineering it, can be understood as an existential threat to trade secrecy in perfumes. Yet, trade secrets—and practical barriers—persist. Truly replicating Chanel No. 5 scent simply cannot be done without traveling back in time to acquire some of the last jasmine fields in Grasse, which are essential to its scent.³¹⁷ While Dossier offers an inexpensive dupe of Chanel N° 5, euphemistically called Floral Aldehydes, the original retains its allure: in the minute it took to read the preceding paragraph, Chanel sold two more bottles of N° 5.³¹⁸ While regulations, activism, and reverse engineering increasingly mean that trade secrets cannot deter competitors, trade secrecy retains a powerful value: it effectively ensures that aspiring perfume makers have limited access to formulas that they are free to make and sample.

³¹² Denton-Hurst, *supra* note 18. Dawn Marie West began her fragrance career making candles because the materials were cheaper. *Id.*

³¹³ Nordstrand interview, *supra* note 127.

³¹⁴ Some perfumers do not even share formulas with clients. *Id.*

³¹⁵ Lauren Collins, *Fragrant Harvest*, NEW YORKER (Mar. 19, 2018), <https://www.newyorker.com/magazine/2018/03/19/fragrant-harvest> [https://perma.cc/RE6F-PSUY]; BURR, *supra* note 77, at 263. Like Chanel’s jasmine, its May rose is supplied exclusively by the Mul family in Grasse. Collins, *supra*, note 315.

³¹⁶ Jensen, *supra* note 302.

³¹⁷ Catherine Helbig, *Review of Chanel N° 5: Is It Worth the Hype?*, BYRDIE (Sep. 16, 2022, 4:33 PM), <https://www.byrdie.com/chanel-no-5-review-of-chanel-no-5-perfume-346120> [https://perma.cc/GY5P-ZTSQ].

³¹⁸

B. *Exposing Industry Inequities*

Alongside IP, industry practices determine who can make perfumes and under what circumstances. At nearly the same time as Chanel N° 5's introduction, an equally compelling scent swept through Paris. Its citrusy hint of bergamot is easy to imagine gracing the wrists of flappers.³¹⁹ The fragrance fades to rich florals, such as jasmine, iris, and rose, surrounded by curls of vanilla that could fill jazz halls.³²⁰ It settles into a warm, resinous amber that would not feel out of place at a Cubist salon.³²¹ Jacques Guerlain was inspired by the profound passion between Shah Jahan and his wife, Mumtaz Mahal.³²² Guerlain named the fragrance Shalimar after the Shalimar gardens that Shah Jahan built to impress his wife.³²³ Like the gardens themselves, Shalimar has staying power. Its scent clings to coats and collars for hours, and it joins Chanel N° 5 as one of the best-selling perfumes in history.³²⁴

While Guerlain's Shalimar aims to celebrate people of color, those people are rarely represented in Western perfumery.³²⁵ "People who look like me are hardly ever a part of that world," reflects Gwen Gonzalez, one of the few Black perfumers at a leading composition house.³²⁶ "The traditions of perfumery are so tightly bound to Old World ideas of what a perfumer is that sometimes this breeds unconscious bias," Gonzalez

³¹⁹ This effect is called a "white-out." Thomas, *The Legend of Shalimar*, ESCENTIAL (Oct. 10, 2016, 10:53 AM), <https://www.escentual.com/blog/2016/10/10/the-legend-of-shalimar> [<https://perma.cc/A7GH-RJTW>].

³²⁰ *Shalimar, An Ode to Sensuality*, GUERLAIN (2023), <https://www.guerlain.com/us/en-us/p/shalimar-eau-de-parfum-P011355.html> [<https://perma.cc/673N-BUCP>].

³²¹ Guerlain, *The Story of Shalimar*, YOUTUBE (Sept. 17, 2023), <https://www.youtube.com/watch?v=2XnK5RezGH0> [<https://perma.cc/TKK9-JWKY>].

³²² *Id.* Her name sounds familiar because Shah Jahan built the monumental Taj Mahal in her memory. See generally DIANA PRESTON & MICHAEL PRESTON, *TAJ MAHAL: PASSION AND GENIUS AT THE HEART OF THE MOGHUL EMPIRE* (2009).

³²³ While Shalimar launched in 1925, Guerlain developed the fragrance in 1921—production was held up over a competing perfumer's trademark dispute. *Shalimar de Guerlain: Discover This Vintage Fragrance*, VINTAGE INDUSTRIAL STYLE (Apr. 19, 2017), <http://www.vintageindustrialstyle.com/shalimar-guerlain-discover-vintage-fragrance> [<https://perma.cc/KCJ8-NB62>].

³²⁴ Guénola Pellen, *Iconic: Shalimar, the Perfume of the Roaring Twenties*, FRANCE-AMÉRIQUE (Jan. 12, 2017), <https://france-amerique.com/iconic-shalimar-the-perfume-of-the-roaring-twenties> [<https://perma.cc/2P32-ERWY>]. Guerlain sells roughly 108 bottles a minute, lagging significantly behind Chanel N° 5 sales. *Id.*

³²⁵ Matlin, *supra* note 17; McCartney interview, *supra* note 12 ("The industry worldwide really is amazingly diverse, given that there are a lot of Arabic perfumers or a lot of Indian perfumers in countries, whether it's traditions of perfumery, but where the West has pretty much taken over . . . ninety-five percent of all perfumes in the world are made by five companies.").

³²⁶ Mazzone, *supra* note 17. She works at Givaudan. *Id.*

concludes.³²⁷ This bias is embodied by a Western mainstream industry that remains dominated by “white people, mostly men, sometimes women. And at the highest level, it’s like with any classical art form . . . as non-diverse as you can possibly imagine.”³²⁸ Guerlain himself personifies the stereotype of a perfumer as a white, male nose who formally trained in France.³²⁹ Confronted with biases about what perfumers “should” look like, many marginalized perfumers make the same choice as Dawn Marie West: teach themselves perfumemaking and pursue niche perfumery.

Those few marginalized perfumers who do find positions in mainstream perfumery often see their contributions rendered invisible. The names of noses are rarely credited prominently or publicly.³³⁰ When it comes to marketing flagship fragrances, advertisements tend to focus on celebrities, not noses. The commercial “faces” of fragrances are rarely people of color, further minimizing the visibility of marginalized people in the industry.³³¹ Both forms of erasure ensure that marginalized perfumers do not see mainstream role models who look like them.

Problems are not only present with visual aspects of perfumery—it extends to terminology as well, which alternately renders marginalized people and non-Western places hypervisible. Guerlain proudly pioneered using a slur to describe Shalimar: “Oriental.”³³² The label quickly metastasized to become an entire fragrance family, which remains in widespread use today.³³³ While individual perfumers and advocacy organizations are resisting and retiring the term, marginalized perfumers must navigate the word’s ubiquity.

³²⁷ *Id.*

³²⁸ Rosin interview, *supra* note 23. Rosin noted that the entry-level and lower ranks of the mainstream industry are markedly more diverse, particularly among Asian perfumers. *Id.*

³²⁹ Sylvaine Delacourte, *Jacques Guerlain*, SYLVAIN DELACOURTE PARIS (Nov. 17, 2017), <https://blog.sylvaine-delacourte.com/jacques-guerlain-458d4e95524a> [<https://perma.cc/8QVC-VXAJ>]. As a bonus, Guerlain was a nepo baby: his uncle founded the eponymous Guerlain perfumery, where he worked, and his brother labored alongside him designing perfume bottles. *Id.* For a definitive dive into the phrase and phenomenon that is “nepo baby,” a shorthand for people whose careers benefitted (or were born) from nepotism, see Nate Jones, *How a Nepo Baby Is Born*, VULTURE (Dec. 19, 2022), <https://www.vulture.com/article/what-is-a-nepotism-baby.html> [<https://perma.cc/E76P-3RGC>].

³³⁰ See *infra* Section II.B.

³³¹ *Id.*

³³² Guerlain, *The Story of Shalimar*, *supra* note 321.

³³³ MICHAEL EDWARDS, FRAGRANCES OF THE WORLD 2015: PARFUMS DU MONDE (Michael Edwards 2015) (uncritically identifying “Oriental” as a fragrance family). *But see* Jeb Gleason-Allured, [Update] Goodbye ‘Oriental,’ Hello ‘Ambery’, GLOBAL COSMETIC INDUSTRY (June 22, 2021), <https://www.gcimagazine.com/brands-products/fragrance-home/news/21862163/update-goodbye-oriental-hello-ambery> (announcing leading perfume writer Michael Edwards’s decision to use “ambery” instead of “Oriental” in subsequent editions of his leading tome).

The diversity crisis in perfumery garnered heightened media attention after the United States' "racial reckoning" of 2020. Journalists, including Dianna Mazzone, Alexandra Garfinkle, Danielle Jackson, and Tembe Denton-Hurst, drew attention to the marginalized perfumers who do exist and who are thriving.³³⁴ Their niche practices are remaking the industry. "With the development of marketing and the explosion of the '80s and '90s, perfume became a commodity. Now, with niche, it's back to luxury," forecasted perfume expert Michael Edwards.³³⁵ But while marginalized perfumers revolutionize the industry, often from the outside, pernicious problems persist.

With Guerlain himself and Shalimar as guides, this Section illuminates a trio of challenges preventing perfumery from being an inclusive art and technology. Part A exposes the powerful role that pedigree, both in terms of nationality and training, plays in preventing marginalized perfumers from getting a foot in the door. Part B explores the erasure of noses, particularly women and people of color, through attribution and advertising practices that render marginalized perfumers invisible to aspiring ones. And Part C examines the persistence of the fragrance family "Oriental" throughout perfumery, which encapsulates the normalization of exclusionary practices. Aspiring perfumemakers cannot continue waiting for an industry intervention to democratize perfumery—they must seek a new path themselves, and more and more perfumers are already walking it.

1. Pedigree

Credentials are central to the perfume industry. As the commercial fragrance industry blossomed in France during the 17th century, it found its center in a small town called Grasse.³³⁶ Then, tanners covered the pungent stench of their wares by priming leather with perfumed pomades.³³⁷ Over time, the tanners abandoned their trade for perfumery

³³⁴ See, e.g., Mazzone, *supra* note 17; Jackson, *supra* note 17; Matlin, *supra* note 17; Gleason-Allured, *supra* note 333; Denton-Hurst, *supra* note 18; Lauren Yan, *Stop Using the Term 'Oriental' to Sell Perfume*, MIC (Jan. 24, 2022), <https://www.mic.com/life/oriental-perfume-racist-legacy>. Garfinkle, *supra* note 17; *Reclassify "Oriental" and "Floriental" in the Fragrance Industry*, CHANGE.ORG (June 21, 2021), <https://www.change.org/p/sign-the-petition-to-reclassify-oriental-and-floriental-and-share-it-with-others> [<https://perma.cc/MZ8B-MZSB>].

³³⁵ Garfinkle, *supra* note 17.

³³⁶ Beardsley, *supra* note 21. When I visited Grasse in Spring 2023, I was somewhat surprised to discover that the town still revolves around the perfumeries that operate businesses and museums there.

³³⁷ *Id.*

because it was more profitable.³³⁸ It was then that perfumery became was a family affair, an art passed from father to son.³³⁹ Today, Grasse—and France more generally—remains a self-proclaimed powerhouse in perfumery.³⁴⁰

Grasse boasts one of the most prestigious perfume training programs in the world: the Grasse Institute for Perfumery.³⁴¹ Attending the Institute is expensive. Tuition costs \$15,000, exclusive of travel or lodging.³⁴² It is exclusive. The Institute takes only twelve students a year.³⁴³ It is also exclusionary. While the Institute claims to cultivate a “diverse student body,” over a recent five-year stretch, only one student was Black.³⁴⁴ That lack of representation deters many marginalized perfumers from pursuing formal training, which—due to the industry’s emphasis on pedigree—effectively excludes them from much of mainstream perfumery.

“When I looked into places I could study, I realized how representation for Black perfumers is virtually nonexistent,” Dawn Marie West reflected.³⁴⁵ “Classically trained perfumers are chosen by lineage, so getting into school or going abroad is really difficult.”³⁴⁶ Compared with West, Guerlain embodied an archetypal nose. He studied as an apprentice with his perfumer uncle, who founded the eponymous Guerlain perfumery, formally trained in chemistry at the University of Paris, then joined the family business alongside his brother.³⁴⁷ So insular is the industry that, within the past fifteen years, a white man like Guerlain would be described as a “diverse” perfumer because he trained in Paris rather than Grasse.³⁴⁸ As McCartney put it, the French “managed this amazing marketing job—everybody thinks that the top perfumes are French, and the perfect house in France, and you have to go to France to learn how to make [perfume]. And [the industry] is still dominated by an awful lot of white blokes.”³⁴⁹

³³⁸ *Id.*

³³⁹ Mazzone, *supra* note 17.

³⁴⁰ Perfumery is, however, becoming more global. See Perfumery Schools, BON PARFUMEUR, <https://www.bonparfumeur.com/blogs/journal/perfumery-schools>; McCartney interview, *supra* note 12; Charra interview, *supra* note 93.

³⁴¹ *Who We Are*, GRASSE INST. OF PERFUMERY (2023), <https://www.grasse-perfumery.com/who-we-are> [<https://perma.cc/Q8P7-9R4Q>].

³⁴² Denton-Hurst, *supra* note 18.

³⁴³ *Id.*

³⁴⁴ *Id.*; *Who We Are*, *supra* note 341.

³⁴⁵ Denton-Hurst, *supra* note 18.

³⁴⁶ *Id.*

³⁴⁷ Delacourte, *supra* note 329. Fun fact: Guerlain’s brother designed the iconic Shalimar bottle, which looks like an opening fan. Guerlain, *The Story of Shalimar*, *supra* note 321.

³⁴⁸ Mazzone, *supra* note 17.

³⁴⁹ McCartney interview, *supra* note 12.

Excluding marginalized perfumers from formal training has consequences for the diversity of the mainstream industry. “Access to a formal fragrance education is an impediment, since historically, fragrance houses have been family-run French businesses, and access to a fragrance education is nearly entirely overseas,” reflected Kimberly Walker, the founder of niche perfumery Kimberly New York.³⁵⁰ She, like West and other marginalized perfumers, opted out of the industry’s gatekeeping. Walker took a year to study composition and chemistry through YouTube and articles before creating her own perfume line.³⁵¹ The decision to work independently is complicated and personal, but it can enable marginalized people to bring their diverse experiences to perfumery without the industry’s baggage.

2. Erasure

When marginalized people do join mainstream composition houses or perfumeries, they can remain invisible. Unlike most arts, perfumes rarely credit noses prominently and, more often, not even publicly.³⁵² “[F]or me,” reflected Nordstrand, “authorship is a really huge deal. I mean, every other form of art, even mathematical discoveries, robotics, whatever you want to say, all of these industries, credit is given to the author of the of the work.”³⁵³ In perfumery, that erasure has a legacy. “With respect to attribution,” Cronin acknowledged, “perfumes have long been akin to literary works from the Medieval and Renaissance eras. Literary texts from these times (e.g., Beowulf) often have anonymous authors, or their authorship is ascribed to a sponsoring king, or fictional muse”—or, in case of contemporary perfumes, a brand.³⁵⁴

Unlike the celebratory treatment of Guerlain (the nose) by Guerlain (the perfume house), Santal 33’s sleek bottling, packaging, and website make no mention of Voelkl.³⁵⁵ Niche perfumeries, like Kimberly New York, are changing this practice. Its founder, Kimberly Walker, noted that she “never encountered a brand led by a Black, female perfumer” in her

³⁵⁰ Jackson, *supra* note 17. Kimberly Walker Ether combines traditional notes, like frankincense and myrrh, and brightens them with clove and fresh vetiver. *Ether*, KIMBERLY NEW YORK, <https://www.kimberlynewyork.com/product/ether> [<https://perma.cc/46QT-5EXW>].

³⁵¹ Jackson, *supra* note 17.

³⁵² *Id.*

³⁵³ Nordstrand interview, *supra* note 127.

³⁵⁴ Cronin, *Genius in a Bottle*, *supra* note 110, at 452.

³⁵⁵ *Santal 33*, *supra* note 2; *Santal 33 Le Labo*, *supra* note 59; Larkworthy, *supra* note 5.

decade-long tenure as a luxury fragrance sales manager.³⁵⁶ Her branding is an antidote to erasure, with her name emblazoned on every bottle.³⁵⁷

Even if perfumers' work was not unattributed, it is often buried behind the "faces" of fragrances. In Guerlain's short film celebrating the legacy of Shalimar, the fragrance's face is model Natalia Vodianova, who wears a vaguely Indian headdress while embracing a vaguely ethnically ambiguous man.³⁵⁸ Vodianova is a white celebrity, and most fragrance faces follow a similar pattern.³⁵⁹ Niche perfumer Shawn Crenshaw put it bluntly: "Not one brand had a face or a representation of anyone that looked like me," he explained, "It hit me like a ton of bricks that we as consumers held these designer brands in such high regard, but none of them—based on their marketing—held us equally in such high regard."³⁶⁰ Crenshaw responded by prominently featuring Black men and women in his advertising for his signature fragrance, *Ovation for Men*.³⁶¹

Perfumery practices around attribution and advertising effectively eliminate the visibility of marginalized perfumers, which affects aspiring perfume makers' abilities to identify role models in the industry. "There

³⁵⁶ Mpinja, *supra* note 19.

³⁵⁷ *Ether for Men*, KIMBERLY NEW YORK (2023), <https://www.kimberlynewyork.com/category/ether-for-men> [<https://perma.cc/7HED-HPR2>].

³⁵⁸ *Guerlain: The Story of Shalimar*, *supra* note 319.

³⁵⁹ See, e.g., Zoë Holloway, *16 New Fragrances with a Famous Face Attached*, BEAUTY DIRECTORY (Aug. 23, 2018, 12:05 PM), <https://www.beautydirectory.com.au/news/fragrance/16-new-fragrances-with-a-famous-face-attached> [<https://perma.cc/9VUM-P6RK>] (naming Saorsie Ronan for Calvin Klein Women, Poppy Delevigne for Jo Malone, Julia Roberts for Lancôme La Vie Est Belle, David and Victoria Beckham for their eponymous line, Emily Ratajkowski for Paco Rabanne, Cate Blanchett for Giorgio Armani Si Passione, Adam Levine for Yves Saint Laurent Y as Faces for fragrances). However, there are more women of color rising as fragrance faces recently. When Zoë Kravitz was made the face of Yves Saint Laurent Black Opium, she critiqued the lack of industry diversity: "When you think of classic fashion houses, you don't think of women of [color]. Especially with fragrance—which is a big deal as a lot of money is there. The fact that it has taken so long to trust a woman of [color] in this position is kind of sad, but it's also amazing that we are finally here." Victoria Diplacido, *Zoë Kravitz On Being The Face of A Fragrance As a Woman of Colour*, ELLE CANADA (Dec. 17, 2018), <https://www.ellecanada.com/beauty/fragrance/zoe-kravitz-on-being-the-face-of-a-fragrance-as-a-woman-of-colour> [<https://perma.cc/5BG5-A7ZR>]. Lupita Nyong'o for Calvin Klein Women, Misty Copeland for Estée Lauder's Modern Muse, and Ariana Grande for her own Cloud are other notable exceptions. Zoë Holloway, *16 New Fragrances with a Famous Face Attached*, BEAUTY DIRECTORY (Aug. 23, 2018), <https://www.beautydirectory.com.au/news/fragrance/16-new-fragrances-with-a-famous-face-attached> [<https://perma.cc/9VUM-P6RK>]. Fun fact: unlike many celebrity fragrances, Grande's is well-regarded among beauty insiders as a refreshing, wearable delight. Rio Viera-Newton, *All My Beauty-Industry Friends Are Obsessed With Ariana Grande's 'Cloud' Perfume*, THE STRATEGIST (Sept. 23, 2020), <https://nymag.com/strategist/article/ariana-grande-cloud-perfume-review.html> [<https://perma.cc/67ZJ-N368>].

³⁶⁰ Mpinja, *supra* note 19.

³⁶¹ Shawn Crenshaw, *Timeless*, OVATION FOR MEN (2023), <https://ovationfragrance.com> [<https://perma.cc/AQ56-XF9A>].

. . . weren't any examples of Black perfumers highlighted in the media, so Black people who were interested in becoming perfumers did not see Black mentors," explained Walker.³⁶² But not all perfumers are subject to erasure. That recent Shalimar advertising campaign centered and celebrated Guerlain's talents as a nose.³⁶³ And, of course, his family name is still emblazoned across all the house's perfumes and packaging.³⁶⁴

3. Nomenclature

Guerlain proudly pioneered using the classification "Oriental" to encapsulate Shalimar.³⁶⁵ The term stuck. Over the past century, the word became an entire fragrance family unified by their persistent amber heart note and vaguely "exotic" ingredients.³⁶⁶ It's difficult to overstate the term's ubiquity. An online search for "Oriental perfume" returns nearly fourteen million hits.³⁶⁷ Not only is the word offensive—at the urging of Congresswoman Grace Meng, President Barack Obama eliminated the word from federal laws in 2016—the moniker is meaningless.³⁶⁸ Shalimar was not designed in Asia, developed by an Asian nose or dependent on Asian ingredients. The same is true of most of Shalimar's fragrance family kin.

The fetishization underlying the term is not only inaccurate but also alienating to many perfumers. As Asian American perfumer Yosh Han observed, "No other industry, not chocolate, whiskey, coffee, tea, beer, nobody else uses this term. And the ones who are still wanting to uphold this say it just means 'East,' Well. Africa is not East, so"³⁶⁹ These fragrances' only connection to Asia and Africa is through a colonialist perspective of those continent's places and people as sensual, mystical,

³⁶² Jackson, *supra* note 17.

³⁶³ *Guerlain: The Story of Shalimar*, *supra* note 319.

³⁶⁴ *Women Fragrances*, GUERLAIN <https://www.guerlain.com/us/en-us/fragrance/woman> [<https://perma.cc/SLC2-HELK>].

³⁶⁵ *Guerlain: The Story of Shalimar*, *supra* note 319.

³⁶⁶ AFTEL, *supra* note .

³⁶⁷ The first page does include the *Harper's Bazaar* piece critiquing the term. See Matlin, *supra* note 17.

³⁶⁸ Stephany Bai, *President Obama Signs Bill Eliminating 'Oriental' From Federal Law*, CONGRESSWOMAN GRACE MENG (May 23, 2016), <https://meng.house.gov/media-center/in-the-news/president-obama-signs-bill-eliminating-oriental-from-federal-law> [<https://perma.cc/W8T4-BSWF>].

³⁶⁹ Miller, *supra* note 20. Han's Omnistar, created by Rodrigo Flores at composition house Givaudan, is a fig fragrance with tree leaves in the top note and fruit in the base note, grounded by base notes of musk, tea, hay, and cardamom. *Omnistar Eau Fraiche Parfum*, YOSH (2023), <https://www.eaudeyosh.com/new-products/omnistar-888>.

and mysterious.³⁷⁰ Han invited the public to join her and other perfumers to push back on the term publicly by co-sponsoring a petition to rename the fragrance family, which has received more than 1,000 signatures.³⁷¹

The problem with perfume nomenclature has persisted for nearly a century because of power. “[Perfume houses] use it because they believe they have the right to use it,” explained Asian American perfumer Sue Kim, “It’s an execution of privilege.”³⁷² As a freelance consultant to independent perfumers, Kim combats the term’s use by contractually requiring her clients not to use it.³⁷³ Her approach works: every client has agreed.³⁷⁴

Perfumers’ individual and collective efforts to retire the word are amplified by organizations like The Fragrance Foundation (TFF), which was founded to promote diversity, equity, and inclusion in perfumery.³⁷⁵ One of its campaigns is retiring the slur from the fragrance lexicon. As TFF founder Linda Levy put it, the industry “need[s] to find another way to speak to the concept,” and TFF pushes perfumers to adopt one.³⁷⁶ During her outreach to European perfumers, Levy was clear: “We’re moving forward, and we’re changing this word, and it’s not an option. Every single member of the Fragrance Foundation is responsible for eliminating that word. I believe we can unite the community and find a way to make it right.”³⁷⁷ To date, author and perfumer Michael Edwards, the British Society of Perfumers, and CPL Aromas, among many others, have taken steps to eliminate the word from perfumery parlance.³⁷⁸

However, Asian perfumers are not a monolith, and not all of them reject the term “Oriental.” Niche perfume store manager Steven Gontarski, who is Asian American, understands the controversy but believes “it’s more a fantasy, which is why I think [O]riental is a perfect word for it. It’s not Asian, it’s not even real . . . I don’t think [the word] needs to be locked up and thrown away forever, we should still think about the history of perfume and use that word to describe a very specific

³⁷⁰ Aatish Taseer, *The Fragrances That Changed the Field*, N.Y. TIMES (May 17, 2021), <https://www.nytimes.com/2021/05/10/t-magazine/fragrance-perfume-orientalism.html> [https://archive.ph/bEuf9] (reflecting on French perfumers’ fetishization of an imagined East).

³⁷¹ *Reclassify “Oriental” and “Floriantal”*, *supra* note 334.

³⁷² Yan, *supra* note 334.

³⁷³ *Id.*

³⁷⁴ *Id.*

³⁷⁵ *Diversity, Equity, and Inclusion*, THE FRAGRANCE FOUNDATION (Oct. 20, 2021), <https://fragrance.org/event/diversity-equity-inclusion> [https://perma.cc/673X-YVRJ].

³⁷⁶ Garfinkle, *supra* note 17.

³⁷⁷ *Id.*

³⁷⁸ *Reclassify “Oriental” and “Floriantal”*, *supra* note 334.

style.”³⁷⁹ Japanese perfumer Yasuyuki Shinohara, founder of Di Ser perfumery, uses the term because he believes it has a different connotation in Japanese perfumery. “In Japan, there are very few people who have a negative image of this word,” he explains, “We often use this word in perfumes, for example, oriental floral, oriental citrus, oriental beauty,” Shinohara explains.³⁸⁰ “This is because English does not have the best words to describe Japanese culture and art, so we use these terms when explaining them to Westerners. But in fact, we use the term ‘oriental’ to mean art and culture that is a mixture of East and West.”³⁸¹

Despite mounting critique of the word, retiring it is still resisted.³⁸² Luxury house Yves Saint Laurent continues characterizing its best-selling Opium perfume, itself a controversial naming choice, as “a spicy Oriental harmony for extreme sensuality.”³⁸³ While Guerlain itself retired the classification for Shalimar in 2021, it has not fully addressed the larger problem of exoticization: the perfumery still sells its Les Absolus d’Orient collection, which the house frames as “an invitation to transport the senses to the heart of a fascinating region, revealing some of its most precious secrets,” featuring fragrances that trade on fetishization like Encens Mythique and Bois Mystérieux.³⁸⁴

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³⁷⁹ Emily Jensen, *Does “Oriental” Still Have a Place in Perfumery?*, MISSION, <https://missionmag.org/oriental-perfume-category-trend-history> [<https://perma.cc/9CPC-CNJ6>].

³⁸⁰ *Id.*

³⁸¹ *Id.*

³⁸² In the wake of George Floyd’s murder, many companies responded to mounting public pressure and eliminated longstanding racist branding. See Sonia K. Katyal, Commentary, *Brands Behaving Badly*, 109 TRADEMARK REP. 819 (2019) (detailing corporate responses to offensive trademarks). But some industries also confronted nomenclature that was not limited to a single company, similar to widespread problems in perfumery. In computer engineering, for example, many programming languages use the racist language “master/slave” or “whitelist/blacklist,” both of which harken back to slavery, to describe core functionalities. Kate Conger, *‘Master,’ ‘Slave,’ and the Fight Over Offensive Terms in Computing*, N.Y. TIMES (Apr. 13, 2021), <https://www.nytimes.com/2021/04/13/technology/racist-computer-engineering-terms-ietf.html> [<https://perma.cc/APX2-3VSQ>]. Potential replacements include swapping “master” for “primary” and “blacklist” for “blocklist” *Id.* In academia, some programs and peer reviewers are replacing the ableist phrase “blind review,” which equates blindness with ignorance, with “anonymous review.” Shelly Tremain, *Ableist Language and Philosophical Associations*, NEW APPS: ART, POL., PHIL., SCI. (July 19, 2011), <https://www.newappsblog.com/2011/07/ableist-language-and-philosophical-associations.html> [<https://perma.cc/7E64-28QE>].

³⁸³ *Opium Eau De Toilette Spray*, YVES SAINT LAURENT, <https://www.yslbeautyus.com/fragrance/womens-fragrances/opium/opium-eau-de-toilette-spray/512YSL.html> [<https://perma.cc/7G69-MRRU>]. See also *1977 Opium*, MUSÉE YVES SAINT LAURENT PARIS, <https://museeyslparis.com/en/biography/opium> [<https://perma.cc/E6FP-Q2E9>]. The Opium name is itself an exoticizing yikes.

³⁸⁴ See *Les Absolus D’Orient Collection*, GUERLAIN, <https://www.guerlain.com/us/en-us/fragrance/woman/collections/les-absolus-dorient> [<https://perma.cc/H2WP-Z3C9>].

The mainstream perfume industry is laden with exclusionary practices. Many would-be perfumemakers are precluded from fragrance educations and employment with perfumeries or composition houses, where they could practice their craft. However, compelling self-taught compositions reveal that French heritage and formal training are not prerequisites for producing provocative perfumes.³⁸⁵ Successful niche perfumeries demonstrate how customers can be compelled by noses' stories, and many opt to highlight marginalized perfumers' presence by featuring their names, photographs, and stories on marketing materials and packaging rather than hiring white celebrities to be "faces" of their fragrances.³⁸⁶ Coordinated advocacy also documents how many parts of the industry are ready to retire colonialist, racist tropes.³⁸⁷ Niche perfumers, many of whom are women and people of color, are using their practices and perfumes to dismantle elitism, erasure, and exclusionary practices in perfumery. A new approach is emerging—one that amplifies efforts to democratize the perfume industry.

III. POPULARIZING PERFUMERY THROUGH OPEN SOURCE PERFUMES

In 2012, Wilson-Brown founded the Institute for Art and Olfaction in Los Angeles, more than six thousand miles from Grasse.³⁸⁸ Her vision was to provide "public access to the practice of working with scent" through producing experimental projects; promoting visibility for independent, artisanal, and experimental perfumers and other artists; and providing accessible education for aspiring perfume makers.³⁸⁹ One example was a 2018 Perfume Design Challenge, hosted by the Institute offshoot Open Source Smell Culture, which invited participants to create fragrances inspired by the beloved Los Angeles mountain lion P-22.³⁹⁰

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388 *Mission*, INST. FOR ART AND OLFACTION (2023), <https://artandolfaction.com/about/mission> [<https://perma.cc/J9DT-UFN5>]; *Saskia Wilson-Brown*, INST. FOR ART AND OLFACTION (2023), <https://artandolfaction.com/saskia-wilson-brown> [<https://perma.cc/W6DE-YFP2>] (even in revolutionary perfumery France cannot be escaped, as Wilson-Brown describes herself as "French by upbringing").

389 *Mission*, INST. FOR ART AND OLFACTION, *supra* note 388.

390 Institute for Art and Olfaction, *Open Source Smell Culture Formulas Database*, GOOGLE SHEETS, https://docs.google.com/spreadsheets/d/1U4XKFcUypBs0ruJybO9oXKNgIs6_fUDATj4U7gjuZr4/edit#gid=554372652 (last visited Nov. 22, 2023). P-22 was euthanized in 2022. Laura J. Nelson, *P-22, L.A. Celebrity Mountain Lion, Euthanized due to Severe Injuries*, LOS ANGELES TIMES (Dec. 17, 2022), <https://www.latimes.com/california/story/2022-12-17/p22->

Attendee Shelley Ray crafted a scent described as giving “Persian cat in the boudoir.”³⁹¹ Madeleine Stearns designed a fragrance inspired by the sensations of “stalking . . . prey for 30 hours. Not too much sleep, hyperfocused and aware.”³⁹² Last, MR created a scent that captured “not just the smell of a mountain lion but also the dry scrubby area it lives in and the synthetic note of its tracking collar.”³⁹³ The trio of perfumes have little in common olfactorily, but they share a radical commonality: their sources, descriptions, and formulas are provided publicly and free from restrictive IP, making them examples of “open source perfumes.”

Open-source perfumery is indebted to a movement that has nothing to do with fragrance—the free culture movement. In 1984, Stewart Brand, founder of the countercultural *Whole Earth Catalog*, made a proclamation that became a platitude: “Information wants to be free.”³⁹⁴ Valuing free information predates Brand’s pithy one-liner significantly. Libraries loaned resources to patrons for free over many centuries.³⁹⁵ The Supreme Court pronounced that its decisions were free to reproduce in

obituary-celebrity-mountain-lion-cougar-puma-griffith-park-california [https://perma.cc/53EF-QFLU].

³⁹¹ OPEN SOURCE SMELL CULTURE, *supra* note 390 (while these perfumes are published using an open-source license, the document disables downloading, printing, and copying, somewhat restricting its practical utility as “open”).

³⁹² *Id.*

³⁹³ *Id.*

³⁹⁴ Stewart Brand, *The History of “Information Wants to be Free”*, STEWART BRAND, https://sb.longnow.org/SB_homepage/Info_free_story.html [https://perma.cc/QS8Y-J7NM]. The aphorism has inspired multiple law review article titles. *See, e.g.*, Gregory A. Stobbs, *Information Wants to Be Free, but the Packaging Is Going to Cost You!*, 2 MICH. TELECOMM. & TECH. L. REV. 75, 75 (1996); Bruce R. Poquette, *Information Wants to Be Free*, 22 HAMLINE J. PUB. L. & POL’Y 175, 175 (2000); R. Polk Wagner, *Information Wants to Be Free: Intellectual Property and the Mythologies of Control*, 103 COLUM. L. REV. 995, 995 (2003).

³⁹⁵ *A History of US Public Libraries*, DIGIT. PUB. LIBR. OF AM., <https://dp.la/exhibitions/history-us-public-libraries/beginnings/first-public-libraries> [https://perma.cc/S3F3-3PJB]; AARON PERZANOWSKI & JASON SCHULTZ, *THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY* 25 (2016). Libraries have often relied on the copyright doctrine of fair use to serve patrons without infringing publishers’ copyrights. Peter B. Hirtle, *Research, Libraries, and Fair Use: The Gentlemen’s Agreement of 1935*, 53 J. COPYRIGHT SOC’Y U.S.A. 545, 546–47 (2006); *see* Williams & Wilkins Co. v. United States, 487 F.2d 1345, 1359 (Ct. Cl. 1973); Cambridge Univ. Press v. Patton, 769 F.3d 1232, 1237, 1241–42 (11th Cir. 2014); Authors Guild, Inc. v. HathiTrust, 755 F.3d 87, 90–91 (2d Cir. 2014); *see also* David R. Hansen & Kyle K. Courtner, *White Paper on Controlled Digital Lending of Library Books*, CONTROLLED DIGIT. LENDING (2018), <https://controldigitalending.org/whitepaper> [https://perma.cc/ST2K-86FP] (describing the library process of controlled digital lending, which invokes the copyright doctrine of fair use to distribute digital copies of physical books in a 1:1 ratio). The Intellectual Property and Information Policy (iPIP) Clinic has advised clients, including Library Futures, on the law and policy issues surrounding controlled digital lending. All information discussed in this Article is available publicly.

1834, a position affirmed more than a century later.³⁹⁶ President Lyndon Johnson signed the Freedom of Information Act in 1966, which enables the public to access free knowledge about the inner workings of government.³⁹⁷ Across all three examples, however, IP owners—from publishers to authors to contractors—have argued that their rights can and should be permitted to restrict access to free information.³⁹⁸

Such views have been vindicated by policy. In 1998, President Bill Clinton signed the Sonny Bono Copyright Term Extension Act, which many scholars and activists derisively described as the Mickey Mouse Act because the law coincided with when Disney’s copyright in the character was slated to expire.³⁹⁹ As teased by its title, the law extended copyright terms from fifty years beyond the life of the author to seventy years, and it did so retroactively.⁴⁰⁰ Works already the public domain, like the prescient robotic dystopia film *Metropolis*, were pushed back under copyright for twenty more years.⁴⁰¹ Works with copyrights set to expire on January 1, 1999, like Robert Frost’s classic poem “Stopping By Woods on a Snowy Evening,” would no longer join the public domain until much later.⁴⁰² And works published in 1999, like Sugar Ray’s

³⁹⁶ *Wheaton v. Peters*, 33 U.S. 591 (1834) (publishers unsuccessfully seeking copyright protection for reporters’ transcriptions of Supreme Court decisions); *Georgia v. Public.Resource.Org*, 140 S. Ct. 1498 (2020) (publishers unsuccessfully resisting free disclosure of laws incorporating annotations). While I was on research leave, the iPIP Clinic filed an amicus brief in *Am. Soc’y for Testing & Materials v. Public.Resource.Org*, (D.C. Cir. 2023) on behalf of American Federation of State, County and Municipal Employees (AFSCME), supporting Public Resource’s argument that standards ought to be incorporated into laws openly. See generally *Am. Soc’y for Testing & Materials v. Public.Resource.Org*, 82 F.4th 1262 (D.C. Cir. 2023). All information discussed in this Article is publicly available.

³⁹⁷ Hannah Bloch-Wehba, *Access to Algorithms*, 88 FORDHAM L. REV. 1265, 1272 (2020) (discussing how the promise of the Freedom of Information Act is thwarted by corporate invocation of trade secrecy exceptions).

³⁹⁸ See *Hachette Book Grp., Inc. v. Internet Archive*, No. 20-CV-4160, 2023 WL 2623787, at *1 (S.D.N.Y. Mar. 24, 2023) (arguing against Internet Archive’s practice of controlled digital lending); *Public.Resource.Org*, 82 F.4th at 1265 (arguing against public display of technical standards); *State v. Loomis*, 881 N.W.2d 749, 753 (Wis. 2016). The iPIP Clinic has advised Internet Archive and filed an amicus brief in the recent *Public.Resource.Org* case. All discussion is based on public information. Other industries encounter battles over free information, but the publishing industry’s tension is perhaps the most perennial.

³⁹⁹ 17 U.S.C. § 307.

⁴⁰⁰ *Id.*

⁴⁰¹ Mitch Stoltz, *US Copyright Term Extensions Have Stopped, But the Public Domain Still Faces Threats*, ELECTRONIC FRONTIER FOUNDATION (Jan. 16, 2023), <https://www.eff.org/deeplinks/2023/01/us-copyright-term-extensions-have-stopped-public-domain-still-faces-threats> [<https://perma.cc/U6WK-KB93>].

⁴⁰² *Entering the Public Domain Like It’s 1999*, U.S. CAROLINA LAW (Jan. 1, 2019), <https://library.uofsclaw.org/2019/01/public-domain-like-1999> [<https://perma.cc/5958-YBZQ>].

dirtbag earworm “Every Morning,” will not join the public domain until, at the earliest, 2093.⁴⁰³ The copyright landscape was radically reshaped.

Law professor and activist Larry Lessig—who literally wrote the book on free culture—was having none of it.⁴⁰⁴ In 2001, Lessig responded by collaborating with authors, artists, and activists to establish Creative Commons (CC).⁴⁰⁵ CC is a nonprofit that “help[s] overcome legal obstacles to the sharing of knowledge and creativity to address the world’s most pressing challenges.”⁴⁰⁶ CC does so by maintaining six plain-language licenses, all available in more than forty languages, that provide creators with flexible ways to share their work beyond restrictive copyright.⁴⁰⁷ Adopting CC licenses is easy: creators choose a license, communicate that choice to other people, and include a link to the license.⁴⁰⁸ While CC licenses were not built for perfumes, some are flexible enough to work for fragrances: all three P-22 perfumers released their work using a CC license that also qualifies as open source.⁴⁰⁹

Prior to the rise of the free culture movement, Christine Peterson coined the broad term “open source” to describe software released with fewer or no copyright restrictions in terminology that was approachable to businesses and newcomers.⁴¹⁰ It caught on.⁴¹¹ The open source

⁴⁰³ *Id.* To be clear, I hope that all the songwriters of “Every Morning” live longer than that.

⁴⁰⁴ See generally Larry Lessig, *Free Culture: The Nature And Future of Creativity* (Penguin Pub. Group 2014).

⁴⁰⁵ *A History of Creative Commons*, CREATIVE COMMONS, <https://creativecommons.org/timeline> [<https://perma.cc/RX8X-YALU>]. Lessig also responded by litigating, and losing, a landmark copyright case challenging the constitutionality of the Mickey Mouse Act, 7-2. *Eldred v. Ashcroft*, 537, U.S. 186, 193 (2003). Justice Ruth Bader Ginsburg delivered the majority’s decision. *Id.* As clinicians and practitioners will appreciate, Lessig later penned a piece reflecting that what the public domain had “needed [was] the help of a lawyer, not a scholar.” Lawrence Lessig, *How I Lost the Big One*, LEGAL AFFAIRS (Mar./Apr. 2004), https://www.legalaffairs.org/issues/March-April-2004/story_lessig_marapr04.msp [<https://perma.cc/Q93F-8PAY>]. The IPIP Clinic has advised Creative Commons. All information discussed in this article is available publicly.

⁴⁰⁶ *What We Do*, CREATIVE COMMONS, <https://creativecommons.org/about> [<https://perma.cc/QXN4-Y8XS>].

⁴⁰⁷ *About CC Licenses*, CREATIVE COMMONS, <https://creativecommons.org/about/cclicenses/> [<https://perma.cc/GA4Z-B8TP>].

⁴⁰⁸ *Id.*

⁴⁰⁹ *Id.*

⁴¹⁰ Christine Peterson, *How I Coined the Term “Open Source,”* OPEN SOURCE (Feb. 1, 2018), https://opensource.com/article/18/2/coining-term-open-source-software?extIdCarryOver=true&sc_cid=701f2000001OH7EAAW [<https://perma.cc/DFH7-B62X>]. “Free software,” coined by Richard Stallman, discussed *supra* note 399, often created confusion about whether the software was freely available, free of cost, or both. Peterson, *supra* note 410.

⁴¹¹ For a deeper dive into the history of early open source licenses, see P. McCoy Smith, *Copyright, Contract, and Licensing in Open Source*, in OPEN SOURCE LAW, POL’Y & PRACTICE (Amanda Brock, ed., Oxford U. Press 2022), <https://academic.oup.com/book/44727/chapter/378965548?login=false#392655205> [<https://perma.cc/E2ZJ-XZ6S>]. The volume is, of course, open access.

movement began by granting authors copyrights in software, but it also expanded to another space: hardware. Publicly releasing designs of tangible artifacts in makeable, modifiable, distributable, and useful ways can qualify those artifacts as open source hardware.⁴¹²

While open source hardware is popular for electronics, it can also be used to create “free” fragrances.⁴¹³ The Open Source Hardware Association (“OSHW”) is the leading organization certifying hardware—meaning any tangible object, like perfume—that satisfies certain open source standards.⁴¹⁴ In 2023, OSHWA certified the first open source hardware perfume, a simple fragrance called World Wide Web.⁴¹⁵ Unlike the trio of P-22 perfumes, World Wide Web uses a CC0 license, which reserves no rights in the perfume’s descriptions or formula.⁴¹⁶ Several more Internet-inspired perfumes have been certified by OSHWA, Search Engine, Touch Grass, and Buddy List.⁴¹⁷ Their sourcing, descriptions, and formulas are easily discoverable and accessible through the centralized OSHWA website.⁴¹⁸ All of the existing OSHWA-certified perfumes were created and certified by an amateur perfumemaker with limited formal training: me.⁴¹⁹

⁴¹² *Definition (English)*, OPEN SOURCE HARDWARE ASS’N (2023), <https://www.oshwa.org/definition> [<https://perma.cc/AH86-4NUL>].

⁴¹³ *Certified Open Source Hardware Projects*, OPEN SOURCE HARDWARE ASSOCIATION (2023), <https://certification.oshwa.org/list.html> [<https://perma.cc/XU4D-XNRG>] (identifying an entire category of “electronics”). For deeper dives into open source hardware, see John R. Ackermann, *Toward Open Source Hardware*, 34 U. DAYTON L. REV. 183 (2009); Dana Beldiman, *From Bits to Atoms: Does the Open Source Software Translate to Open Source Hardware?*, 35 SANTA CLARA HIGH TECH. L.J. 23 (2018); Timothy Murphy, *An Instance of Open Hardware: A Different Approach to Free and Open Source Hardware Licensing*, 30 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1045 (2020); Eli Greenbaum, *Three-Dimensional Printing and Open Source Software*, 2 N.Y.U. J. INTELL. PROP. & ENT. L. 257 (2013).

⁴¹⁴ *About OSHWA*, *supra* note 22. As a Clinical Teaching Fellow in N.Y.U. Law’s Technology Law and Policy Clinic, I supervised a team of students advising OSHWA. All discussion is based on publicly available information.

⁴¹⁵ *World Wide Web*, *supra* note 25.

⁴¹⁶ *CC0*, CREATIVE COMMONS (2023), <https://creativecommons.org/share-your-work/public-domain/cc0/> [<https://perma.cc/UPT3-77C5>].

⁴¹⁷ *Search Engine* and *Touch Grass*, *supra* note 25.

⁴¹⁸ *World Wide Web*, *Search Engine*, *Touch Grass*, and *Buddy List*, *supra* note 25.

⁴¹⁹ I attended a perfumery workshop in Grasse, but it was light on theory; my introduction to perfumemaking was through Saskia Wilson-Brown’s online course with Atlas Obscura. *Making Scents: Experimental Perfumery with Saskia Wilson-Brown*, ATLAS OBSCURA (2023), <https://www.atlasobscura.com/experiences/perfume-online-course> [<https://perma.cc/S5R7-32MU>]. My open source perfumes were created through my Cyberspace and Technology (CAT) Lab. CYBERSPACE AND TECH. LAB (2023), <https://www.catlab.tech> [<https://perma.cc/2TBG-5B38>].

Open source can be a powerful force for equity but, like perfumery, the movement has its own history with exclusionary practices.⁴²⁰ For decades, communities excused and enabled the misogynistic behaviors of leading figures of the movement, like Richard Stallman, as being merely eccentric.⁴²¹ Exclusionary environments created by the overlapping free culture, open source, and free software movements may explain why their central figures mirror those of mainstream perfumery: white men with elite training.⁴²²

⁴²⁰ So does CC. All of the organization's founding Board members—Eric Eldred, Jamie Boyle, Hal Abelson, Michael Carroll, Eric Saltzman, and Lessig himself—were men. *Board Members*, CREATIVE COMMONS (2023), <https://creativecommons.org/about/team/board-members> [<https://perma.cc/LP7Z-47QK>]. Most had educations from elite institutions. See Anat Maytal, *Professor To Present Case to Supreme Court*, HARVARD CRIMSON (Feb. 21, 2002); Hal Abelson, <http://groups.csail.mit.edu/mac/users/hal/bio.html> [<https://perma.cc/27FX-XY28>]; Michael W. Carroll, AM. U. WASH. COLL. OF LAW, <https://www.wcl.american.edu/community/faculty/profile/mcarroll/bio> [<https://web.archive.org/web/20230930203608/https://www.wcl.american.edu/community/faculty/profile/mcarroll/bio>]; Eric Saltzman, CREATIVE COMMONS <https://creativecommons.org/person/ericsaltzman> [<https://perma.cc/D7YP-D2SP>]; Lawrence Lessig, HARVARD LAW SCHOOL, <https://hls.harvard.edu/faculty/lawrence-lessig> [<https://perma.cc/BBA2-CJ7B>]. The first woman to join the CC Board, Molly Shaffer Van Houweling, joined the following year. *Board Members*, CREATIVE COMMONS (2023), <https://creativecommons.org/about/team/board-members> [<https://perma.cc/DDT4-MUKX>].

⁴²¹ To be clear, Stallman would not be thrilled to be lumped in with the open source movement. Richard Stallman, *Why Open Source Misses the Point of Free Software*, GNU OPERATING SYSTEM, <https://www.gnu.org/philosophy/open-source-misses-the-point.en.html> [<https://perma.cc/JP8R-7BJF>]. He founded the free software movement, another ideological offshoot of free culture. *Richard Stallman's Personal Site*, RICHARD STALLMAN (2023), <https://stallman.org/biographies.html> [<https://perma.cc/Y8PG-RH4F>]. Moreover, his behavior has been shocking: he handed out so-called "pleasure cards" instead of business cards; his office placard read "RICHARD STALLMAN: KNIGHT FOR JUSTICE (ALSO HOT LADIES);" he repeatedly defended "voluntar[y] pedophilia;" he questioned whether "assault" was the appropriate way to describe one of Jeffrey Epstein's underage victims; and after the latter comments, many MIT alumnae came forward to accuse him of sexual harassment or creating a hostile work environment. Selam G., *Remove Richard Stallman*, MEDIUM (Sept. 12, 2019), <https://selamjie.medium.com/remove-richard-stallman-fec6ec210794> [<https://perma.cc/KE9M-URRV>]; Selam G., *Remove Richard Stallman: Appendix A*, MEDIUM (Sept. 16, 2019), <https://selamjie.medium.com/remove-richard-stallman-appendix-a-a7e41e784f88> [<https://perma.cc/H9CB-TEVE>]. Due to public outcry, Stallman resigned from his positions at MIT and the Free Software Foundation (FSF). Jon Porter, *Richard Stallman Resigns from MIT Over Epstein Comments*, THE VERGE (Sept. 17, 2019, 5:27 AM), <https://www.theverge.com/2019/9/17/20870050/richard-stallman-resigns-mit-free-software-foundation-epstein> [<https://perma.cc/WP63-L3EQ>]. He returned to the FSF Board a year later. Mitchell Clark, *Richard Stallman Returns to the Free Software Foundation After Resigning in 2019*, THE VERGE (Mar. 22, 2021, 5:39 PM), <https://www.theverge.com/2021/3/22/22344910/richard-stallman-returns-free-software-foundation-board-comments> [<https://perma.cc/T5FH-67E7>].

⁴²² The free culture and open source movements are bigger than a handful of men, but the backgrounds of the men mentioned in this Article are illustrative. Stewart Brand attended the Phillips Exeter Academy and Stanford University. *Brand (Stewart) papers*, ONLINE ARCHIVE OF CALIFORNIA, <https://oac.cdlib.org/findaid/ark:/13030/kt6199s310> [<https://perma.cc/J53D-G3MJ>]. Lawrence Lessig graduated from Wharton, the business school at the University of Pennsylvania,

However, the inherent inequity in open source is a bigger problem than the community's composition. IP policies that prioritize equities over efficiencies should, as Madhavi Sunder puts it, promote "[e]conomic remuneration from cultural production" because creators' works "will be an important source of revenue and stimulus for development."⁴²³ Open source is at odds with this vision: it requires people to give away their labor for free.⁴²⁴ That ask is bigger for some communities than others. Kate Darling recounted resistance from Black women inventors from Detroit when she explained why MIT's breast pump hackathon required acceptance of the event's open source IP terms, and she quickly realized that their hesitancy was rooted in history.⁴²⁵ As Madhavi Sunder and Anupam Chander put it, an overly romantic notion of the commons fails to recognize that "in practice, differing circumstances—including knowledge, wealth, power, and ability," as well as race, gender, and sexuality, "render some better able than other to exploit a commons."⁴²⁶ When marginalized people are routinely denied both capital and credit for their creative contributions, many are understandably skeptical of a movement premised around giving up both.

In some ways, Wilson-Brown's philosophies are aligned with those of the initial wave of free culture movements: a deep skepticism of solo ownership. As someone "interested in expanding the thinking around ownership within perfumery," Wilson-Brown has observed perfume-makers' reactions to ideas, such as some saying, "so and so is the first person to come up with this—and then someone else does it and they're like, 'Oh, you copied me.' What is this competitiveness that we have? This obsession with being the first, the best, the most important? We're all competing for a tiny prize: a few more likes on Instagram, at best. So, the idea with OSSC was to create structures and conversation around sharing information and, in so doing, help relieve everybody of the

and Yale Law School. *Lawrence Lessig*, *supra* note 421. Richard Stallman went to the MIT and Harvard University. *Richard Stallman: High School Misfit, Symbol of Free Software, MacArthur-Certified Genius*, MICHAEL GROSS, <https://www.mgross.com/books/my-generation/my-generation-bonus-chapters/richard-stallman-high-school-misfit-symbol-of-free-software-macarthur-certified-genius> [<https://perma.cc/AHH2-SGQL>].

⁴²³ Madhavi Sunder, *IP³*, 59 STAN. L. REV. 257, 323 (2006).

⁴²⁴ This time, free as in beer, not free as in speech.

⁴²⁵ Kate Darling, *Toward a Feminist Cyberlaw A-Ha*, in *FEMINIST CYBERLAW* (Meg Leta Jones & Amanda Levendowski, eds., forthcoming June 2024).

⁴²⁶ Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CALIF. L. REV. 1331, 1332 (2004). *See also* Molly K. Land & Jay D. Aronson, *Human Rights and Technology: New Challenges for Justice and Accountability*, 16 ANN. REV. L. & SOC. SCI. 223, 234 (2020) (critiquing the open source movement as focusing on the global north).

constant vigilance and fear.”⁴²⁷ Other perfumers see power in open source perfume. McCartney freed her best-selling fragrance, *The Sexiest Scent In The World* IMHO—30% Iso E. Super, 30% bergamot, 30% Cedramber®, and 10% vanillin—during the pandemic.⁴²⁸ Empowering people to create their own perfumes encourages existing perfumemakers. “I think accessibility is huge and important,” said Rosin, “I just want things that are accessible.”⁴²⁹

In other ways, however, open source perfume is a meaningful departure from its inspiration. Unlike key open source movements of the past, no one person is the founder, let alone “father,” of open source perfume. To the contrary, its most visible supporters are women and people of color, including people who began with no formal training in perfumery.⁴³⁰ From the outset, perfumers aspired for open source perfume to be a democratizing force that encourages a diverse community of perfumers to create and contribute back to the movement by eliminating restrictive IP and industry gatekeeping.

Using the P-22 and World Wide Web open source perfumes as guides, this Section illustrates open source perfume in practice in three parts. Part A describes the terms of a particular open source CC license, the Attribution-ShareAlike license, and details why it addresses both legal and social barriers to sampling scents. While Open Source Scent Culture maintains a list of open source formulas, including those of the P-22 perfumers, only aspiring perfumemakers in the know will think to look there or many of the other scattered websites that host free formulas. This is why Part B documents the mechanics of using OSHA certification and details why certification can amplify the reach of open source perfumery by creating a centralized database of freely sampleable scents.⁴³¹ Connecting open source perfumery with a new wave of the open source movement creates opportunities to share perfumemaking broadly, as if it were something more familiar, like drawing or painting. By combining existing open source licenses with open source certification, aspiring perfumemakers of all kinds are empowered to democratize the art and technology of perfumemaking.

⁴²⁷ Carla Seipp, *Beauty Disruptor Series: Saskia Wilson-Brown on Open-Access Scent*, BEAUTY MATTER (Sept. 1, 2022), <https://beautymatter.com/articles/beauty-disruptor-series-saskia-wilson-brown-on-open-access-scent> [<https://perma.cc/BB43-YQAU>].

⁴²⁸ 4160Tuesdays, FACEBOOK (July 6, 2020, 1:55 PM), <https://www.facebook.com/4160Tuesdays/photos/a.205186522942352/2851104838350494> [<https://perma.cc/8ZA9-MWVB>].

⁴²⁹ Nordstrand interview, *supra* note 127.

⁴³⁰ Saskia Wilson-Brown, board, me.

⁴³¹ Institute for Art and Olfaction, *supra* note 390; *supra* III. B.

A. *Applying Open Licenses*

While CC licenses were designed for poets, photographers, and programmers, they can also be used by perfumers to share detailed formulas publicly, while crediting creators' contributions. The Open Source Smell Culture Formulas Database dedicates an entire tab of its formula database to fragrances made using a particular CC license: Attribution-ShareAlike.⁴³² All three of the P-22 perfumemakers' formulas use that license.⁴³³

Attribution-ShareAlike is one of CC's open source licenses, and it grants other people broad rights to use the underlying work in exchange for observing specified requirements.⁴³⁴ Under Attribution-ShareAlike terms, anyone is "free to[s]hare—copy and redistribute the material in any medium or format" and "[a]dapt—remix, transform, and build upon the material for any purpose, even commercially."⁴³⁵ However, the Attribution-ShareAlike license is not without restrictions. Its "[a]tribution" term requires people to "give appropriate credit, provide a link to the license, and indicate if changes were made" in a way that does not suggest endorsement of the person or use by the licensor.⁴³⁶ Further, the "ShareAlike" term demands that any "remix, transform[ation], or build upon the [original]" be distributed under the same Attribution-ShareAlike license.⁴³⁷ Taken together, Attribution-ShareAlike provides aspiring perfumemakers a broad license to sample perfumes without erasing the nose's work.

There is a hitch with using CC licenses to release open source perfumes. The terms of CC licenses apply only to "original works of authorship and other material subject to copyright."⁴³⁸ The Open Source Smell Culture Formulas Database, which includes the P-22 fragrances, features three related parts that are potentially protectable by copyright

⁴³² *Id.* There is also a tab for public domain perfumes, which does not address the attribution issues that erase the nose's work in mainstream perfumery. *Id.*; *supra* II. B. 2.

⁴³³ *Id.*

⁴³⁴ *CC BY-SA 4.0 Deed Attribution-ShareAlike 4.0 International*, CREATIVE COMMONS, <https://creativecommons.org/licenses/by-sa/4.0> [<https://perma.cc/EHW9-EE7B>].

⁴³⁵ *Id.*

⁴³⁶ *Id.*

⁴³⁷ *Id.* There is an additional term disallowing other restrictions, such as "legal terms or technological measures," that infringe on the permissions granted by the license. *Id.*

⁴³⁸ *Id.* It also applies to "similar rights . . . [which] means . . . rights closely related to copyright including, without limitation, performance, broadcast, sound recording, and Sui Generis Database Rights, without regard to how the rights are labeled or categorized." Moral rights, personality rights, privacy, patent rights, and trademark rights are expressly excluded from the license. *Id.* at 2.b.

law: the perfumes' sources, descriptions, and formulas.⁴³⁹ The database displays those parts in a straightforward chart:

PERFUME DESIGN CHALLENGE 1: P-22 ⁴⁴⁰				
Name:	P-22			
Author:	Shelley Ray			
For:	The Institute for Art and Olfaction			
Notes:	Developed for the Perfume Design Challenge #1: P-22			
Year:	2018			
License:	CC BY-SA			
MATERIAL	SUPPLIER	DIL%	GRAMS	NOTES
Galbanum	EDN ⁴⁴¹	10	0.165	
Geosmin	CP ⁴⁴²		0.33	
Tonquitone	PA ⁴⁴³	10	0.825	
Turmeric	WEL ⁴⁴⁴	10	0.165	
Cashmeran	PA	10	0.495	
Ambrocinide	VIG ⁴⁴⁵		0.165	
Terpineol Alpha Acetate	PA	10	0.495	
Abrinol	PA	1	0.165	
Castoreum	CP	10	0.165	
FURTHER COMMENTS				
DIRTY KITTY PEE. DUST. MORNING DEW. COSY CASHMERAN. VERSION 1-4 CAME OFF TOO PAMPERED + PRETTY — PERSIAN CAT IN THE BOUDOIR — FLORAL + ANIMALIC, BUT GRAIN-FREE CRUNCHIES ANIMALIC. TERPINEOL + AMBRINOL AT THE END HELPED BRING IT BACK OUTDOORS, BUT MORE DUST + SUN WOULD BE BETTER.				

⁴³⁹ The Institute for Art and Olfaction, *supra* note 431.

⁴⁴⁰ *Id.*

⁴⁴¹ *Galbanum CO2*, EDEN BOTANICALS, <https://www.edenbotanicals.com/galbanum-co2.html> [<https://perma.cc/7SAZ-DJTG>]. The Open Source Smell Culture Formulas Database provides supplier names and websites under the “Supplier Codes” tab. Institute for Art and Olfaction, *supra* note 390.

⁴⁴² CP stands for Creating Perfume (2023), <https://www.creatingperfume.com>.

⁴⁴³ PA stands for Perfumer’s Apprentice (2023).

⁴⁴⁴ WEL stands for Wellington Fragrances (2023).

⁴⁴⁵ VIG stands for Vigon (2023).

A response to Helen McClory's short fiction about LA mountain lion, P-22.

Each “material” used by Shelley Ray to produce notes is identified in a column by the names used by scent supply shops. The “supplier” column discloses those shops, which sell in quantities and prices that are manageable for aspiring perfumemakers. The “dil %” column defines the dilution percentage of each material, and the “grams” column identifies the weight of each material used in the perfume. Together, the material, dilution percentage, and grams columns list the formula; the supplier column shares sourcing information for those materials.

Neither the perfume's formula nor sourcing qualify for copyright protection. Fragrances' formulas are uncopyrightable because, as the Copyright Office has noted, “[a] mere listing of ingredients or contents, or simple set of directions, is uncopyrightable.”⁴⁴⁶ Sourcing information, such as whether an ingredient was purchased from Perfumer's Apprentice, are akin to a phone book: comprised of uncopyrightable facts.⁴⁴⁷ Only one component is protectable by copyright: the Shelley's poetic descriptions, which are short yet substantive literary works.⁴⁴⁸ As a result, the Attribution-ShareAlike license technically governs only those descriptions.

The existential limitation of CC licenses to copyrightable works may seem devastating to its usability by perfumers, but it is not. While CC licenses amend perfumers' copyrights, their trademark rights in branding or packaging, as well as publicity rights in marketing materials, are retained and can be used to protect perfumes from counterfeiting.⁴⁴⁹

The Open Source Smell Culture database also identifies all three P-22 perfumemakers by their names, an acknowledgment that not even Le Labo provided Voelkl. While the attribution aspect of the Attribution-ShareAlike license technically only applies to reuse or remix of perfumers' fragrance descriptions, it can still address the pervasive erasure of noses' contributions. Adopting an Attribution-ShareAlike license still signals that noses' names should be known. Realistically, most aspiring perfumemakers will presume that the license applies to all parts of the perfumes and opt to provide attribution anyway.

⁴⁴⁶ U.S. COPYRIGHT OFFICE, CIRCULAR 33, WORKS NOT PROTECTED BY COPYRIGHT (2023) at 2.

⁴⁴⁷ Feist Publications, Inc. v. Rural Telephone Service Co., Inc., 499 U.S. 340, 360 (1991).

⁴⁴⁸ 17 U.S.C. § 102.

⁴⁴⁹ See Carly Page, *Perfume makers are fighting back against an illegal fake scent boom*, WIRED (Nov. 23, 2020, 6:00 AM), <https://www.wired.co.uk/article/fake-perfume> [<https://perma.cc/MRS3-5AXK>].

Finally, and perhaps most importantly, publicly publishing sourcing and formulas addresses a wholly different form of IP protection: trade secrecy. Publication of those details frees fragrances from the IP most responsible for preventing aspiring perfumemakers from learning the craft. By waiving rights to trade secrecy, the P-22 perfumers provided a rich resource from which aspiring perfumemakers could sample, and they did so without needing the Attribution-ShareAlike or any other license. While the Attribution-ShareAlike license has more limitations than some perfumers might expect, it offers a less restrictive way to share perfumes while reflecting a commitment to crediting scents' creators.

B. *Advancing Open Certification*

World Wide Web is an open source perfume that smells like walking through a carpeted data center with an open window overlooking Silicon Valley in the 90s. The scent opens with an initial hit of gasoline, which comes from a chemical called hexanol-3-cis.⁴⁵⁰ The note acts as a reminder that fossil fuels power the data centers that support the web.⁴⁵¹ The gasoline is interrupted by bright bergamot, a nod to the disappearing citrus groves that used to pepper the Valley. A faint scent of wood paneling comes from cedar, inspired by the wood used to make telephone poles.⁴⁵² And a warm, lingering musk rises from the trademark-protected iso e super. With only four ingredients, the scent is simple, both to make and to sample. It is also the first perfume certified by the Open Source Hardware Association (OSHW).⁴⁵³

OSHW certification is not difficult. Perfumemakers disclose a moderate amount of personal information and document their perfume by sharing its name, a brief description, a website where it can be found, and a primary project type.⁴⁵⁴ "Perfume" is not a project type (yet), but there is an option for "wearables" and another for "arts," both of which can be appropriated to describe fragrances.⁴⁵⁵

Choosing a license provides an additional opportunity for perfumers to make their perfumes maximally available to aspiring perfumemakers.

⁴⁵⁰ *Id.*

⁴⁵¹ *Id.*

⁴⁵² *Open Source Perfume*, CYBERSPACE AND TECH. LAB, <https://www.catlab.tech/open-source-perfume> [<https://perma.cc/3MVR-S6Q2>].

⁴⁵³ *Id.* I was invited to submit World Wide Web for evaluation by Michael Weinberg, a board member of OSHWA. *Board Members*, OPEN SOURCE HARDWARE ASS'N, <https://www.oshwa.org/about/board-members/> [<https://perma.cc/Z7N7-7KXT>].

⁴⁵⁴ *Certify a Project*, OPEN SOURCE HARDWARE ASS'N, <https://application.oshwa.org/apply> [<https://perma.cc/R2KU-SZW>].

⁴⁵⁵ I've certified all three of my open source perfumes as wearables. TK.

OSHOWA asks prospective certifiers to identify their hardware, software, and documentation licenses, only the latter of which applies to perfume.⁴⁵⁶ OSHOWA defines twelve different licenses for documentation, six of which are CC licenses, including the Attribution-ShareAlike license favored by the P-22 open source perfumers.⁴⁵⁷ (“Other” is also an option.)⁴⁵⁸

An alternative to the Attribution-ShareAlike license is CC0. CC0 is “no rights reserved,” effectively releasing perfumes into the public domain.⁴⁵⁹ While most formulas are not copyrightable, the Copyright Office has recognized an exception when “a recipe . . . creatively explains or depicts how or why to perform a particular activity A registration for a recipe may cover the written description or explanation of a process that appears in the work.”⁴⁶⁰ Perfumemakers seeking to make scents that are maximally free can draft descriptions that integrate formulas and sourcing so that the entire package is released from copyright protection. For perfumemakers who are willing to sacrifice credit—and some may not be—CC0 eliminates maximum friction from fragrance sampling.⁴⁶¹

OSHOWA also offers an alternate, elegant way to connect open source perfumes. By identifying perfumes using the same project types, “wearables” as well as “arts,” “education,” and “other,” and using the same keywords “fragrance, perfume, scent,” certifying perfumers can ensure that their works will be cross-referenced with existing open source perfumes.⁴⁶² New certifiers can then include citations to those existing open source perfumes, both OSHOWA-certified or elsewhere, which generates a link back to those formulas.⁴⁶³

Certifying open source perfumes through OSHOWA also solves a different challenge for open source perfumes: infrastructure. Arguably, the most easily-findable database of open source perfumes is the one maintained by Open Source Scent Culture.⁴⁶⁴ It is useful but somewhat outdated, with the most recent scent being from 2019.⁴⁶⁵ While the database includes a promising tab for public domain formulas, like those

⁴⁵⁶ *Certify a Project*, *supra* note 454.

⁴⁵⁷ *Id.* The other licenses are variations on GPL, the license pioneered by Richard Stallman. *Id.*

⁴⁵⁸ *Certify a Project*, *supra* note 454.

⁴⁵⁹ CC0, CREATIVE COMMONS, <https://creativecommons.org/share-your-work/public-domain/cc0/> [<https://perma.cc/T3GZ-VR6S>].

⁴⁶⁰ *Circular 33: Works Not Protected by Copyright*, U.S. COPYRIGHT OFF. 2 (Mar. 2023), <https://www.copyright.gov/circs/circ33.pdf> [<https://perma.cc/6PPA-Q867>].

⁴⁶¹ *Id.*; *Certify a Project*, *supra* note 454. It is the license I use for my open source perfumes. *Open Source Perfume*, *supra* note 452.

⁴⁶²

⁴⁶³ *Certify a Project*, *supra* note 454.

⁴⁶⁴ Institute for Art and Olfaction, *supra* note 390.

⁴⁶⁵ *Id.*

released using CC0, it is empty.⁴⁶⁶ Established and emerging perfumemakers may swap formulas on fragrance forums, but finding the right ones can be frustrating.⁴⁶⁷ By providing an intuitive, searchable certified projects list, OSHA can operate as *the* centralized database for open source perfumes. World Wide Web, for example, is searchable by project type (wearable, arts, education) or keywords (fragrance, perfume, scent, Internet), making it discoverable by people who are seeking perfumes or simply searching for open source inspiration.⁴⁶⁸

CONCLUSION

Three millennia ago, a scribe recorded the recipe for the first documented perfume.⁴⁶⁹ The fragrance consisted of flowers, calamus root, cyperus, myrrh, balsam, and oil.⁴⁷⁰ Its nose was not a man from Grasse, but rather a Babylonian woman of color named Tapputi, who is widely regarded as the first professional perfumer.⁴⁷¹ Even then, the nascent perfume industry was exclusionary. Only royalty could use certain scents.⁴⁷² Rules evolved, and their variants extended well beyond the seventeenth century, by which time white Frenchmen and their sons had created a vast fragrance empire in Grasse.⁴⁷³ Today, due to the newest wave of exclusionary practices in Western perfumery, perfumers who look like Tapputi struggle to study and practice the art and technology of fragrance.

Perfume is for everybody. Which is why women, particularly women of color, have been working to democratize fragrance. Maiya

⁴⁶⁶ *Id.*

⁴⁶⁷ Popular fragrance forums, like Basenotes, crowdsource recipes for existing perfumes like Santal 33 and Chanel N° 5. *See, e.g.,* @DanaB, *Chemical Analysis of Santal 33?*, BASENOTES (July 12, 2019), <https://basenotes.com/threads/chemical-analysis-of-santal-33.462216> [<https://perma.cc/W238-SRXX>]; @ChrisBartlett, *Chanel No. 5 Formula*, BASENOTES (Mar. 19, 2012), <https://basenotes.com/threads/chanel-no-5-formula.297209> [<https://perma.cc/J27F-92YY>] (sharing Perfumer's Apprentice formula); @Roeletti, *Chanel No.5 Simple Beginner Blend*, BASENOTES (Feb. 22, 2022), <https://basenotes.com/threads/chanel-no-5-simple-beginner-blend.524136> [<https://perma.cc/A3X5-LPQB>].

⁴⁶⁸ *World Wide Web*, *supra* note 25.

⁴⁶⁹ Leman Altunaş, *The 3,200-Year-Old Perfume of Tapputi, The First Female Chemist in History, Came to Life Again*, ARKEONEWS (July 24, 2022), <https://arkeonews.net/the-3200-year-old-perfume-of-tapputi-the-first-female-perfumer-in-history-came-to-life-again> [<http://perma.cc/>].

⁴⁷⁰ *Id.*

⁴⁷¹ Leanna Serras, *The Fascinating History of Perfume*, FRAGRANCEX (Oct. 28, 2021), <https://www.fragrancex.com/blog/history-of-perfume-and-cologne> [<https://perma.cc/KGL8-YKWK>]. She was also the first documented chemist, naturally. Altunaş, *supra* note 469.

⁴⁷² *Id.*

⁴⁷³ Beardsley, *supra* note 21.

Nicole Smith launched Black Girls Smell Good to create “a safe space to learn about fragrance without feeling like an outsider.”⁴⁷⁴ She shares her knowledge and passion with her 90,000 social media followers, some of whom are longtime fragrance lovers and others who are just getting started.⁴⁷⁵ She also makes space to highlight Black-owned perfumeries.⁴⁷⁶ Some of those wares are available at Kimberly Waters Black-owned perfume parlor in Harlem, the only one of its kind, where she operates six-week internships for young people interested in fragrance careers.⁴⁷⁷ Wilson-Brown has also been a leader in democratizing fragrance through her educational and experiential efforts with the Institute for Art and Olfaction.⁴⁷⁸

This Article joins the endeavors of these and so many other perfume makers by challenging perfumers to address the vast legal and social inequities in the fragrance industry through freely releasing their formulas. Making perfume should be as accessible as another familiar art and technology, one that millions of amateurs embraced overnight during COVID-19: baking sourdough. Recipes were easily discoverable and freely available through centralized websites, YouTube, and cookbooks.⁴⁷⁹ Those recipes were more than lists of ingredients. Other bakers wrote recipes that shared technical details, like bake times, alongside intimate ones, like the first time someone baked bread with their partner after having a baby.⁴⁸⁰ People could identify ingredients easily and purchase them at nearby grocery and online specialty stores. While chemistry was involved, aspiring bakers who were not interested in the details didn’t need to understand it. After a couple misshapen loaves, people could put their own twists on sourdough.

This is not to say that trained bakers are not skilled, creative, and disciplined—they are, just as perfume makers are. But if baking

⁴⁷⁴ Denton-Hurst, *supra* note 18.

⁴⁷⁵ *Id.*

⁴⁷⁶ *Id.*

⁴⁷⁷ *Id.*

⁴⁷⁸ *Saskia Wilson-Brown*, INSTITUTE FOR ART AND OLFACTION (2023), <https://artandolfaction.com/saskia-wilson-brown>.

⁴⁷⁹ *See, e.g.*, Simply Recipes, YOUTUBE <https://www.youtube.com/c/simplyrecipes>; THE WOKS OF LIFE <https://thewoksoflife.com>. To be clear, there are websites, YouTube channels, and books dedicated to perfumery, though they are not always accompanied by easy-to-follow recipes. *See, e.g.*, Sam Macer, *How To Make Perfume // Full perfumery course (2023)*, YOUTUBE <https://www.youtube.com/watch?v=V-bWm2FnVk4>; G.W. SEPTIMUS PIESSE, THE ART OF PERFUMERY, AND METHODS OF OBTAINING THE ODOURS OF PLANTS (1867).

⁴⁸⁰ The narrativization of recipes is likely strategic legally (or, more cynically, by providing more space for advertising and amplifying SEO), but it is often criticized colloquially. Byrne Hobart, *Why Recipe Bloggers Make You Scroll So Far to Read the Recipe*, ONE ZERO (Jan. 8, 2020), <https://onezero.medium.com/war-peace-bacon-eggs-understanding-the-endless-recipe-site-preamble-a890b3c55ad>.

sourdough were more like perfumery, Western bakeries would be largely led by French bakers who trained at the Parisian L'école Lenôtre. You would never know their names. Their pastries would tell the same stale stories. There would be no space for amateurs. And there would be limited opportunities for self-taught rookies to blossom into professionals.⁴⁸¹ During quarantine, many children helped their parents bake bread, but society rarely teaches children the perfumery skills of olfactory memory or aroma curiosity.⁴⁸² As McCartney lamented, “you can’t go to your local community center. You can do your yoga class, you can do your water aerobics. [Y]ou can do poetry, you can learn how to play the guitar, [but] nobody teaches anybody perfume.”⁴⁸³ Without exposure to perfume making, aspiring perfume makers face challenges to getting started. Learning perfumery without sampling formulas is like attempting to bake sourdough without starter—impossible.

Patents and trade secrecy render materials and formulas inaccessible, and exclusionary practices have a parallel effect on the mainstream Western perfume industry. Yet, every year, self-taught and marginalized perfumers continue to find fragrances and share their stories with friends, customers, and fans. Producing open-source perfumes that are truly free—free to make, free to sample, and free from gatekeeping—can help democratize the industry by dismantling entrenched legal and social barriers that exclude aspiring perfume makers. Importantly, open-source perfume works in practice. Within weeks of World Wide Web’s release, aspiring perfume makers sampled the scent to create their own versions.⁴⁸⁴ Open-source perfume ought to be the next free culture frontier, and this Article sought to chart a course toward the practice’s expansion. But its work is incomplete. Perfume is physical, and it deserves to be experienced. So, grab a scent strip, load it up, and take a sniff. You may find yourself inspired to sample something for yourself.

⁴⁸¹ The opposite happened with quarantine sourdough bakers. *See, e.g.*, Anna Kang, *The French Actor Who Turned Quarantine Baking Into a Thriving Business*, FORBES (June 11, 2020), <https://www.forbes.com/sites/annakang/2020/06/11/the-french-actor-who-turned-quarantine-baking-into-a-thriving-business>; Natalie Kitroeff, *2 Broke Artists Started a Bakery At Home. It’s a Pandemic Hit*, N.Y. TIMES (Oct. 21, 2020), <https://www.nytimes.com/2020/10/21/world/americas/mexico-city-quarantine-baking.html>.

⁴⁸² THE BIG BOOK OF PERFUME, *supra* note 267.

⁴⁸³ McCartney interview, *supra* note 12.

⁴⁸⁴ *See, e.g.*, @James_Carey, TWITTER (2023), https://twitter.com/James__Carey/status/1619399842354315264.

APPENDIX A: PROFILED PERFUMES

This Article discusses the following fragrances, in order of appearance:⁴⁸⁵

- Le Labo Santal 33 (Estée Lauder)
- Maison Louis Marie Bois de Balincourt*
- CAT Lab World Wide Web*
- Maison Francis Kurkdjian Baccarat Rouge 540 (LVMH)
- Sarah Jessica Parker Covet (Coty)
- La Boticá Nolita 96*
- Dolce & Gabbana Velvet Amber Sun (Shiseido)
- Chanel N° 5 Parfum*
- Chanel N° 5 Eau du Parfum*
- D.S. & Durga Pistachio*
- Viktor & Rolf Flowerbomb (L'Oréal)
- Frédéric Malle Musc Ravageur (Estée Lauder)
- Frédéric Malle Carnal Flower (Estée Lauder)
- Frédéric Malle Noir Epices (Estée Lauder)
- Frédéric Malle Rose Tonnerre (Estée Lauder)
- Zoologist Civet*
- Meleg Civet Cat Chypre*
- Pierre Armingeat Rêve d'Or (defunct)
- Georges Darzens Floramyne (defunct)
- Yves Saint Laurent Black Opium (L'Oréal)
- Dossier Floral Aldehydes*
- Guerlain Shalimar (LVMH)
- Kimberly New York Ether*
- Shawn Crenshaw Ovation for Men*
- Yosh Omnistar*
- Guerlain Encens Mythique (LVMH)
- Guerlain Bois Mystérieux (LVMH)
- Shelley Ray P-22*
- Madeleine Stearns P-22*
- MR P-22*
- CAT Lab Search Engine*
- CAT Lab Touch Grass.*
- CAT Lab Buddy List*

⁴⁸⁵ Independent perfumes are annotated with an “*”. Noses for these perfumes are findable on websites like [Fragrantica](#).