

OPEN SOURCE PERFUME

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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, intellectual property (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

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fragrances, which empowers aspiring perfumemakers and the public to practice 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,” and 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 \$230 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://web.archive.org/web/20240101114026/https://www.nytimes.com/2015/11/16/t-magazine/perfume-santal-33-ds-durga-aesop.html]; *Santal 33*, LE LABO, <https://www.lalabofragrances.com/santal-33-147.html?size=50ml> [https://perma.cc/S5DV-VJ3X].

² *Santal 33*, *supra* note 1.

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-8R JL].

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-U LC2].

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> (last visited Feb. 21, 2024); 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 (Mar. 20, 2023, 5:44 PM), <https://www.intheknow.com/post/le-labo-santal-33-dupe> [https://perma.cc/GSH8-UYXX]; *No.04 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*, HARV. 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 SCIS. 22, Sept. 2016, at 1, 2; Rachel S. Herz, James Eliassen, Sophia Beland & Timothy Souza, *Neuroimaging Evidence for the*

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 perfumemakers (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, remains untested and unsettled. And those limited established rights are unsatisfying to both rights holders 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 then 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 pioneering perfumer and educator Saskia Wilson-Brown explains,

Emotional Potency of Odor-Evoked Memory, 42 NEUROPSYCHOLOGIA 371, 371 (2004); Amanda N. Miles & Dorthe 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 VA. 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 See *id.*

¹² Interview with Sarah McCartney, Perfumer, 4160 Tuesdays, in London, Eng. (July 21, 2023) [hereinafter McCartney Interview].

¹³ *Santal 33*, *supra* note 1.

What 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 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 with elitism, erasure, and exclusionary nomenclature, which deters many aspiring perfumers—particularly marginalized ones—from pursuing the practice. The 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

¹⁴ Saskia Wilson-Brown: *The Founder of the Institute for Art and Olfaction on the Art and Politics of Scent*, DEEM [hereinafter *Saskia Wilson-Brown*], <https://www.deemjournal.com/stories/saskia-wilson-brown> [<https://archive.is/mQTF3>].

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 significant 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. 1, 2023, 10:32 AM), <https://www.nytimes.com/2023/03/01/arts/music/de-la-soul-catalog-streaming.html> [<https://archive.is/8xbGH>]. For a deeper dive into the legality of sampling and the racism underlying its resistance, see Note, *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. 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 1998/1999 Paris* by Alexander McQueen (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>].

advertising practices decenter perfumers' contributions to favor the (white) celebrities who become the "faces" of perfumes, erasing their creative and authorial 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 perfumemakers remain white Frenchmen with formal training.²¹

This Article joins existing efforts to democratize an exclusive, exclusionary industry. To resolve murky IP rights without a rollback for rights holders, perfumers can opt in to certifying scents through the Open Source Hardware Association (OSHW), 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 OSHW certification database doubles as a centralized search engine for open source perfume formulas, a much-needed resource that does not otherwise 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 OSHW 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 a technology.

¹⁹ Baze Mpinja, *7 Black Perfumers Changing the Scent Game for Good*, HUFFPOST (Dec. 5, 2022, 1:46 PM), 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*, THE GRAPEVINE (Sept. 1, 2021), <https://blog.sporahealth.com/more-reads/decolonizing-scent-with-yosh-han> [<https://perma.cc/Y9C6-2T69>].

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

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

²³ Interview with Joey Rosin, Perfumer, Hoax Perfume, in Brooklyn, N.Y. (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/9BBO-X8MV>]; *Buddy List*, OPEN SOURCE HARDWARE ASS'N (June 22, 2023), <https://certification.oshwa.org/us002351.html> [<https://perma.cc/5TAM-RH3K>].

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 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. Saskia Wilson-Brown observes, “Open 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 1200 BCE, 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.²⁹ Not only does OSHA certification clarify IP issues, but also provides a concentrated place for aspiring perfumers to start their art.³⁰

This Article proceeds in three Parts, each one using a different fragrance as a frame for demonstrating different doctrines, discriminatory barriers, and directions for democratizing perfumery.³¹ Part I details fragrance fundamentals using Le Labo Santal 33 and La Botica 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 II.A examines IP protections, or lack thereof, in the “juice”—an insider term for liquid fragrance—inspired by the iconic Chanel N° 5. Trademark and copyright are untested protectors, and both pose problems. Colors can be guarded as trademarks.³² But granting a monopoly over common shades of perfume, like Santal 33’s near-clear

²⁶ See *infra* Conclusion.

²⁷ Saskia Wilson-Brown, *supra* note 14.

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

²⁹ See Leman Altunay, *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> [<https://perma.cc/C5WW-EJFW>].

³⁰ *About*, *supra* note 22.

³¹ See Amanda Levendowski, *Teaching Doctrine for Justice Readiness*, 29 CLINICAL L. REV. 111 (2022).

³² See *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/KQ2P-XMQ2>]; see also *infra* Section II.A.1.

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.³³ 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 **registration requires divulging processes' details publicly, which subjects them to appropriation by competitors after a relatively short term.**³⁴ While those limitations highlight the appeal of trade secrets, formulas are increasingly being reverse engineered using technology that is widely available to competitors.³⁵ 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 II.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.³⁶ When aspiring perfumemakers overcome those barriers, their contributions are often erased by industry-wide 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.**³⁷ 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.³⁸ 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

³³ See 17 U.S.C. § 102.

³⁴ 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>].

³⁵ See 18 U.S.C. § 1839(3); see also *infra* Section II.A.3.b.

³⁶ See *infra* Section II.B.1.

³⁷ See *infra* Section II.B.3.

³⁸ Seipp, *supra* note 28.

fragrances, like the series of P-22 hosted by Open Source Smell Culture.³⁹ 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 OSHWA for certification as open source hardware.⁴⁰ **OSHW 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.

Fragrance might feel frivolous, but it is not. Globally, perfume is a \$60 billion industry and is only growing.⁴¹ 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 founder to have a fragrance line in Bergdorf Goodman. “The more diversity we have, the more stories we get to hear.”⁴² 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.⁴³ While he lived in France, Voelkl was inspired by the sophisticated fragrances his mother wore, and he pursued perfumery.⁴⁴ For formal training, he attended the prestigious ISIPCA in Paris, a school specializing in perfume, cosmetics, and flavoring.⁴⁵ Voelkl soon landed a role as a professional perfumer at the

³⁹ See *infra* Part III.

⁴⁰ *World Wide Web*, *supra* note 25.

⁴¹ *Fragrances—Worldwide*, STATISTA, <https://www.statista.com/outlook/cmo/beauty-personal-care/fragrances/worldwide> [https://perma.cc/PXV2-SAHC].

⁴² Mazzone, *supra* note 17.

⁴³ *Principal Perfumer: Frank Voelkl*, FIRMENICH, <https://www.firmenich.com/fragrance/fine-fragrance/people/frank-voelkl> (last visited Feb. 22, 2024).

⁴⁴ *Id.* Fun fact: Voelkl’s mother wore chypre perfumes, discussed *infra* note 71 and accompanying text.

⁴⁵ *Principal Perfumer: Frank Voelkl*, *supra* note 43.

world's largest privately owned composition house, where he develops fragrances for luxury brands and perfumeries like Le Labo.⁴⁶

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 2018.⁴⁷ 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.⁴⁸ “When I looked into places I could study,” West explained, “I realized how representation for Black perfumers is virtually nonexistent.”⁴⁹ Instead, West taught herself perfumery.⁵⁰ 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).⁵¹ 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, too.⁵²

⁴⁶ *Fast Facts*, FIRMENICH, <https://www.firmenich.com/our-company#fast-facts> [https://web.archive.org/web/20240207160359/https://www.firmenich.com/our-company#fast-facts]. 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.B. *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]. 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, *THE PERFECT SCENT: A YEAR INSIDE THE PERFUME INDUSTRY IN PARIS AND NEW YORK*, at xii–xiv (2009).

⁴⁷ Denton-Hurst, *supra* note 18. “Boticá” is Spanish for “drugstore.”

⁴⁸ G Editors, *Meet Dawn Marie West from La Botica*, GARMENTORY (July 7, 2020), <https://www.garmentory.com/the-thread/meet-dawn-marie-west-from-la-botica> [https://perma.cc/98VF-PMPH].

⁴⁹ Denton-Hurst, *supra* note 18.

⁵⁰ *Id.*

⁵¹ *Id.* La Boticá also donates a percentage of its proceeds to The Dream Project, a nonprofit organization serving nearly thirty communities in the Dominican Republic to educate thousands of children and young adults. *The Brand*, LA BOTICA, <https://www.laboticanyc.com/thebrand> [https://perma.cc/SZH9-Q8RQ].

⁵² Mpinja, *supra* note 19; Katie Stanovick & Anna Buckman, *The Black-Owned Candle Brands You Should Know & Support*, THE ZOE REPORT (Aug. 31, 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, 12:33 PM), <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/>

The two scent storytellers behind Santal 33 and Nolita 96 appear to have little in common—not their experiences, not their educations, and not their employment.⁵³ And yet, the two both created perfumes with significant similarities.⁵⁴ Section I.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 different parts of the perfume industry. Section I.B describes the different players that create, market, and distribute perfumes. Taken together, this Part 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.⁵⁵ A heady sandalwood note features in Santal 33 and Nolita 96.⁵⁶ In both perfumes, the scent of sandalwood is prominent—and political. When Europeans colonized India, they extensively harvested sandalwood for its fragrance.⁵⁷ As a result, sandalwood trees have been overexploited to the point of endangerment.⁵⁸ While other countries grow sandalwood, its precarity as a natural material means that many

black-owned-beauty-fashion-gift-ideas (last visited Feb. 22, 2024); 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).

⁵³ 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.*

⁵⁴ In my experience, it was time consuming to identify a smaller, niche perfume foil to Santal 33.

⁵⁵ MANDY AFTEL, FRAGRANT: THE SECRET LIFE OF SCENT 51 (2014) [hereinafter AFTEL, FRAGRANT].

⁵⁶ See *Santal 33*, *supra* note 1; *Nolita 96 Eau de Parfum 50ml*, LA BOTICA, <https://www.laboticany.com/shop/nolita-96-perfume-preorder> [https://perma.cc/TM3Q-J86U].

⁵⁷ Ezra D. Rashkow, *Perfumed the Axe That Laid It Low: The Endangerment of Sandalwood in Southern India*, 51 INDIAN ECON. & SOC. HIST. REV. 41 (2014).

⁵⁸ *Id.*

perfumers opt for synthetic notes that imitate the tree's warm, spicy smell.⁵⁹

Perfumers, as well as crowdsourced community websites, often share information about perfumes' materials and 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 longest, and heart notes fall in between.⁶⁰ Santal 33 and Nolita 96 share a number of notes:

Top Notes: Iris
Heart Notes: Santal, Violet
Base Notes: Cardamom, Musk⁶¹

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.⁶² 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.”⁶³ When multiple materials work together in a perfume, like Santal 33's smoking wood alloy, they are called an

⁵⁹ See *id.*; R.C. McLellan, K. Dixon & D.M. Watson, *Prolific or Precarious: A Review of the Status of Australian Sandalwood (Santalum Spicatum [R.Br.] A.DC., Santalaceae)*, 43 RANGELAND J. 211, 211, 219 (2021); Andrew Brown, Alexandra Mettetal & Dhanushka Hettiarachchi, *Sandalwood—Perfumery*, in INDIAN SANDALWOOD: A COMPENDIUM 449, 452 (A.N. ArunKumar, Geeta Joshi, Rekha R. Warriar & N. Nataraja Karaba eds., 2022) (“[D]ue to availability, price and many reputable brand owners looking to distance themselves from black market operators, brands have been turning to synthetic sandalwood scents . . .”). Some perfumers, like Mandy Aftel, work only with natural scents. See MANDY AFTEL, *ESSENCE AND ALCHEMY: A NATURAL HISTORY OF PERFUME 7* (2001) [hereinafter AFTEL, *ESSENCE AND ALCHEMY*]. 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. *Santal 33*, *supra* note 1; *Nolita 96 Eau de Parfum 50ml*, *supra* note 56.

⁶⁰ INST. FOR ART & OLFACTION, *BASIC PERFUME PRIMER* (2020), 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.

⁶¹ *Nolita 96 Eau de Parfum 50ml*, *supra* note 56; *Santal 33 Le Labo*, FRAGRANTICA, <https://www.fragrantica.com/perfume/Le-Labo/Santal-33-12201.html> [<https://perma.cc/NB7V-GD56>].

⁶² See *Santal 33*, *supra* note 1; *Nolita 96 Eau de Parfum 50ml*, *supra* note 56; INST. FOR ART & OLFACTION, *supra* note 60.

⁶³ *Santal 33*, *supra* note 62. Le Labo uses the word “alloy,” which may feel more evocative of the American West and its mining opportunities than other fragrance terms. *Id.*

“accord.”⁶⁴ 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.⁶⁵ His fragrance wheel divided scents by vegetable or animal qualities and separated those into quadrants for bitter, vegetable, sweet, and animal.⁶⁶ Unlike subsequent fragrance wheels, Jellinek further defined categorizations by highlighting physiological responses to perfumes, like whether they are stimulating, narcotic, or (anti-)erogenous.⁶⁷ Decades later, perfume expert Michael Edwards published a streamlined fragrance wheel in his annual perfume manual.⁶⁸ Edwards’s 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.⁶⁹ 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.⁷⁰ And the Institute for Art and Olfaction adapted Edwards’s and Aftel’s approaches to provide a comprehensive, open source list of fragrance families that also includes

⁶⁴ Barbara Herman, *Fragrance Terms, Explained*, INTO THE GLOSS, <https://intothegloss.com/2014/07/perfume-fragrance-definition> [<https://perma.cc/825U-PHLE>].

⁶⁵ Isobel Hush, *Understanding the Fragrance Wheel*, SHAY & BLUE (Feb. 7, 2021), <https://www.shayandblue.com/blogs/nose-dive/understanding-the-fragrance-wheel> [<https://perma.cc/LFR7-HNJK>]; see also PAUL JELLINEK, *THE PRACTICE OF MODERN PERFUMERY* (1954).

⁶⁶ Laura Donna, *Fragrance Perception: Is Everything Relative?*, PERFUMER & FLAVORIST, Dec. 2009, at 26, 27. Jellinek further divided fragrances into nineteen subcategories, like resinous, sultry, rancid, fatty, and fecal. *Id.* at 27.

⁶⁷ *Id.* at 28.

⁶⁸ 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-7TQC>] (describing Edwards’s book *Fragrances of the World* as the “perfume Bible”).

⁶⁹ MICHAEL EDWARDS FRAGRANCES OF THE WORLD, <https://www.fragrancesoftheworld.com> [<https://web.archive.org/web/20240121220328/https://www.fragrancesoftheworld.com>]. The amber category used to be “Oriental,” as discussed in detail *infra* Section II.B.3. However, “Oriental” is still used in the thirty-third edition’s fragrance wheel. MICHAEL EDWARDS, *FRAGRANCES OF THE WORLD* 5 (33d ed. 2019).

⁷⁰ Mandy Aftel, *Aftelier Natural Perfume Wheel*, MINISTRY OF SCENT, <https://ministryofscents.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.*

definitions for specific styles, like “chypre,” which is characterized by its citrusy bergamot top notes and earthy oakmoss base notes.⁷¹ 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.⁷² On Edwards’s wheel, the two are dry woods fragrances.⁷³ Aftel’s wheel classifies both as soft woody scents.⁷⁴ And based on the Institute for Art and Olfaction fragrance “wheel,” both are woody perfumes.⁷⁵ 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.⁷⁶

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.⁷⁷ “Niche” has historically been linked to the number of retail outlets a perfume is sold in, but it does not necessarily mean that noses are in-house; rather, it often (but not always) signifies that the perfumery relies on entrepreneurs and investors who operate independently of the legacy institutions that comprise mainstream perfume producers.⁷⁸ 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.⁷⁹

⁷¹ INST. FOR ART & OLFACTION, *supra* note 60.

⁷² See Donna, *supra* note 66; Santal 33, *supra* note 1; Nolita 96 Eau de Parfum 50ml, *supra* note 56.

⁷³ Match It Fragrance Finder, MICHAEL EDWARDS FRAGRANCES OF THE WORLD, <https://www.fragrancesoftheworld.com/MatchIT/FragranceFinder> (last visited Feb. 23, 2024). Other woody notes are mossy, woods, and woody amber. MICHAEL EDWARDS FRAGRANCES OF THE WORLD, *supra* note 69.

⁷⁴ Mandy Aftel, *Aftelier Natural Perfume Wheel*, *supra* note 70.

⁷⁵ INST. FOR ART & OLFACTION, *supra* note 60.

⁷⁶ This Article uses the Institute for Art and Olfaction wheel when describing perfumes. *Id.*

⁷⁷ Denton-Hurst, *supra* note 18.

⁷⁸ Natalie Cola, *What Is a “Niche Perfume”?*, ETIKET J. (Jan. 11, 2023), <https://journal.etiket.ca/what-is-a-niche-perfume> [<https://perma.cc/UCJ4-FNTN>]; GARFINKLE, *supra* note 17.

⁷⁹ This definition is adapted from the categories in the Art and Olfaction Awards. *Artisan Category Qualifiers*, THE ART & OLFACTION AWARDS, <https://www.artandolfactionawards.org/submission/artisan> [<https://perma.cc/9Z5S-R5S2>]; *Independent Category Qualifiers*, THE ART &

Beyond niche lies mainstream perfume. Mainstream fragrances are often produced by brands that specialize in scent and other personal care items 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 Flavors & Fragrances (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.⁸⁰ It works like this: perfumeries describe their 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.⁸¹ Composition houses respond by pitching different compositions of scents, the most compelling of which “win[s] the brief.”⁸² Voelkl, for example, was selected by Le Labo to create Santal 33 from his position at Firmenich.⁸³ Perhaps unsurprisingly, composition houses often produce perfumes for luxury brands and celebrity fragrances, which rarely employ in-house noses.⁸⁴

OLFACTION AWARDS, <https://www.artandolfactionawards.org/submission/independent> [<https://perma.cc/N4G5-BJ32>].

⁸⁰ 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/V5T9-8AJZ>]; Garfinkle, *supra* note 17.

⁸¹ BURR, *supra* note 46, at 5–6.

⁸² *Id.* at 6.

⁸³ Frank Voelkl, LUCKYSCENT, <https://www.luckyscent.com/perfumers/51/frank-voelkl> [<https://perma.cc/4D38-QXQ9>]. Dolce & Gabbana’s fragrance Velvet Amber Sun was also created by Voelkl. *Principal Perfumer: Frank Voelkl*, *supra* note 43.

⁸⁴ 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 International Flavors & Fragrances (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 2004. BURR, *supra* note 46, at 10. 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-XFOQ>].

Additional important industry players are licensees, which contract with different brands to produce or market perfumes using other peoples' formulas.⁸⁵ 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).⁸⁶ Other leading licensees include Coty (New York), L'Oréal (France), and Shiseido (Japan).⁸⁷ 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.”⁸⁸ 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.⁸⁹ She invoked Nazi laws in a failed attempt to wrestle back control of her perfume house from the Wertheimer brothers because they were Jewish.⁹⁰ The perception that Chanel was an

⁸⁵ See Joan Kennedy, *The Companies Behind Fashion's Biggest Fragrances*, BUSINESS OF FASHION (Feb. 27, 2023), <https://www.businessoffashion.com/articles/beauty/the-companies-behind-fashions-biggest-fragrances> [<https://perma.cc/9NCK-5CRA>].

⁸⁶ *Le Labo*, ESTÉE LAUDER COS., <https://www.elcompanies.com/en/our-brands/le-labo> [<https://perma.cc/BT4V-J9BX>]; *Guerlain*, LVMH, <https://www.lvmh.com/houses/perfumes-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>].

⁸⁷ *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>]; Fillon & Kupervaser-Gould, *supra* note 80.

⁸⁸ See, e.g., CHANEL NO 5, Registration No. 701,978 (the only live mark); EVERY WOMAN ALIVE LOVES CHANEL NO. 5, Registration No. 1,058,841 (prior Registration No. 807,105).

⁸⁹ 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://web.archive.org/web/20240221134828/https://www.nytimes.com/2011/09/04/books/review/sleeping-with-the-enemy-coco-channels-secret-war-by-hal-vaughan-book-review.html>]. Hans Günther von Dincklage divorced his half-Jewish wife on the cusp of the Nuremberg Laws' enactment. *Id.*

⁹⁰ Dana Thomas, *The Power Behind the Cologne*, N.Y. TIMES MAG. (Feb. 24, 2002), <https://www.nytimes.com/2002/02/24/magazine/the-power-behind-the-cologne.html> [<https://web.archive.org/web/20231123181126/https://www.nytimes.com/2002/02/24/magazine/the-power-behind-the-cologne.html>]. The full story is even wilder. The Wertheimers, who maintain control of Chanel's perfumery operations today, outsmarted Chanel by transferring their

“indisputable collaborator” with the Nazis led her to be officially questioned by a French judge.⁹¹ And since her death, Chanel-the-brand has offered only milquetoast reflections on the antisemitic history of its namesake, stating:

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.⁹²

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, Ernest Beaux.

After serving in the French military, Beaux joined A. Rallet and Company, an elite Russian perfumery housed outside Grasse, France.⁹³ Rarely discussed is that 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*.⁹⁴ 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.⁹⁵

stake in Les Parfums Chanel to a Frenchman named Félix Amiot, who returned the company after the war. *Id.* Unfortunately, Amiot 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.*

⁹¹ Nothing more happened to her. Warner, *supra* note 89. Other commentators have bluntly characterized Chanel as an “incorrigible anti-Semite.” *E.g.*, James McAuley, *The Exchange: Coco Chanel and the Nazi Party*, NEW YORKER (Sept. 1, 2011), <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).

⁹² 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] (quoting a Chanel spokesperson).

⁹³ 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 and Company. *Id.*

⁹⁴ *Id.* at 70–72.

⁹⁵ His perfume singlehandedly created the fragrance family of aldehydic florals. *Id.* at 66–67.

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 the legal, social, and political forces that keep perfumery proprietary. Section II.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 effect on aspiring perfumers’ sharing and sampling of scents.** Those effects are compounded by industry practices. Section II.B documents how elitism, erasure, and exclusionary practices limit who can thrive as perfumers, with a preference for white men trained in France.⁹⁶ 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.⁹⁷ After months of experimentation, Beaux presented several vials to his client for inspection.⁹⁸ 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.⁹⁹ “I present my dress collections on the fifth of May, the fifth month of the year,” **proclaimed Coco Chanel,** “and so we will let this sample number five keep the name it has already, it will bring good luck.”¹⁰⁰ At the moment of its selection, Chanel N° 5 had already become the stuff of lore.¹⁰¹

Over a century later, Chanel N° 5 remains popular, potent, and proprietary. Nearly every aspect of Chanel N° 5, inside and outside, down

⁹⁶ Interview with Alex Charra, *Int’l Flavors and Fragrances, in London, Eng.* (July 21, 2023) [hereinafter Charra Interview].

⁹⁷ MAZZEO, *supra* note 93, at 59–60.

⁹⁸ *Id.* at 60–61.

⁹⁹ *Id.* at 61.

¹⁰⁰ *Id.*

¹⁰¹ See Tynan Sinks, *Why Chanel No. 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 *supra* notes 88–95 and accompanying text.

to its iconic crystal bottle, is potentially protectable by IP.¹⁰² 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.¹⁰³ The term emerged in the 1870s during an existential debate over the patent system.¹⁰⁴ Anti-patenters believed that modern people were predisposed to invent, making expensive and oppressive patent monopolies unnecessary.¹⁰⁵ Patent proponents countered the claims. British inventor Sir David Brewster spun up a growing coalition of patent defenders who called for "radical change."¹⁰⁶ 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 1709, and which were enshrined in the United States Constitution.¹⁰⁷ As Brewster explained, "Viewing 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."¹⁰⁸ To complete the concept, Brewster coined the term "intellectual property" to unite copyrights and patents under a single banner.¹⁰⁹ It worked—patents persisted.

¹⁰² However, Chanel's bid to register the Chanel flask has failed in both the United States and Lithuania. *Chanel Seeking to Register The Shape of Its Chanel No. 5 Fragrance Bottle as a Trademark*, LEGAL ERA (Aug. 18, 2022, 8:15 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>].

¹⁰³ This Article adopts the term without endorsing it.

¹⁰⁴ See ADRIAN JOHNS, *PIRACY: THE INTELLECTUAL PROPERTY WARS FROM GUTENBERG TO GATES* 275–78 (2009).

¹⁰⁵ *Id.* at 271. Similar arguments underpin the success of the free culture movement, discussed *infra* Part III.

¹⁰⁶ JOHNS, *supra* note 104, at 276.

¹⁰⁷ *Id.* at 275–77; U.S. CONST. art. I, § 8, cl. 8 ("The Congress shall have power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . ."); Copyright Act 1709, 8 Ann. c. 21 (Gr. Brit.). 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).

¹⁰⁸ JOHNS, *supra* note 104, at 277 (quoting *The Paris Exposition and the Patent Laws*, N. BRIT. REV., Nov. 1855–Feb. 1856, at 122, 139). 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 (quoting *Professor Rogers and Socialism*, SCI. REV., Oct. 1, 1865, at 121).

¹⁰⁹ *Id.* at 277 (quoting *The Paris Exposition and the Patent Laws*, *supra* note 108, at 139).

After a century of dormancy, the term “IP” reemerged in the late 1960s.¹¹⁰ So did debates over its scope that continue today.¹¹¹ 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.¹¹² Drawing on works by Charles Cronin and Claire 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 perfumers—unsatisfying.¹¹³

This Part 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.¹¹⁴ Colors are capable of operating as trademarks, as demonstrated in Section II.A.1. 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. Section II.A.2

¹¹⁰ 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, 1296–303 (2012) (confirming it).

¹¹¹ See *infra* Part III.

¹¹² The lack of definitional clarity is one critique levied against the term “IP.” See *Intellectual Property: The Term*, ELEC. FRONTIER FOUND., <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 property rights. For a deeper dive into that debate, see Amanda Levendowski, *Hard Truths About Soft IP*, COLUM. L. REV. F. (forthcoming 2024) (manuscript at 2 n.8), <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=3534&context=facpub> [https://web.archive.org/web/20240219175014/https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=3534&context=facpub].

¹¹³ 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 IP Protections for Fragrances* [hereinafter Cronin, *Law and Odor*], in NON-CONVENTIONAL COPYRIGHT 340 (Enrico Bonadio & Nicola Lucchi eds., 2018); CLAIRE GUILLEMIN, *LAW & ODEUR: FRAGRANCE PROTECTION IN THE FIELDS OF PERFUMERY AND COSMETICS* (Schriften zum geistigen Eigentum und zum Wettbewerbsrecht No. 80, 2016).

¹¹⁴ *What Is a Trademark?*, *supra* note 32. For a deeper dive into the history of trademark law, see FRANK I. SCHECHTER, *THE HISTORICAL FOUNDATIONS OF THE LAW RELATING TO TRADE-MARKS* (1925), and Daniel M. McClure, *Trademarks and Competition: The Recent History*, 59 LAW & CONTEMP. PROBS. 13 (1996).

documents another unsettled form of protection for perfume odor: copyright. Copyright covers original works of authorship that are “fixed in any tangible medium of expression,” such as paintings, photographs, poems, plays—and, in some jurisdictions, perfumes.¹¹⁵ 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.¹¹⁶

But IP protects other aspects of perfumes. Section II.A.3.a discusses how patents shield inventions, such as new and useful processes for isolating or engineering molecules.¹¹⁷ Musky civetone, along with powdery florals and icy aldehydes, combine to create the iconic odor of Chanel N° 5.¹¹⁸ 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.¹¹⁹ And as Section II.A.3.b deconstructs, perfume formulas can be concealed through trade secrecy.¹²⁰ What was once a go-to protection for the perfume industry has waned with the advent of new technologies, however.¹²¹ 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, in practice, generally by competitors.¹²² As a side effect of the industry’s extreme reliance on trade secrecy, aspiring perfumemakers are left with limited access to formulas to sample and learn by 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.

¹¹⁵ 17 U.S.C. § 102(a) (defining copyrightable works); see also *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* Section II.B.

¹¹⁶ Cronin, *Genius in a Bottle*, *supra* note 113, at 437–42, 438 n.53.

¹¹⁷ See 35 U.S.C. § 101.

¹¹⁸ 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>].

¹¹⁹ See *infra* note 315 and accompanying text; Chandler Burr, *Ahhh, 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://web.archive.org/web/20221126025132/https://www.nytimes.com/2008/02/23/business/worldbusiness/23perfume.html>].

¹²⁰ See *infra* Section II.A.3.b.

¹²¹ Cronin, *Lost and Found*, *supra* note 10, at 263–71.

¹²² See *Certified Pre-Owned GC/MS Instruments*, AGILENT, <https://www.agilent.com/en/product/certified-pre-owned-instruments/certified-chromatography-ms-instruments/gc-ms-instruments-refurbished> [<https://perma.cc/6ZSY-6SEQ>]; Cronin, *Lost and Found*, *supra* note 10, at 270–73.

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. This 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.¹²³ Bottles and fonts can be just as recognizable as the juice itself, and they are often customers' first engagement with fragrance.¹²⁴ Chanel routinely uses trade dress to protect its Chanel N° 5 fragrance from counterfeiting.¹²⁵ These alternate modes of IP protection do not govern the “juice” or generally affect aspiring perfumers—which is the central focus of this Section.

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, 1959.¹²⁶ But even prior to registration, Chanel accrued rights in the perfume's name.¹²⁷ Many trademark rights exist as soon as sellers use their trademarks in commerce, which Chanel began doing in the

¹²³ Cronin, *Lost and Found*, *supra* note 10, at 294–303; Press Release, U.S. Customs & Border Prot., Counterfeit Perfume Seizures Total \$51 Million (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 (Eng.) (holding that European Court of Justice judgment meant that a dupe company took unfair advantage of L'Oréal's trademarks when used descriptively on packaging). 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).

¹²⁴ Rosin Interview, *supra* note 23.

¹²⁵ *E.g.*, *Chanel Prevails in Unfair Competition Case Over Its NO 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 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>].

¹²⁶ CHANEL NO 5, Registration No. 701,978. The registration is in Class 3, which covers 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), and Amanda Levendowski, *Dystopian Trademark Revelations*, 55 CONN. L. REV. 681 (2023).

¹²⁷ See *Why Register Your Trademark?*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/trademarks/basics/why-register-your-trademark> [<https://perma.cc/5EBU-42NJ>].

1920s.¹²⁸ 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.¹²⁹ Unlike other forms of IP, such as copyright and patent, registered and enforced trademark rights can extend indefinitely.¹³⁰ But registrations require renewal through evidence that the mark remains in use.¹³¹ 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.¹³²

In 2020, Chanel submitted its renewal specimen depicting the CHANEL N° 5 mark for its parfum.¹³³ 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.¹³⁴ Some perfumers, including Chanel, consider color when 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.”¹³⁵

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

¹²⁸ 15 U.S.C. § 1125(c) (providing that unregistered marks can be protected from infringement, dilution, and tarnishment); *id.* § 1125(d) (providing that unregistered marks can be protected from cybersquatting); MAZZEO, *supra* note 93, at 85, 95–96.

¹²⁹ *Matal v. Tam*, 582 U.S. 218, 226–27 (2017).

¹³⁰ *See* 15 U.S.C. § 1058(a).

¹³¹ *Id.* § 1058(b).

¹³² TMEP § 904.07(a) (Nov. 2023); *id.* § 1606.04; 15 U.S.C. § 1059.

¹³³ *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://web.archive.org/web/20240227214842/https://tsdr.uspto.gov/documentviewer?caseId=sn72084287&docId=S8920200410152857&linkId=3#docIndex=2&page=1>]. 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>]; *see also Difference Between Eau de Parfum vs. Eau de Toilette*, YSL BEAUTY AUSTR., <https://www.yslbeauty.com.au/beauty-guides/fragrance-guides/the-difference-between-edp-and-edt.html> (last visited Feb. 27, 2024).

¹³⁴ Deborah R. Gerhardt & Jon McClanahan Lee, *Owning Colors*, 40 CARDOZO L. REV. 2483, 2500 (2019) (presenting survey data showing that gold is the color most strongly associated with luxury). Fun fact: during my interview with Sarah McCartney, I smelled Chanel N° 5 from 1947—the color was nearly fluorescent orange. McCartney Interview, *supra* note 12.

¹³⁵ Virtual Interview with Michael Nordstrand, Perfumer (Aug. 14, 2023) [hereinafter Nordstrand Interview].

in 1266.¹³⁶ For centuries, however, color alone simply could not be registered as a trademark in the United States.¹³⁷ 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, the trademark 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.”¹³⁸ The Supreme Court was quite clear: color applied to entire goods was not protectable.¹³⁹

That changed when Congress enacted the Trademark Act of 1946, better known as the Lanham Act.¹⁴⁰ In doing so, Congress expanded trademark registration to include slogans, sounds, and, for the first time, possibly colors.¹⁴¹ A subsequent duo of Supreme Court cases about insulation foam and dry cleaning press pads determined whether iconic shades are protectable as trademarks.¹⁴²

In 1980, the 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.¹⁴³ The company sought to make its insulation stick in consumers’ minds by spending \$42 million

¹³⁶ *Trademarks Past and Present*, WIPO MAG., Mar. 2005, at 8, 8.

¹³⁷ See, e.g., Paul Duguid, *California Marking & Collective Amnesia*, 47 U.C. DAVIS L. REV. 581 (2013) (discussing California’s first state-based trademark registration system, which did not include colors as qualifying trademarks); 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., 2010); Mark P. McKenna, *Trademark Law’s Faux Federalism*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW* 288, 289–92 (Shyamkrishna Balganes, ed., 2013).

¹³⁸ *A. Leschen & Sons*, 201 U.S. at 171.

¹³⁹ *Id.* at 171–72.

¹⁴⁰ Ch. 540, 60 Stat. 427 (codified as amended in scattered sections of 15 U.S.C.).

¹⁴¹ See *In re Owens-Corning Fiberglas Corp.*, 774 F.2d 1116, 1119–20 (Fed. Cir. 1985).

¹⁴² 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. See *Pantone Connect: Find a Pantone Color*, PANTONE, <https://www.pantone.com/pantone-connect> [<https://perma.cc/S4NK-Z5XL>].

¹⁴³ *Owens-Corning*, 774 F.2d at 1118.

on advertising during primetime television.¹⁴⁴ Sticking with precedent, the examining attorney denied the registration and the Trademark Trial and Appeal Board, which reviews examiners' determinations, affirmed it.¹⁴⁵

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.¹⁴⁶ 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.¹⁴⁷ 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.”¹⁴⁸ 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.”¹⁴⁹ Her conclusion was consistent with a prior Supreme Court decision that had 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.”¹⁵⁰ 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, and (3) whether the design achieves economies in manufacture or use.”¹⁵¹ Applying these factors, the Federal Circuit held that “the color ‘pink’ has no utilitarian purpose, does not deprive

¹⁴⁴ *Id.* at 1125–26. 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.

¹⁴⁵ *Id.* at 1118; see also *In re Gen. Petroleum Corp. of Cal.*, 49 F.2d 966, 970 (C.C.P.A. 1931) (denying registration for violet gasoline); *In re Sec. Eng’g Co.*, 113 F.2d 494, 497 (C.C.P.A. 1940) (denying registration for blue-and-aluminum oil well reamers).

¹⁴⁶ *Owens-Corning*, 774 F.2d at 1120.

¹⁴⁷ *Id.* at 1120–21.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Inwood Lab’ys, Inc. v. Ives Lab’ys, Inc.*, 456 U.S. 844, 850 n.10 (1982) (first citing *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 232 (1964); and then citing *Kellogg Co. v. Nat’l Biscuit Co.*, 305 U.S. 111, 122 (1938)).

¹⁵¹ *Owens-Corning*, 774 F.2d at 1121 (citing *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*, U.S. PAT. & TRADEMARK OFF. (Oct. 27, 2014, 9:09 AM), <https://www.uspto.gov/kids/team2.html> [https://perma.cc/CK4X-F3CU].

competitors of any reasonable right or competitive need, and is not barred from registration on the basis of functionality.”¹⁵²

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.¹⁵³ According to Judge Newman, the company demonstrated distinctiveness through a combination of all three, citing Owens-Corning’s decades of use; its 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.¹⁵⁴ 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.¹⁵⁵

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.¹⁵⁶ 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.¹⁵⁷ In 1991, Qualitex successfully registered “a particular shade of green-gold” as a mark for, in part, “press pads and covers for press pads for commercial and industrial presses.”¹⁵⁸ When a rival company began selling its own green-gold press pads, Qualitex sued them for trademark

¹⁵² *Owens-Corning*, 774 F.2d at 1122.

¹⁵³ 15 U.S.C. § 1052(f).

¹⁵⁴ *Owens-Corning*, 774 F.2d at 1125–27.

¹⁵⁵ *Id.* at 1128.

¹⁵⁶ *Compare* *NutraSweet Co. v. Stadt Corp.*, 917 F. 2d 1024, 1028 (7th Cir. 1990) (barring protection of color alone), *with* *Qualitex Co. v. Jacobson Prods. Co.*, 13 F.3d 1297 (9th Cir. 1994), *rev’d*, 514 U.S. 159 (1995), *Owens Corning*, 774 F.2d at 1128 (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).

¹⁵⁷ *Qualitex*, 514 U.S. at 161. The folks at Qualitex are aware of their status among trademark nerds, and they sent me a sample of their fabric on request (along with a lovely letter) while I was a teaching fellow at NYU Law.

¹⁵⁸ The mark consists of a particular shade of green-gold, Registration No. 1,633,711.

infringement.¹⁵⁹ In the Supreme Court decision’s opening paragraphs, Justice Stephen Breyer was unequivocal: “[T]here is no rule absolutely barring the use of color alone [as a trademark].”¹⁶⁰ 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.”¹⁶¹

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.”¹⁶² 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.”¹⁶³ Further, Justice Breyer confirmed that Qualitex’s customers did identify the green-gold press pads as the company’s, demonstrating distinctiveness.¹⁶⁴ The Court confirmed that “color alone, at least sometimes, can meet the basic legal requirements for use as a trademark.”¹⁶⁵ 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.¹⁶⁶

Post-*Qualitex*, several luxury companies successfully sought registrations for color marks, from LVMH’s Tiffany blue boxes to Louboutin’s red-soled shoes.¹⁶⁷ Could Chanel N° 5 gold be next? The

¹⁵⁹ *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).

¹⁶⁰ *Qualitex*, 514 U.S. at 162.

¹⁶¹ *Id.* at 166 (alteration in original) (quoting TMEP § 1202.04(e) (2d ed. 1993); *see also Owens Corning*, 774 F.2d at 1128.

¹⁶² *Qualitex*, 514 U.S. at 166.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ Gerhardt & McClanahan Lee, *supra* note 134, at 2505–20; Claire Guehenno, *Color War: The Louboutin Decision and Single-Color Marks in the Fashion Industry*, 4 HARV. J. SPORTS & ENT. L. 225, 232–38 (2013).

¹⁶⁷ The mark consists of a shade of blue often referred to as robin’s-egg blue which is used on boxes, Registration No. 2,359,351; the mark consists of a red lacquered outsole on footwear that contrasts with the color of the adjoining (“upper”) portion of the shoe, Registration No. 3,361,597. For a deeper dive into the lively litigation that permitted protection of Louboutin’s red soles—excepting on red shoes, like those of Yves Saint Laurent, for functionality reasons—see Guehenno, *supra* note 166, and Danielle E. Gorman, Note, *Protecting Single Color Trademarks in Fashion After Louboutin*, 30 CARDOZO ARTS & ENT. L.J. 369 (2012).

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.¹⁶⁸ 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.¹⁶⁹ While the cost of the ad is not known publicly, Chanel spent \$33 million 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.¹⁷⁰ 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° 5.¹⁷¹

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.¹⁷² Crude citrus oil is dark yellow; red mandarin is red; oakmoss is bottle green.¹⁷³ 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."¹⁷⁴ Because those ingredients reflect so-called utilitarian functionality, such shades are excluded from trademark protection.

¹⁶⁸ 1921: *Launch of Chanel N°5 Perfume*, CHANEL, <https://www.chanel.com/us/about-chanel/the-history/1920> [<https://perma.cc/S4ZR-2UXC>].

¹⁶⁹ CHANEL, *CHANEL N°5, the Film with Marion Cotillard—CHANEL Fragrance*, YOUTUBE (Oct. 29, 2020), <https://www.youtube.com/watch?v=qeMqcApmS7g> [<https://web.archive.org/web/20240114171949/https://www.youtube.com/watch?v=qeMqcApmS7g>].

¹⁷⁰ Rebecca Fulleylove, *This Chanel No.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*, YOUTUBE (Sept. 19, 2012), <https://www.youtube.com/watch?v=0hcaaKhGL00> [<https://web.archive.org/web/20240228001035/https://www.youtube.com/watch?v=0hcaaKhGL00&t=122s>].

¹⁷¹ *Pantone Connect: Find a Pantone Color*, *supra* note 142.

¹⁷² E-mail from Ashley Williams, D.S. & Durga, to Amanda Levendowski, Assoc. Prof. of L., Georgetown Univ. L. Ctr. (Mar. 20, 2023) (on file with author) ("[W]e did not add any color to our Pistachio.").

¹⁷³ Rosin Interview, *supra* note 23.

¹⁷⁴ *TraFFix Devices, Inc. v. Mktg. 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 Chem. Co. 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.¹⁷⁵ Today, Chanel identifies Yellow 5, Yellow 6, Red 33, and Red 4 among the perfume's ingredients.¹⁷⁶ 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,” but the hue has other competitive advantages.¹⁷⁷ Colorful perfumes can make a lasting impact. As American independent perfumer Joey Rosin observed, “Sometimes 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.”¹⁷⁸ Similarly, Chanel N° 5 is a distinctive gold, which—like the perfume and brand itself—consumers associate with luxury.¹⁷⁹ Other perfumes, like Viktor & Rolf's popular Flowerbomb, use additives to achieve a rosy hue that teases the floral rose note driving the fragrance.¹⁸⁰ 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 appropriate the rest.”¹⁸¹ In an industry where many perfumes fall into a limited range of clear, almond, gold, and amber shades, so-called “color

¹⁷⁵ 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.

¹⁷⁶ *N° 5 Eau de Parfum Spray*, *supra* note 133. The exact formula is likely a trade secret, discussed *infra* Section II.A.3.b.

¹⁷⁷ *TrafFix Devices*, 532 U.S. at 33 (citing *Qualitex*, 514 U.S. at 165).

¹⁷⁸ Rosin Interview, *supra* note 23.

¹⁷⁹ Gerhardt & McClanahan Lee, *supra* note 134, at 2500. 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.*

¹⁸⁰ *Flowerbomb Eau de Parfum*, VIKTOR&ROLF, 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 cocreated Flowerbomb while he worked at the composition house IFF. *Olivier Polge*, *supra* note 84. Flowerbomb's shade of pink is strikingly similar to Chanel Chance. Nordstrand Interview, *supra* note 135.

¹⁸¹ *Diamond Match Co. v. Saginaw Match Co.*, 142 F. 727, 729 (6th Cir. 1906).

depletion” is a concern for perfumeries.¹⁸² 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.”¹⁸³ 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.¹⁸⁴ Compared to colors, word depletion is a nonissue: 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.¹⁸⁵ 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.”¹⁸⁶ 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.”¹⁸⁷ 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 few shades of Chanel N° 5 gold.¹⁸⁸ To confront that

¹⁸² Litigants have raised color depletion as a defense. When asked why an alleged infringer adopted a particular color mark, the owner answered, “[W]e were running out of colors.” *Kasco Corp. v. S. 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).

¹⁸³ 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).

¹⁸⁴ Beth Sagar-Fenton & Lizzy McNeill, *How Many Words Do You Need to Speak a Language?*, BBC (June 23, 2018, 9:06 AM), <https://www.bbc.com/news/world-44569277> [<https://perma.cc/6N4N-7CHZ>].

¹⁸⁵ 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. 7,677,164 (filed Mar. 1, 2022). **Fun fact:** UPS’s 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, 9:00 AM), https://thehill.com/homenews/nexstar_media_wire/3591855-brown-wasnt-always-upss-color-heres-why-it-is-now [<https://perma.cc/EC3P-W6FD>].

¹⁸⁶ *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 168 (1995).

¹⁸⁷ *Id.* (citing *In re Owens-Corning Fiberglass Corp.*, 774 F.2d 1116, 1121 (Fed. Cir. 1985)).

¹⁸⁸ 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.

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.”¹⁸⁹

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.¹⁹⁰ 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.”¹⁹¹

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 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 unwanted attention from others. Perfumeries’ rights in color marks for fragrances are unlikely, but that has yet to be clearly 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.¹⁹² As McCartney summarized,

1131, 1141–42 (2009). Courts do not care much for that argument, either. See *Qualitex*, 514 U.S. at 167–68.

¹⁸⁹ *Qualitex*, 514 U.S. at 169.

¹⁹⁰ Musc Ravageur, Carnal Flower, Noir Epices, and Rose Tonnerre are select examples. *Perfumes Collection*, EDITIONS DE PARFUMS FREDERIC MALLE, <https://www.fredericmalle.com/products/19566/perfume> [<https://perma.cc/W453-5UBW>].

¹⁹¹ Justin Hughes, *Cognitive and Aesthetic Functionality in Trademark Law*, 36 CARDOZO L. REV. 1227, 1233 (2015); see also *Perfumes Collection*, *supra* note 190. 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. *Pagliero 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 Hughes, *supra*, and A. Samuel Oddi, *The Functions of ‘Functionality’ in Trademark Law*, 22 HOUS. L. REV. 925, 951–62 (1985).

¹⁹² If anything, the law was stacked against Owens-Corning, and it hardly favored Qualitex. See Hughes, *supra* note 191, at 1241–43, 1251.

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.¹⁹³

Ultimately, as Rosin quipped, the smell of the scent will provide the “most color.”¹⁹⁴

2. Odors as Copyrightable

As Ernest Beaux reflected, “[I]t is the aldehyde note that, since the creation of Chanel N° 5, has more than anything else influenced new **perfume compositions**.”¹⁹⁵ His fragrance is famed for its overwhelmingly icy top note, which comes from those aldehydes.¹⁹⁶ There are many types of aldehydes, some that smell fatty, others burnt, and still more floral. The aldehydes in Chanel N° 5 **smell to many people like “winter.”**¹⁹⁷ By incorporating previously unimagined quantities of aldehydes into novel combinations to produce Chanel N° 5, Beaux created an odor that both made and changed history.¹⁹⁸

Some odors can be registered as trademarks.¹⁹⁹ The first American scent mark was registered in 1991 for “a high impact, fresh floral fragrance reminiscent of plumeria blossoms” for embroidery thread.²⁰⁰ Other scent marks protect the “sweet, slightly musky, vanilla fragrance, with slight overtones of cherry, combined with the smell of a salted, wheat-based dough” of Play-Doh molding clay and the “flowery musk

¹⁹³ McCartney Interview, *supra* note 12.

¹⁹⁴ Rosin Interview, *supra* note 23.

¹⁹⁵ MAZZEO, *supra* note 93, at 67.

¹⁹⁶ *Id.* at 65. 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's Floramye, both from 1905. *Id.* at 67. Chanel N° 5 did not even popularize aldehydes—that distinction goes to Apres L'Ondée. *Id.*

¹⁹⁷ *Id.* at 63.

¹⁹⁸ *Id.* at 67.

¹⁹⁹ The “trademarkable” in the Section heading is a shorthand—one does not trademark a thing; one registers a trademark in a thing.

²⁰⁰ The mark is a high impact, fresh, floral fragrance reminiscent of plumeria blossoms, Registration No. 1,639,128. 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. The mark is a scene 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. Clarke's mark was later cancelled. The mark is a high impact, fresh, floral fragrance reminiscent of plumeria blossoms, Registration No. 1,639,128.

scent” of Verizon Wireless stores.²⁰¹ 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.”²⁰² 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.”²⁰³ Copyright owners are granted exclusive rights in their work, like the right of reproduction.²⁰⁴ Protection is robust, though not indefinite. In the United States, an author’s copyright lasts for their lifetime and extends seventy years beyond death.²⁰⁵ 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.”²⁰⁶ 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.²⁰⁷ French mainstream perfumery de Laire contracted with the luxury house of Rochas to create new scents for that house based on de Laire’s own formulas, which it disclosed to Rochas.²⁰⁸ The perfumery later alleged that Rochas infringed copyrights in the perfumes by manufacturing its own identical fragrances.²⁰⁹ While the court determined that de Laire’s formulas were not copyrightable, Claire Guillemin has argued that the court’s decision was largely attributable to two tactical errors.²¹⁰ First, she explained, the error of

²⁰¹ 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.

²⁰² TMEP § 1202.13 (Nov. 2023); *TraFFix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23, 24 (2001).

²⁰³ Cronin, *Genius in a Bottle*, *supra* note 113, at 429.

²⁰⁴ 17 U.S.C. § 106.

²⁰⁵ *Id.* § 302(a).

²⁰⁶ *Id.* § 102(a).

²⁰⁷ See Cronin, *Genius in a Bottle*, *supra* note 113, at 435.

²⁰⁸ *Id.* at 436.

²⁰⁹ *Id.*

²¹⁰ *Id.*; GUILLEMIN, *supra* note 113.

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.**²¹¹ This perception was amplified by a second error: the erasure of noses, the so-called **“authors” of perfumes.**²¹² **De Laire never named the perfumes’ noses in the litigation.**²¹³ Without evidence of authors whose personalities could be perceived through the perfumes, the court declined to extend copyright protection to de Laire’s perfumes.²¹⁴

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 nonexhaustive, leaving open the door to further attempts to seek copyright protection for perfumes.**²¹⁵

Multiple such attempts were made, with mixed results, over the decades.²¹⁶ But in a recent French Supreme Court case, copyrightability was again denied to perfume.²¹⁷ 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.**²¹⁸ 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 creators.”**²¹⁹ Even in France, the heart of the Western fragrance industry, perfumes are not protectable by copyright.

French courts did not settle perfume’s noncopyrightability for Europe, let alone globally. Rather, the Dutch Supreme Court has taken the opposite approach, holding that perfumes are more than industrial or

²¹¹ GUILLEMIN, *supra* note 113, at 157–58.

²¹² *Id.* at 158.

²¹³ *Id.*

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ For a deeper dive into perfume-related litigation in France, see Cronin, *Genius in a Bottle*, *supra* note 113, and Cronin, *Law and Odor*, *supra* note 113.

²¹⁷ Cronin, *Genius in a Bottle*, *supra* note 113, at 440–42.

²¹⁸ *Id.* at 441–42; see also Kamiel Koelman, *Copyright in the Courts: Perfume as Artistic Expression?*, WIPO MAG., Oct. 2006, at 2, 2.

²¹⁹ David A. Einhorn & Lesley Portnoy, *The Copyrightability of Perfumes: I Smell a Symphony*, INTELL. PROP. TODAY, Apr. 2010, at 8, 8 (quoting Cronin, *Genius in a Bottle*, *supra* note 113, at 427).

technical works because perfumes can bear the “personal imprint of the creator,” transforming scents into works of authorship.²²⁰

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.”²²¹ Facts, such as those contained in a phone book, could not qualify for copyright protection.²²² 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.”²²³

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?²²⁴

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, something very mathematical and analytical.”²²⁵ McCartney, however, views her fragrances as fleeting: “[A] bit more like kind of invisible sculpture or watercolors.”²²⁶

Artistic analogies aside, Ernest 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

²²⁰ Cronin, *Genius in a Bottle*, *supra* note 113, at 428 (discussing the Dutch Supreme Court opinion); *see also* Thomas G. Field, Jr., *Copyright Protection for Perfumes*, 45 IDEA 19 (2004).

²²¹ *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (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.”).

²²² *Feist*, 499 U.S. at 360.

²²³ *Id.* at 359 (citing *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903)).

²²⁴ Rosin Interview, *supra* note 23.

²²⁵ Nordstrand Interview, *supra* note 135.

²²⁶ McCartney Interview, *supra* note 12.

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.²²⁷ To some, including Beaux, aldehydes’ olfactory association with winter captured those experiences.²²⁸ 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.²²⁹ Rooted in her lover’s Russian heritage, Chanel may have shared an affinity for the crisp scent of winter air.²³⁰ 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.²³¹

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.²³² As Cronin reflected, however, “Whether a perfume may be a ‘work of authorship’ is a more subtle question than whether it may be fixed.”²³³ 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.”²³⁴ Importantly, fixation occurs when the work “can be perceived, reproduced, or otherwise

²²⁷ *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 93, at 56, 65.

²²⁸ MAZZEO, *supra* note 93, at 63, 65.

²²⁹ *Id.* at 57; 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>].

²³⁰ MAZZEO, *supra* note 93, at 57.

²³¹ 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>]. On Beaux’s reputation, see *Ernest Beaux*, FRAGRANTICA, https://www.fragrantica.com/noses/Ernest_Beaux.html [<https://perma.cc/WZ3U-XBWW>].

²³² Einhorn & Portnoy, *supra* note 219, at 8; *see also* Cronin, *Lost and Found*, *supra* note 10, at 277–79.

²³³ Cronin, *Genius in a Bottle*, *supra* note 113, at 451.

²³⁴ 17 U.S.C. § 101.

communicated, either directly or with the aid of a machine or device.”²³⁵ 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.²³⁶ 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).²³⁷ The Dutch court decision recognizes that the copyrightability of perfume is premised on the assumption that “*scents*” is entitled to protection under copyright law, as incorporated in the olfactory substance contained in the perfume bottles.”²³⁸

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.²³⁹ 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.²⁴⁰ 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.²⁴¹ But smelling from the bottle presents an even bigger problem: perfumes are not built for bottles. They’re built for bodies.²⁴²

Chanel has long recognized the intimate connection between scent and skin. So much that the luxury house inadvertently provided reason to reject the notion that fragrances are fixed. A 1959 Chanel N° 5 campaign adopted the slogan, “Chanel *becomes* the woman you are.”²⁴³ It cooed, “A perfume is different on different women because every woman has a skin chemistry all her own,” and continued, “Chanel

²³⁵ *Id.* §§ 101, 102(a).

²³⁶ INST. FOR ART & OLFACTION, *supra* note 60.

²³⁷ The French pronunciation of “sillage” approximates “see-yahz.” *Sillage*, LAROUSSE, <https://www.larousse.fr/dictionnaires/french-english/sillage/71952> [https://perma.cc/CK89-ULRM].

²³⁸ Herman Cohen Jehoram, *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) (quoting HR 16 juni 2006, NJ 2006, 585 m.nt JHS (Lancôme/Kecofa) (Neth.)).

²³⁹ Einhorn & Portnoy, *supra* note 219.

²⁴⁰ INST. FOR ART & OLFACTION, *supra* note 60.

²⁴¹ *Id.*

²⁴² AFTEL, FRAGRANT, *supra* note 55, at 3–4.

²⁴³ MAZZEO, *supra* note 93, at 189–90.

becomes you because it becomes *you*.”²⁴⁴ Differences in skin chemistry are underresearched, but variations can be introduced by pH balance, skin texture, diet, and environment.²⁴⁵ 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.”**²⁴⁶ 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.²⁴⁷ **Chanel’s advertisement marketed the fundamental, fleeting flexibility of fragrance, the very opposite of fixation.**

As Jeanne Fromer and Christopher 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.²⁴⁸ 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.²⁴⁹ **As Cronin explained, “Our ability to conjure and reproduce a scent is drastically inferior to our ability to do the same with an image or sound.”**²⁵⁰ 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 environment.”²⁵¹ Several interviewed perfumers echoed the sentiment that fragrance is fleeting.²⁵² 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.

²⁴⁴ *Id.* at 189. The extent to which this is biochemically accurate is disputed, but it remains a lively point of discussion (and marketing) among perfumers.

²⁴⁵ 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 113, at 461–62.

²⁴⁶ Nordstrand Interview, *supra* note 135.

²⁴⁷ 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).

²⁴⁸ JEANNE C. FROMER & CHRISTOPHER JON SPRIGMAN, COPYRIGHT LAW: CASES AND MATERIALS 18 (5th ed.). This casebook is open source under a Creative Commons license.

²⁴⁹ See Douglas Lichtman, *Copyright as a Rule of Evidence*, 52 DUKE L.J. 683, 731 (2003); Lydia Pallas Loren, *Fixation as Notice in Copyright Law*, 96 B.U. L. REV. 939, 959–60 (2016).

²⁵⁰ Cronin, *Genius in a Bottle*, *supra* note 113, at 446. He also objects to copyrightability for fragrances given the “dramatic difference[s] in human acuity among the senses,” which he discusses in greater depth. *Id.* at 444. See generally *id.* at 427–47.

²⁵¹ Einhorn & Portnoy, *supra* note 219, at 8 (quoting HR 16 Juni 2006, NJ 2006, 585 m.nt JHS (Lancôme/Kecofa) (Neth.)).

²⁵² McCartney Interview, *supra* note 12; Charra Interview, *supra* note 96.

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.²⁵³ 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.”²⁵⁴ 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.”²⁵⁵ 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.”²⁵⁶ 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.”²⁵⁷ Animal rights activists did hazard a guess, however, and Leal’s remarks sparked decades of protest regarding Chanel’s use of the civet cats’ secretion, also called civet.²⁵⁸

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.²⁵⁹ At low concentrations, the liquid produces a smoky, musky scent that lends complexity and longevity to perfumes.²⁶⁰ The unusual odor complements other scents while remaining potent as a standalone note. Several niche

²⁵³ 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>]; see also Bryon Jensen, *Skunks with a \$35 Smell*, PROVO DAILY HERALD, July 16, 1972, at 36.

²⁵⁴ Jensen, *supra* note 253, at 36. 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).

²⁵⁵ Jensen, *supra* note 253.

²⁵⁶ *Id.*

²⁵⁷ *Id.* Fact check: Chinese perfumers were not the first to pioneer using civet; that distinction belongs to Arabic perfumers from the tenth century. *Civet*, THE PERFUME SOC’Y, <https://perfumesociety.org/ingredients-post/civet> [<https://perma.cc/7F3E-EHNB>].

²⁵⁸ *A Boycott of Chanel N° 5 Urged by Humane Groups*, N.Y. TIMES, Apr. 15, 1973, at 48; *Is the Secret Behind Chanel No. 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. AFTEL, ESSENCE AND ALCHEMY, *supra* note 59, at 86–89.

²⁵⁹ And its disturbing origin.

²⁶⁰ AFTEL, ESSENCE AND ALCHEMY, *supra* note 59, at 88–89.

perfumes, including Zoologist's Civet and Meleg's Civet Cat Chypre, even celebrate civet by making it the focal note in their fragrances.²⁶¹

But civet is a complicated smell. At higher concentrations, the odor veers away from curiously compelling into what Mandy Aftel evocatively dubs “faecal floral.”²⁶² That scatological scent largely comes from a chemical called civetone ((9Z)-Cycloheptadec-9-en-1-one), initially isolated by chemist Erwin Sack in 1915.²⁶³ Civet's distinctive smell also comes from smaller amounts of indole (2,3-benzopyrrole) and skatole (3-methylindole).²⁶⁴ Indole is a prominent feature of orchids, jasmine, and decaying corpses; skatole is found in mammals' feces.²⁶⁵ Given these components of civet's chemical composition, it is unsurprising that the unadulterated odor is unabashedly funky.²⁶⁶

Today, civet used in perfumes is almost always synthetic—including the civet in Chanel N° 5, as of 1998.²⁶⁷ 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

²⁶¹ *Zoologist Civet Deluxe Bottle*, ZOOLOGIST, <https://www.zoologistperfumes.com/products/civet> [<https://perma.cc/4QF3-XG7V>]; *Civet Cat Chypre 50ml*, MELEG, <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.

²⁶² 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.*

²⁶³ *Civetone*, 18 PERFUMERY & ESSENTIAL OIL REC. 156 (1927).

²⁶⁴ Danute Pajaujis Anonis, *Civet and Civet Compounds*, PERFUMER & FLAVORIST, Jan./Feb. 1997, at 43, 44–45; BURR, *supra* note 46, at 19.

²⁶⁵ Anonis, *supra* note 264, at 45; Julia Ciesla et al., *The Smell of Death. State-of-the-Art and Future Research Directions*, 14 FRONTIERS MICROBIOLOGY, art. no. 1260869, at 1, 3 (2023); *Molecule of the Week Archive: Skatole*, AM. CHEM. SOC'Y (Mar. 6, 2012), <https://www.acs.org/molecule-of-the-week/archive/s/skatole.html> [<https://perma.cc/2Q6Q-HH3F>].

²⁶⁶ *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 Camera Traps*, SCI. AM. (Oct. 10, 2013), <https://blogs.scientificamerican.com/thoughtful-animal/youe28099II-never-guess-how-biologists-lure-jaguars-to-camera-traps> [<https://perma.cc/6R6J-LTUY>].

²⁶⁷ 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/QA5G-TDUJ>]. Synthetic materials 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://web.archive.org/web/20231122201225/https://www.nytimes.com/2006/08/27/style/tmagazine/t_w_1532_1697_face_perfume_.html].

composition of matter, or any new and useful improvement thereof.”²⁶⁸ Unlike other forms of IP, patent terms extend twenty years.²⁶⁹ However, like trademarks, prospective inventions must be filed with the U.S. Patent and Trademark Office publicly.²⁷⁰ This approach, as Lisa Larrimore Ouellette has explored, creates a “quid pro quo” in the patent system, in which “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).”²⁷¹ 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.²⁷² Most have expired, enabling perfumers and composition houses to use those methods freely.²⁷³

One of the most recently granted patents for synthesized civetone, however, remains in effect. In 2018, composition house Takasago applied

²⁶⁸ 35 U.S.C. § 101.

²⁶⁹ Gamesmanship among patent owners has effectively extended patent terms well beyond the mandated twenty 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://web.archive.org/web/20240208203046/https://www.nytimes.com/2023/09/14/business/ftc-drug-patents-inhalers.html>]; 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>].

²⁷⁰ *Patent Essentials*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/patents/basics/essentials#questions> [<https://perma.cc/LMW6-GQN9>].

²⁷¹ Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information?*, 25 HARV. J.L. & TECH. 545, 556–57 (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, *Policy Experiments to Address Gender Inequality Among Innovators*, 57 HOUS. L. REV. 813, 814 (2020), Jordana R. Goodman, *SySTEM-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*, 25 YALE J. L. & TECH. 309 (2023), and Nina Srejsovic, *Computer Software Patents and Gendered Views of Programming as Drudgery and Innovation*, in *FEMINIST CYBERLAW* (Meg Leta Jones & Amanda Levendowski, eds., forthcoming June 2024). For a discussion of biases against women and people of color within the Patent Bar, which disproportionately excludes marginalized lawyers, see Elaine Spector & LaTia Brand, *Diversity in Patent Law: A Data Analysis of Diversity in the Patent Practice by Technology Background and Region*, LANDSLIDE, Sept./Oct. 2020, at 32, 35 (noting that there are more registered patent attorneys and agents named Michael than racially diverse women, who compose only 1.7% of registered patent attorneys and agents).

²⁷² U.S. Patent No. 2,790,005 (filed Dec. 9, 1955) (preparation of civetone and its homologs); U.S. Patent No. 3,070,625 (filed May 27, 1958) (process for the preparation of azelaic acid semi-ester suitable for making civetone dicarboxylic acid); U.S. Patent No. 3,235,601 (filed Nov. 5, 1962) (process for the production of civetone and homologues). However, the first identifiable patent for synthesizing civetone is Swiss, dating back to 1928. CH No. 136,543 (process for preparing civetone).

²⁷³ ’005 Patent; ’625 Patent; ’601 Patent.

to patent its “invention relate[d] to recombinant microorganisms and methods for producing macrocyclic ketones and macrocyclic ketone precursors.”²⁷⁴ 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.²⁷⁵ Synthetic musk also happens to be an important base note in Chanel N° 5.²⁷⁶

Such synthetics can be valuable to those who 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.²⁷⁷ The molecule is considered indistinguishable from natural musk, yet no deer are harmed in its making.²⁷⁸ Just a small amount of 1-muscone produces a significant olfactory impact.²⁷⁹ Ernest Beaux would almost certainly approve of its adoption by Chanel. “Henceforth, . . . it will be the responsibility of 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.”²⁸⁰

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,” perfumemakers rarely avail themselves of those paths to protection.²⁸¹ As Cronin explained,

[T]he 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

²⁷⁴ U.S. Patent Application No. 16/760,710 (filed Nov. 1, 2018).

²⁷⁵ *Id.*

²⁷⁶ Matvey Yudov, *Chanel N°5: What Makes It What It Is?*, FRAGRANTICA (Oct. 21, 2021, 9:48 PM), <https://www.fragrantica.com/news/Chanel-5-What-Makes-It-What-It-Is-15705.html> (last visited Mar. 1, 2024).

²⁷⁷ U.S. Patent Application No. 15/197747 (filed June 29, 2016); Burr, *supra* note 119.

²⁷⁸ 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*, SCI. REPS., art. no. 4895, at 1, 1 (2019).

²⁷⁹ Burr, *supra* note 119.

²⁸⁰ Cronin, *Genius in a Bottle*, *supra* note 113, at 434 (quoting ELISABETH BARILLÉ & CATHERINE LAROZE, *THE BOOK OF PERFUME* 51 (Tamara Blondel trans., 1995)).

²⁸¹ 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 nineteenth century. *THE BIG BOOK OF PERFUME: FOR AN OLFACTORY CULTURE* 65 (Jeanne Doré ed., 2020).

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.²⁸²

Alexandre Charra and Michael Nordstrand, as well as perfume writer Chandler Burr, note that perfumemakers dub this phenomenon “captivity,” which gives rise to so-called “captive molecules.”²⁸³ 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.²⁸⁴

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.²⁸⁵ By investing millions of dollars into developing new captives—which Nordstrand describes as “a layer on top of patent”²⁸⁶—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 are generally unavailable to perfumers.²⁸⁷ 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-muscone is very much “a luxury material . . . costing high four figures per pound.”²⁸⁸ 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.²⁸⁹

b. Formulas as Trade Secrets

Ernest 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.²⁹⁰ Henri Robert must

²⁸² Cronin, *Lost and Found*, *supra* note 10, at 274.

²⁸³ Charra Interview, *supra* note 96; Nordstrand Interview, *supra* note 135; Burr, *supra* note 119.

²⁸⁴ Marin Kristic, *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].

²⁸⁵ Burr, *supra* note 119.

²⁸⁶ Nordstrand Interview, *supra* note 135.

²⁸⁷ Burr, *supra* note 119.

²⁸⁸ *Id.*

²⁸⁹ Nordstrand Interview, *supra* note 135.

²⁹⁰ MAZZEO, *supra* note 93, at 92–94.

have used it when he became Chanel's in-house nose.²⁹¹ And Jacques Polge, Chanel's third nose, sampled it to create a lighter version in the 1980s.²⁹² "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, but some aspects of N° 5's composition are no secret.²⁹³ The fragrance's funky animalistic notes, such as civet and musk, are famous.²⁹⁴ Chanel highlights aldehydes, rose, jasmine, citrus, and bourbon vanilla in their Chanel N° 5 marketing materials.²⁹⁵ Perfume enthusiasts routinely crowdsource 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
*Base Notes: civet, musk, amber, sandalwood, vanilla, moss, vetiver, patchouli.*²⁹⁶

However, notes are not a formula. The Chanel N° 5 formula includes the proportions and often the 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.²⁹⁷ In contemporary perfumery, that secrecy takes the form of intellectual property. Perfume formulas can be shielded as trade secrets, not unlike Carthusian monks' formula for their Chartreuse liquor.²⁹⁸ Trade secret law protects confidential

²⁹¹ 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. *Id.*

²⁹² Erin Dixon, *A Portrait of Chanel N°5*, DEPARTURES, <https://www.departures.com/wellness/chanel-no-5-olivier-polge-grasse-france> [<https://perma.cc/G5UL-W4RE>]. 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.*

²⁹³ 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.*

²⁹⁴ Jensen, *supra* note 253.

²⁹⁵ *N° 5 Eau de Parfum Spray*, *supra* note 133.

²⁹⁶ *Chanel No 5 Parfum Chanel*, FRAGRANTICA, <https://www.fragrantica.com/perfume/Chanel/Chanel-No-5-Parfum-Chanel-28711.html> [<https://perma.cc/349X-ESYV>]. Notes confirmed by Chanel or identified by other cited sources are italicized.

²⁹⁷ Cronin, *Lost and Found*, *supra* note 10, at 267.

²⁹⁸ 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

information from (mis)appropriation.²⁹⁹ 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.”³⁰⁰ Unlike most other forms of intellectual property law, trade secret law was long governed by state law, and nearly every state, district, and territory has 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.³⁰¹ Widespread adoption of the UTSA, as Sharon Sandeen has documented, served to streamline complex common law.³⁰²

Then, in 2016, Congress enacted the Defend Trade Secrets Act of 2016 (DTSA), which borrowed language from the UTSA to create the first federal civil trade secret law.³⁰³ 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, another person who can obtain economic value from its disclosure or use” when the information is, in the language of the UTSA, “the subject of efforts that are reasonable

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 Co.*, 221 U.S. 580, 586–89 (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://web.archive.org/web/20240117014346/https://www.nytimes.com/2020/12/17/business/chartreuse-monks-coronavirus.html>]. 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>].

²⁹⁹ 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).

³⁰⁰ *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481 (1974); see also 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).

³⁰¹ *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 form of IP, is likewise governed by state law. *Right of Publicity*, INT’L TRADEMARK ASS’N, <https://www.inta.org/topics/right-of-publicity> [<https://perma.cc/79KU-NPUH>]. For a deeper dive into the right of publicity, see JENNIFER E. ROTHMAN, *THE RIGHT OF PUBLICITY: PRIVACY REIMAGINED FOR A PUBLIC WORLD* (2018).

³⁰² Sandeen, *supra* note 299, at 520.

³⁰³ Pub. L. No. 114-153, 130 Stat. 376 (codified as amended at 18 U.S.C. §§ 1832–1839).

under the circumstances to maintain its secrecy.”³⁰⁴ 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.”³⁰⁵

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.”**³⁰⁶ 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.³⁰⁷ 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 Act.³⁰⁸ 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 precluding carcinogenic ingredients.**³⁰⁹ If all these demands were taken at face value, perfumers might be required to release their full formulas.

³⁰⁴ 18 U.S.C. § 1839(3). The language draws heavily from the UTSA. UNIF. TRADE SECRETS ACT § 1(4) (UNIF. L. COMM’N 1985).

³⁰⁵ Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1622 (2011).

³⁰⁶ See INT’L FRAGRANCE ASS’N, VALUABLE YET VULNERABLE: TRADE SECRETS IN THE FRAGRANCE INDUSTRY (2013), [https://ifrafragrance.org/docs/default-source/policy-documents/23340_pp_2013_10_07_valuable_yet_vulnerable__trade_secrets_in_the_fragrance_industry-\(1\).pdf?sfvrsn=f15061e5_0](https://ifrafragrance.org/docs/default-source/policy-documents/23340_pp_2013_10_07_valuable_yet_vulnerable__trade_secrets_in_the_fragrance_industry-(1).pdf?sfvrsn=f15061e5_0) [[https://web.archive.org/web/20210627150333/https://ifrafragrance.org/docs/default-source/policy-documents/23340_pp_2013_10_07_valuable_yet_vulnerable__trade_secrets_in_the_fragrance_industry-\(1\).pdf?sfvrsn=f15061e5_0](https://web.archive.org/web/20210627150333/https://ifrafragrance.org/docs/default-source/policy-documents/23340_pp_2013_10_07_valuable_yet_vulnerable__trade_secrets_in_the_fragrance_industry-(1).pdf?sfvrsn=f15061e5_0)].

³⁰⁷ Directive 2003/15, 2003 O.J. (L 66) 26, 28–29 (EC).

³⁰⁸ Ch. 315, § 3, 2020 Cal. Stat 3697, 3698–701.

³⁰⁹ *Radical Fragrance Transparency*, CREDO BEAUTY, <https://credobeauty.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), <https://www.nytimes.com/2022/12/04/fashion/trends/perfume-sustainability-ffern-england.html> [<https://web.archive.org/web/20230323184616/https://www.nytimes.com/2022/12/04/fashion/trends/perfume-sustainability-ffern-england.html>] (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/>

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.³¹⁰ 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° 5.³¹¹

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.³¹² 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 . . . allow[ing] the perfumers’ know-how to remain a secret, as they are exclusive materials that make the character of the composition unique.”³¹³ The licensee was joined by leading composition houses International Flavors & Fragrances and Firmenich in their collective efforts “to be more transparent about the composition of [their] fragrances in response to growing demand from consumers, NGOs and retailers for better information about product composition.”³¹⁴

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 materials, which are identified by chemical composition, plain language description, and classified by fragrance family.³¹⁵ Despite these transparent disclosures,

[<https://perma.cc/39PC-XGZN>] (detailing why labels using only “fragrance” can obfuscate dangerous ingredients from the public).

³¹⁰ Cronin, *Lost and Found*, *supra* note 10, at 280; *see also* INT'L FRAGRANCE ASS'N, *supra* note 306, at 7–8.

³¹¹ N° 5 *Parfum*, CHANEL, <https://www.chanel.com/us/fragrance/p/120150/n5-parfum> [<https://perma.cc/WH6N-Y9MS>].

³¹² *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 II.B.3.

³¹³ *Our Policy of Transparency in Fragrances*, *supra* note 312; *see also* Nudelman, *supra* note 309. Of course, the brand discloses allergens, as required, even if they are not “necessary” to the transparency initiative. *Our Policy of Transparency in Fragrances*, *supra* note 312.

³¹⁴ *Our Policy of Transparency in Fragrances*, *supra* note 312. 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>].

³¹⁵ *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 Takasago's 1-muscone captive is not on the menu, Black Opium contains at least four “musk like” materials, including oxacyclohexadecen-

Yves Saint Laurent continues to sell upwards of 887 bottles of Black Opium each day.³¹⁶

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.³¹⁷ Neither knockoffs nor counterfeits, dupes are often nearly identical chemical copies of popular perfumes sold by third-party corporations.³¹⁸ 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.³¹⁹ 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 \$355.³²⁰ 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.³²¹ Expert noses can reverse engineer complex scents, like N°5, by smell alone; doing so was often part of their training.³²² Without comprehensive formulas to follow, however, aspiring perfumemakers 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

2-one (a soft woody, powdery musk) and 3-methylcyclopentadecenone (an elegant, soft musk with "animalic inflection"). *Id.*

³¹⁶ Blake Newby, *The Story Behind YSL Black Opium—& Why It Sells 887 Bottles Each Day*, 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>].

³¹⁷ 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>].

³¹⁸ *Id.*

³¹⁹ Erin Jahns, *I Tested Dossier's Under-\$55 Dupes for Le Labo, Chanel, and More—These Impressed*, WHO WHAT WEAR (Mar. 18, 2023), <https://www.whowhatwear.com/dossier-perfumes> [<https://perma.cc/T2NZ-WTCK>].

³²⁰ *N°5 Parfum*, *supra* note 311; *Floral Aldehydes*, DOSSIER, <https://dossier.co/products/floral-aldehydes> [<https://perma.cc/KPK9-JVZS>]. 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).

³²¹ *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).

³²² BURR, *supra* note 46, at 3–4.

chromatograph/mass spectrometers (GC/MS).³²³ 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.³²⁴ 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.³²⁵

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 \$48,000 or more, for analysis.³²⁶ That cost all but ensures that the technologies are only used by commercial perfumers. Aspiring perfumers cannot afford purchasing GC/MS machines to reverse engineer scents to sample—they even struggle to purchase raw ingredients.³²⁷ Further, Nordstrand noted that “it’s a job in its own entirety to learn how to interpret a GCMs

³²³ Olivia Su, Note, *Odor in the Courts! Extending Copyright Protection to Perfumes May Not Be So Nonscentical: An Investigation of the Legal Bulwarks Available for Fine Fragrances amid Advancing Reverse Engineering Technology*, 23 S. CAL. INTERDISC. L.J. 633, 672–79 (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.

³²⁴ ANDREW TIPLER & SHEILA ELETTO, PERKINELMER, THE CHARACTERIZATION OF PERFUME FRAGRANCES USING GC/MS, HEADSPACE TRAP AND OLFACTORY PORT (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 46, at 128.

³²⁵ Cronin, *Lost and Found*, *supra* note 10, at 271–72.

³²⁶ BURR, *supra* note 46, 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, <https://www.labx.com/item/agilent-7890-5975-c-7693-gc-ms-system/4343601> [<https://perma.cc/7TGM-KCE9>]; see also *supra* note 122 and accompanying text.

³²⁷ Denton-Hurst, *supra* note 18. Dawn Marie West began her fragrance career making candles because the materials were cheaper. *Id.*

correctly. And it's never 100% accurate," further limiting its usability by aspiring perfumers.³²⁸

Some noses resist GC/MS machines by loading their perfumes with inert natural ingredients that complicate the formula.³²⁹ One molecular distillation of rose, the May rose varietal that is central to Chanel N° 5, contains more than eighty molecules; different species' distillations could consist of up to a thousand molecules.³³⁰ 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, "If 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."³³¹

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 the Chanel N° 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.³³² 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. 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 perfumemakers have limited access to formulas that they are free to make and sample.³³³

³²⁸ Nordstrand Interview, *supra* note 135.

³²⁹ Some perfumers do not even share formulas with clients. *Id.*

³³⁰ Lauren Collins, *Fragrant Harvest*, NEW YORKER (Mar. 19, 2018), <https://www.newyorker.com/magazine/2018/03/19/fragrant-harvest> [<https://perma.cc/4W7J-Y677>]; BURR, *supra* note 46, at 263. Like Chanel's jasmine, its May rose is supplied exclusively by the Mul family in Grasse. Collins, *supra*.

³³¹ Jensen, *supra* note 317.

³³² Catherine Helbig, *Review of Chanel N° 5: Is It Worth the Hype?*, BYRDIE (Sep. 16, 2023, 4:33 PM), <https://www.byrdie.com/chanel-no-5-review-of-chanel-no-5-perfume-346120> [<https://perma.cc/GY5P-ZTSQ>].

³³³ Kim Parker, *To the Power of 5: Chanel No5 Celebrates Its 100th Birthday*, HARPER'S BAZAAR (June 9, 2021), <https://www.harpersbazaar.com/uk/beauty/a36553894/chanel-no5-100th-birthday> [<https://perma.cc/GD58-SGNP>].

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.³³⁴ The fragrance fades to rich florals, such as jasmine, iris, and rose, surrounded by curls of vanilla that could fill jazz halls.³³⁵ It settles into a warm, resinous amber that would not feel out of place at a Cubist salon.³³⁶ Jacques Guerlain was inspired by the profound passion between Shah Jahan and his wife, Mumtaz Mahal.³³⁷ Guerlain named the fragrance Shalimar after the Shalimar gardens that Shah Jahan built to impress his wife.³³⁸ 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 bestselling perfumes in history.³³⁹

While Guerlain's Shalimar aims to celebrate people of color, they are rarely represented in Western perfumery.³⁴⁰ "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.³⁴¹ "The traditions of perfumery are so tightly bound to Old World ideas of what a perfumer is that sometimes this breeds unconscious bias," Gonzalez concludes.³⁴²

³³⁴ This effect is called a "white-out." Thomas, *The Legend of Shalimar*, ESSENTUAL (Oct. 10, 2016, 10:53 AM), <https://www.escentual.com/blog/2016/10/10/the-legend-of-shalimar> [<https://perma.cc/A7GH-RJTW>].

³³⁵ *Shalimar Eau de Parfum*, GUERLAIN, <https://www.guerlain.com/us/en-us/p/shalimar-eau-de-parfum-P011355.html> [<https://perma.cc/673N-BUCP>].

³³⁶ Guerlain, *The Story of Shalimar*, YOUTUBE (Sept. 17, 2013), <https://www.youtube.com/watch?v=2XnK5RezGH0> [<https://web.archive.org/web/20231215112041/https://www.youtube.com/watch?v=2XnK5RezGH0>].

³³⁷ *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).

³³⁸ 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 INDUS. STYLE (Apr. 19, 2017), <http://www.vintageindustrialstyle.com/shalimar-guerlain-discover-vintage-fragrance> [<https://perma.cc/KCJ8-NB62>].

³³⁹ 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 every hour, lagging significantly behind Chanel N° 5 sales. *Id.*

³⁴⁰ 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 [with] 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.").

³⁴¹ Mazzone, *supra* note 17. She works at Givaudan. *Id.*

³⁴² *Id.*

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 nondiverse as you can possibly imagine.”³⁴³ Guerlain himself personifies the stereotype of a perfumer as a white, male nose who formally trained in France.³⁴⁴ **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.³⁴⁵ 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.**³⁴⁶ 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.”**³⁴⁷ The label quickly metastasized to become an entire fragrance family, which remains in widespread use today.³⁴⁸ While individual perfumers and advocacy organizations are resisting and retiring the term, marginalized perfumers **must navigate the word’s ubiquity.**

³⁴³ 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.*

³⁴⁴ 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 the “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>].

³⁴⁵ See *infra* Section II.B.2.

³⁴⁶ See *infra* Section II.B.2.

³⁴⁷ Guerlain, *supra* note 336.

³⁴⁸ EDWARDS, *supra* note 69, at 5 (uncritically identifying “Oriental” as a fragrance family). *But see* Jeb Gleason-Allured, [*Update*] *Goodbye ‘Oriental,’ Hello ‘Ambery,’* GLOB. COSMETIC INDUS. (June 22, 2021), <https://www.gcimagazine.com/brands-products/fragrance-home/news/21862163/update-goodbye-oriental-hello-ambery> [<https://perma.cc/3ZCA-3K8D>] (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 2020.³⁴⁹ Journalists, including Dianna Mazzone, Danielle Jackson, Alexandra Garfinkle, Tembe Denton-Hurst, and Laura Yan, drew attention to the marginalized perfumers who do exist and who are thriving.³⁵⁰ 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.³⁵¹ 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. Section B.1 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. Section B.2 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 Section B.3 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 seventeenth century, it found its center in a small town called Grasse.³⁵² Then, tanners covered the pungent stench of their wares by priming leather with perfumed

³⁴⁹ Ailsa Chang, Rachel Martin & Eric Marrapodi, *Summer of Racial Reckoning*, NPR (Aug. 16, 2020, 9:00 AM ET), <https://www.npr.org/2020/08/16/902179773/summer-of-racial-reckoning-the-match-lit> [https://perma.cc/6BXF-BVVL]. *But see* Michele L. Norris, Opinion, *Don’t Call It a Racial Reckoning. The Race Toward Equality Has Barely Begun*, WASH. POST (Dec. 18, 2020, 1:41 PM), https://www.washingtonpost.com/opinions/dont-call-it-a-racial-reckoning-the-race-toward-equality-has-barely-begun/2020/12/18/90b65eba-414e-11eb-8bc0-ae155bee4aff_story.html [https://perma.cc/GMA7-YNV2].

³⁵⁰ *See, e.g.*, Mazzone, *supra* note 17; Jackson, *supra* note 17; Garfinkle, *supra* note 17; Denton-Hurst, *supra* note 18; Laura Yan, *Stop Using the Term ‘Oriental’ to Sell Perfume*, MIC (Feb. 20, 2024), <https://www.mic.com/life/oriental-perfume-racist-legacy> [https://perma.cc/REU7-9Q5E].

³⁵¹ Garfinkle, *supra* note 17.

³⁵² 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.

pomades.³⁵³ Over time, the tanners abandoned their trade for perfumery because it was more profitable.³⁵⁴ It was then that perfumery became a family affair, an art passed from father to son.³⁵⁵ Today, Grasse—and France more generally—remains a self-proclaimed powerhouse in perfumery.³⁵⁶

Grasse boasts one of the most prestigious perfume training programs in the world: the Grasse Institute for Perfumery.³⁵⁷ Attending the Institute is expensive. Tuition costs \$15,000, exclusive of travel or lodging.³⁵⁸ It is exclusive. The Institute takes only twelve students a year.³⁵⁹ 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.³⁶⁰ 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.³⁶¹ “Classically trained perfumers are chosen by lineage, so getting into school or going abroad is really difficult.”³⁶² 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.³⁶³ 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.³⁶⁴ 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

³⁵³ *Id.*

³⁵⁴ *Id.*

³⁵⁵ Mazzone, *supra* note 17.

³⁵⁶ Perfumery is, however, becoming more global. See *Perfumery Schools*, BON PARFUMEUR, <https://www.bonparfumeur.com/blogs/journal/perfumery-schools> [https://perma.cc/59GQ-DHS2]; McCartney Interview, *supra* note 12; Charra Interview, *supra* note 96.

³⁵⁷ *Who We Are*, GRASSE INST. OF PERFUMERY, <https://www.grasse-perfumery.com/who-we-are> [https://perma.cc/Q8P7-9R4Q].

³⁵⁸ Denton-Hurst, *supra* note 18.

³⁵⁹ *Id.*

³⁶⁰ *Who We Are*, *supra* note 357; Denton-Hurst, *supra* note 18.

³⁶¹ Denton-Hurst, *supra* note 18.

³⁶² *Id.*

³⁶³ Delacourte, *supra* note 344. Fun fact: Guerlain’s brother designed the iconic Shalimar bottle, which looks like an opening fan. Guerlain, *supra* note 336.

³⁶⁴ Mazzone, *supra* note 17.

learn how to make [perfume]. And [the industry] is still dominated by an awful lot of white blokes.”³⁶⁵

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.³⁶⁶ She, like West and other marginalized perfumers, opted out of the industry’s gatekeeping. Walker took a year to study composition and chemistry by watching YouTube videos and reading articles before creating her own perfume line.³⁶⁷ 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.³⁶⁸ “[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.”³⁶⁹ In perfumery, that erasure has a legacy. “With respect to attribution,” Cronin has 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.³⁷⁰

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.³⁷¹ Niche perfumeries, like Kimberly New York, are changing this practice. Its founder, Kimberly Walker, noted

³⁶⁵ McCartney Interview, *supra* note 12.

³⁶⁶ Jackson, *supra* note 17. Kimberly New York 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].

³⁶⁷ Jackson, *supra* note 17.

³⁶⁸ *Id.*

³⁶⁹ Nordstrand Interview, *supra* note 135.

³⁷⁰ Cronin, *Genius in a Bottle*, *supra* note 113, at 453; Mpinja, *supra* note 19.

³⁷¹ *Santal 33*, *supra* note 1; *Santal 33 Le Labo*, *supra* note 62; Larkworthy, *supra* note 5.

that she “never encountered a brand led by a Black, female perfumer” in her decade-long tenure as a luxury fragrance sales manager.³⁷² Her branding is an antidote to erasure, with her name emblazoned on every bottle.³⁷³

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.³⁷⁴ Vodianova is a white celebrity, and most fragrance faces follow a similar pattern.³⁷⁵ 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.”³⁷⁶ Crenshaw responded by prominently featuring Black men and women in his advertising for his signature fragrance, Ovation for Men.³⁷⁷

Perfumery practices around attribution and advertising effectively eliminate the visibility of marginalized perfumers, which affects aspiring

³⁷² Mpinja, *supra* note 19.

³⁷³ *Ether for Men*, KIMBERLY NEW YORK, <https://www.kimberlynewyork.com/category/ether-for-men> [https://perma.cc/7HED-HPR2].

³⁷⁴ Guerlain, *supra* note 336.

³⁷⁵ See, e.g., Zoë Holloway, *16 New Fragrances with a Famous Face Attached*, BEAUTYDIRECTORY (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 colour. 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 colour 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 and Misty Copeland for Estée Lauder’s *Modern Muse* are other notable exceptions. Holloway, *supra*. Fun fact: unlike many celebrity fragrances, Grande’s is well regarded among beauty insiders as a refreshing, wearable delight. Rio Viera-Newton, *My Beauty-Industry Friends Are All 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].

³⁷⁶ Mpinja, *supra* note 19.

³⁷⁷ OVATION FOR MEN, <https://ovationfragrance.com> [https://perma.cc/M7LL-RFSR].

perfumemakers' abilities to identify role models in the industry. "There . . . 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.³⁷⁸ But not all perfumers are subject to erasure. That recent Shalimar advertising campaign centered and celebrated Guerlain's talents as a nose.³⁷⁹ And, of course, his family name is still emblazoned across all the house's perfumes and packaging.³⁸⁰

3. Nomenclature

Guerlain proudly pioneered using the classification "Oriental" to encapsulate Shalimar.³⁸¹ The term stuck. Over the past century, the word became an entire fragrance family unified by its persistent amber heart note and vaguely "exotic" ingredients.³⁸² It's difficult to overstate the term's ubiquity. An online search for "Oriental perfume" returns nearly fourteen million hits.³⁸³ Not only is the word offensive to many people—at the urging of Congresswoman Grace Meng, President Barack Obama eliminated the word from federal laws in 2016—the moniker is meaningless.³⁸⁴ Shalimar was not designed in Asia, developed by an Asian nose, or dependent on Asian materials. 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 . . ."³⁸⁵ These fragrances' only connection to Asia and Africa is through a colonialist

³⁷⁸ Jackson, *supra* note 17.

³⁷⁹ Guerlain, *supra* note 336.

³⁸⁰ *Women Fragrances*, GUERLAIN, <https://www.guerlain.com/us/en-us/fragrance/woman> [<https://perma.cc/SLC2-HELK>].

³⁸¹ Guerlain, *supra* note 336.

³⁸² AFTEL, FRAGRANT, *supra* note 55, at 52–53; *Ambree*, THE PERFUME SOC'Y, <https://perfumesociety.org/fragrance-families/ambree> [<https://perma.cc/4K7S-CBN3>].

³⁸³ The first page does include the *Harper's BAZAAR* piece critiquing the term. See Matlin, *supra* note 17.

³⁸⁴ 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>].

³⁸⁵ 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. *Yosh Omnistar*, OLFACTIF, <https://www.olfactif.com/products/omnistar> [<https://perma.cc/VY6E-B3AW>].

perspective of those continent's places and people as sensual, mystical, and mysterious.³⁸⁶ Han invited the public to join her and other perfumers to push back on the term publicly by cosponsoring a petition to rename the fragrance family, which has received more than one thousand signatures.³⁸⁷

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.”³⁸⁸ As a freelance consultant to independent perfumers, Kim combats the term’s use by contractually requiring her clients not to use it.³⁸⁹ Her approach works: every client has agreed.³⁹⁰

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.³⁹¹ 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.³⁹² 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.”³⁹³ 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.³⁹⁴

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

³⁸⁶ 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).

³⁸⁷ *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/JUR9-5TKD].

³⁸⁸ Yan, *supra* note 350.

³⁸⁹ *Id.*

³⁹⁰ *Id.*

³⁹¹ *Diversity, Equity & Inclusion*, THE FRAGRANCE FOUND. (Oct. 20, 2021), <https://fragrance.org/event/diversity-equity-inclusion> [https://perma.cc/673X-YVRJ].

³⁹² Garfinkle, *supra* note 17.

³⁹³ *Id.*

³⁹⁴ *Reclassify “Oriental” and “Floriental” in the Fragrance Industry*, *supra* note 387.

[i]t'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 style.³⁹⁵

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."³⁹⁶ Shinohara explains that "[t]his 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."³⁹⁷

Despite mounting critique of the word, retiring it is still resisted.³⁹⁸ Luxury house Yves Saint Laurent continues characterizing its bestselling Black Opium perfume, itself a controversial naming choice, as "a spicy Oriental harmony for extreme sensuality."³⁹⁹ While Guerlain itself retired

³⁹⁵ Emily Jensen, *Does "Oriental" Still Have a Place in Perfumery?*, MISSION, <https://missionmag.org/oriental-perfume-category-trend-history> [<https://perma.cc/9CPC-CNJ6>].

³⁹⁶ *Id.*

³⁹⁷ *Id.* A perfumemaker also suggested that Middle Eastern and North African perfumers might view the word and its heritage differently.

³⁹⁸ In the wake of George Floyd's murder, many companies responded to mounting public pressure and eliminated longstanding racist branding. See, e.g., Angela R. Riley & Sonia K. Katyal, Opinion, *Aunt Jemima Is Gone. Can We Finally End All Racist Branding?*, N.Y. TIMES (June 19, 2020), <https://www.nytimes.com/2020/06/19/opinion/aunt-jemima-racist-branding.html> [<https://web.archive.org/web/20230802022032/https://www.nytimes.com/2020/06/19/opinion/aunt-jemima-racist-branding.html>]; see also 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://web.archive.org/web/20231208001829/https://www.nytimes.com/2021/04/13/technology/racist-computer-engineering-terms-ietf.html>]. 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 (July 19, 2011), <https://www.newappsblog.com/2011/07/ableist-language-and-philosophical-associations.html> [<https://web.archive.org/web/20230127041431/https://www.newappsblog.com/2011/07/ableist-language-and-philosophical-associations.html>].

³⁹⁹ *Opium Eau De Toilette Spray*, YVES SAINT LAURENT, <https://www.yslbeautyus.com/fragrance/womens-fragrances/opium/opium-eau-de-toilette-spray/512YSL.html> [<https://web.archive.org/web/20231210200446/https://www.yslbeautyus.com/fragrance/womens->

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*.⁴⁰⁰

* * *

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. 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. Coordinated advocacy also documents how many parts of the industry are ready to retire colonialist, racist tropes. 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.⁴⁰¹ 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;

fragrances/opium/opium-eau-de-toilette-spray/512YSL.html]; 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.

⁴⁰⁰ *Les Absolus d’Orient Collection*, GUERLAIN, <https://www.guerlain.com/us/en-us/fragrance/woman/collections/les-absolus-dorient> [<https://perma.cc/H2WP-Z3C9>].

⁴⁰¹ *Mission*, INST. FOR ART & OLFACTION, <https://artandolfaction.com/about/mission> [<https://perma.cc/J9DT-UFN5>]; *Saskia Wilson-Brown*, INST. FOR ART & OLFACTION, <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.” *Id.*

and providing accessible education for aspiring perfumemakers.⁴⁰² 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-22.⁴⁰³ Attendee Shelley Ray crafted a scent described as giving “Persian cat in the boudoir.”⁴⁰⁴ Madeleine Stearns designed a fragrance inspired by the sensations of “stalking . . . prey for 30 hours. [N]ot too much sleep, hyperfocused and aware.”⁴⁰⁵ 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.”⁴⁰⁶ 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.”⁴⁰⁷ Valuing free information predates Brand’s pithy one-liner significantly. Libraries loaned resources to patrons for free over many centuries.⁴⁰⁸ The

⁴⁰² *Mission*, *supra* note 401.

⁴⁰³ *Open Source Smell Culture Formulas Database*, GOOGLE SHEETS, https://docs.google.com/spreadsheets/d/1U4XKFcUypBs0ruJybO9oXKNgls6_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*, L.A. TIMES (Dec. 17, 2022, 2:00 PM), <https://www.latimes.com/california/story/2022-12-17/p22-obituary-celebrity-mountain-lion-cougar-puma-griffith-park-california> [https://perma.cc/53EF-QFLU].

⁴⁰⁴ *Open Source Smell Culture Formulas Database*, *supra* note 403. While these perfumes are published using an open source license, the document disables downloading, printing, and copying, somewhat restricting its practical utility as “open.” *Id.*

⁴⁰⁵ *Id.*

⁴⁰⁶ *Id.*

⁴⁰⁷ 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. TELECOMMS. & TECH. L. REV. 75 (1996); Bruce R. Poquette, *Information Wants to Be Free*, 22 HAMLIN J. PUB. L. & POL’Y 175 (2000); R. Polk Wagner, *Information Wants to Be Free: Intellectual Property and the Mythologies of Control*, 103 COLUM. L. REV. 995 (2003).

⁴⁰⁸ *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]. 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, 1358–59 (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. COURTNEY, *A WHITE PAPER ON CONTROLLED DIGITAL LENDING OF LIBRARY BOOKS* (2018), <https://dash.harvard.edu/handle/1/42664235> [https://web.archive.org/

Supreme Court pronounced that its decisions were free to reproduce in 1834, a position affirmed more than a century later.⁴⁰⁹ 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.⁴¹⁰ 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.⁴¹¹

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.**⁴¹² 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.⁴¹³ Works already in the public domain, like the

web/20230413072321/https://dash.harvard.edu/bitstream/handle/1/42664235/White%20Paper%20on%20Controlled%20Digital%20Lending%20of%20Library%20Books.pdf?sequence=1&isAllowed=y] (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 one-to-one ratio); Kyle K. Courtney & Juliya Ziskina, *The Publisher Playbook: A Brief History of the Publishing Industry’s Obstruction of the Library Mission* (Mar. 14, 2023) (unpublished manuscript), <https://dash.harvard.edu/handle/1/37374618> [<https://web.archive.org/web/20231208161157/https://dash.harvard.edu/bitstream/handle/1/37374618/The%20Publisher%20Playbook%20Pre-Print%203.14.23.pdf?sequence=1&isAllowed=y>]. This Article was based on work by the Intellectual Property and Information Policy (iPIP) Clinic for Library Futures. The 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 publicly available.

⁴⁰⁹ *Wheaton v. Peters*, 33 U.S. 591 (1834) (rejecting publishers’ copyright protection claim for reporters’ transcriptions of Supreme Court decisions); *Georgia v. Public.Resource.Org*, 140 S. Ct. 1498, 1503–04 (2020) (rejecting copyright protection over laws incorporating annotations). While I was on research leave, the iPIP Clinic filed an amicus brief in *American Society for Testing & Materials v. Public.Resource.Org* on behalf of the American Federation of State, County and Municipal Employees, supporting Public Resource’s argument that standards ought to be incorporated into laws openly. *See generally* 82 F.4th 1262 (D.C. Cir. 2023).

⁴¹⁰ Pub. L. No. 89-487, 80 Stat. 250 (1966) (codified as amended at 5 U.S.C. § 552); *see also* 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).

⁴¹¹ *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). Other industries encounter battles over free information, but the publishing industry’s tension is perhaps the most perennial.

⁴¹² Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified as amended in scattered sections of 17 U.S.C.); *see also* Edward Rothstein, *The Owners of Culture vs. the Free Agents*, *N.Y. TIMES* (Jan. 18, 2003), <https://www.nytimes.com/2003/01/18/arts/connections-the-owners-of-culture-vs-the-free-agents.html> [<https://web.archive.org/web/20240103092216/https://www.nytimes.com/2003/01/18/arts/connections-the-owners-of-culture-vs-the-free-agents.html>].

⁴¹³ 17 U.S.C. § 302.

prescient robotic dystopia film *Metropolis*, were pushed back under copyright for twenty more years.⁴¹⁴ 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.⁴¹⁵ And works published in 1999, like Sugar Ray’s dirtbag earworm “Every Morning,” will not join the public domain until, at the earliest, 2093.⁴¹⁶ As a result, 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.⁴¹⁷ In 2001, Lessig responded by collaborating with authors, artists, and activists to establish Creative Commons (CC).⁴¹⁸ 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.”⁴¹⁹ 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.⁴²⁰ Adopting CC licenses is easy: creators choose a license, communicate that choice to other people, and include a link to the license.⁴²¹ 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.⁴²²

⁴¹⁴ Mitch Stoltz, *US Copyright Term Extensions Have Stopped, but the Public Domain Still Faces Threats*, ELECT. FRONTIER FOUND. (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].

⁴¹⁵ *Entering the Public Domain Like It’s 1999*, SCH. OF L. UNIV. OF S.C.: L. LIBR. BLOG (Jan. 1, 2019), <https://library.uofsclaw.org/2019/01/public-domain-like-1999> [https://perma.cc/5958-YBZQ].

⁴¹⁶ *Id.* To be clear, I hope that all the songwriters of “Every Morning” live longer than that.

⁴¹⁷ See generally LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY* (2004).

⁴¹⁸ *A History of Creative Commons*, CREATIVE COMMONS, <https://creativecommons.org/timeline> [https://perma.cc/RX8X-YALU]. Lessig also responded by litigating, and losing 7-2, a landmark copyright case challenging the constitutionality of the Mickey Mouse Act. Eldred v. Ashcroft, 537 U.S. 186, 194 (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.

⁴¹⁹ *What We Do*, CREATIVE COMMONS, <https://creativecommons.org/about> [https://perma.cc/QXN4-Y8XS].

⁴²⁰ *About CC Licenses*, CREATIVE COMMONS, <https://creativecommons.org/about/ccllicenses> [https://perma.cc/GA4Z-B8TP].

⁴²¹ *Id.*

⁴²² See *id.*

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.⁴²³ It caught on.⁴²⁴ The open source 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.⁴²⁵

While open source hardware is popular for electronics, it can also be used to create “free” fragrances.⁴²⁶ The Open Source Hardware Association is the leading organization certifying hardware—meaning any tangible object, like perfume—that satisfies certain open source standards.⁴²⁷ In 2023, OSHWA certified the first open source hardware perfume, a simple fragrance called World Wide Web.⁴²⁸ 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.⁴²⁹ Several more internet-inspired perfumes have been certified by OSHWA, Search Engine, Touch Grass, and Buddy List.⁴³⁰ Their sourcing, descriptions, and formulas are easily discoverable and accessible through the centralized OSHWA

⁴²³ Christine Peterson, *How I Coined the Term ‘Open Source,’* OPENSOURCE.COM (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 *infra* note 434, often created confusion about whether the software was freely available, free of cost, or both. Peterson, *supra*.

⁴²⁴ 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, POLICY AND PRACTICE 71 (Amanda Brock ed., 2d ed. 2022). The volume is, of course, open access.

⁴²⁵ *Definition (English)*, OPEN SOURCE HARDWARE ASS’N, <https://www.oshwa.org/definition> [<https://perma.cc/AH86-4NUL>].

⁴²⁶ *Certified Open Source Hardware Projects*, OPEN SOURCE HARDWARE ASS’N, <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 Model 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), and Eli Greenbaum, *Three-Dimensional Printing and Open Source Hardware*, 2 N.Y.U. J. INTELL. PROP. & ENT. L. 257 (2013).

⁴²⁷ *About*, *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.

⁴²⁸ *World Wide Web*, *supra* note 25.

⁴²⁹ CC0, CREATIVE COMMONS, <https://creativecommons.org/share-your-work/public-domain/cc0> [<https://perma.cc/UPT3-77C5>].

⁴³⁰ *Search Engine*, *supra* note 25; *Touch Grass*, *supra* note 25.

website.⁴³¹ All of the existing OSHA-certified perfumes were created and certified by an amateur perfumemaker with limited formal training: me.⁴³²

Open source can be a powerful force for equity but, like perfumery, the movement has its own history with exclusionary practices.⁴³³ For decades, communities excused and enabled the misogynistic behaviors of leading figures of the movement, like Richard Stallman, as being merely eccentric.⁴³⁴ Exclusionary environments created by the overlapping free

⁴³¹ *World Wide Web*, *supra* note 25; *Search Engine*, *supra* note 25; *Touch Grass*, *supra* note 25; *Buddy List*, *supra* note 25.

⁴³² 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, <https://www.atlasobscura.com/experiences/perfume-online-course> [<https://perma.cc/S5R7-32MU>]. My open source perfumes were created through my Cyberspace and Technology Lab. CYBERSPACE & TECH. LAB, <https://www.catlab.tech> [<https://perma.cc/2TBG-5B38>].

⁴³³ 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, <https://creativecommons.org/about/team/board-members> [<https://perma.cc/SD93-HFVR>]. Most had educations from elite institutions. See Anat Maytal, *Professor To Present Case to Supreme Court*, HARV. CRIMSON (Feb. 21, 2002), <https://www.thecrimson.com/article/2002/2/21/professor-to-present-case-to-supreme> [<https://perma.cc/8TKN-BUQ9>]; *Hal Abelson*, MASS. INST. OF TECH., <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 L. SCH., <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*, *supra*.

⁴³⁴ 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 SYS., <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. *A Serious Bio*, RICHARD STALLMAN'S PERSONAL SITE, <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 (Mar. 22, 2021), <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>]; *File: Pleasure Card by Richard M. Stallman.png*, WIKIPEDIA (Dec. 7, 2001), https://commons.wikimedia.org/wiki/File:Pleasure_Card_by_Richard_M._Stallman.png [<https://perma.cc/7L8K-HKMN>]. 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->

culture, open source, and free software movements may explain why their central figures mirror those of mainstream perfumery: white men with elite training.⁴³⁵

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."⁴³⁶ Open source is at odds with this vision: it requires people to give away their labor for free.⁴³⁷ 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.⁴³⁸ 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, access, and ability," as well as race, gender, and sexuality, "render some better able than others to exploit a commons."⁴³⁹ 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

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>].

⁴³⁵ 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 CAL., <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, and Yale Law School. *Lawrence Lessig*, *supra* note 434. 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>].

⁴³⁶ Madhavi Sunder, *IP*², 59 STAN. L. REV. 257, 323 (2006).

⁴³⁷ This time, free as in beer, not free as in speech.

⁴³⁸ Kate Darling, *Toward a Feminist Cyberlaw A-Ha*, in *FEMINIST CYBERLAW*, *supra* note 271.

⁴³⁹ Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CALIF. L. REV. 1331, 1331–32 (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).

ownership within perfumery,” Wilson-Brown has observed perfume-makers’ reactions to ideas, such as some saying,

[S]o 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 [Open Source Smell Culture] was to create structures and conversation around sharing information and, in so doing, help relieve everybody of the constant vigilance and fear.⁴⁴⁰

Other perfumers see power in open source perfume. McCartney freed her best-selling fragrance, *The Sexiest Scent on the Planet. Ever. (I.M.H.O.)*—30% Iso E. Super, 30% bergamot, 30% Cedramber®, and 10% vanillin—during the pandemic.⁴⁴¹ 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.”⁴⁴²

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 visible supporters are women, including people who began with no formal training in perfumery.⁴⁴³ 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 Part illustrates open source perfume in practice in two parts. Section III.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 Section III.B documents the mechanics of using OSHA certification and details why certification can amplify the reach of open

⁴⁴⁰ Carla Seipp, *Beauty Disruptor Series: Saskia Wilson-Brown on Open-Access Scent*, BEAUTYMATTER (Sept. 1, 2022), <https://beautymatter.com/articles/beauty-disruptor-series-saskia-wilson-brown-on-open-access-scent> [https://perma.cc/BB43-YQAU].

⁴⁴¹ 4160Tuesdays, FACEBOOK (July 6, 2020, 1:55 PM), <https://www.facebook.com/4160Tuesdays/photos/a.205186522942352/2851104838350494> [https://perma.cc/8ZA9-MWVB].

⁴⁴² Rosin Interview, *supra* note 135.

⁴⁴³ Saskia Wilson-Brown and I are two examples.

source perfumery by creating a centralized database of freely sampleable scents.⁴⁴⁴ 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.

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**.⁴⁴⁵ 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.⁴⁴⁶ All three of the P-22 perfumemakers' formulas use that license.⁴⁴⁷

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.⁴⁴⁸ 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."⁴⁴⁹ However, the Attribution-ShareAlike license is not without restrictions. Its "[a]ttribution" 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.⁴⁵⁰ Further, the "ShareAlike" term demands that any "remix, transform[ation], or build upon the [original]" be distributed under the same Attribution-ShareAlike license.⁴⁵¹ Taken together, Attribution-ShareAlike provides aspiring perfumemakers a broad license to sample perfumes without erasing the nose's work.

⁴⁴⁴ *Open Source Smell Culture Formulas Database*, *supra* note 403; *see infra* Section III.B.

⁴⁴⁵ *Open Source Smell Culture Formulas Database*, *supra* note 403.

⁴⁴⁶ *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* Section II.B.2.

⁴⁴⁷ *Id.*

⁴⁴⁸ *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>].

⁴⁴⁹ *Id.*

⁴⁵⁰ *Id.*

⁴⁵¹ *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.*

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.”⁴⁵² The Open Source Smell Culture Formulas Database, which includes the P-22 fragrances, features three related parts that are potentially protectable by copyright law: **the perfumes’ sources, descriptions, and formulas.**⁴⁵³ The database displays those parts in a straightforward chart:

PERFUME DESIGN CHALLENGE 1: P-22 ⁴⁵⁴	
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 ⁴⁵⁵	10	0.165	
Geosmin	CP ⁴⁵⁶		0.33	
Tonquitone	PA ⁴⁵⁷	10	0.825	
Turmeric	WEL ⁴⁵⁸	10	0.165	
Cashmeran	PA	10	0.495	
Ambrocinide	VIG ⁴⁵⁹		0.165	

⁴⁵² *CC BY-SA 4.0 Legal Code: Attribution-ShareAlike 4.0 International*, CREATIVE COMMONS, <https://creativecommons.org/licenses/by-sa/4.0/legalcode.en> [<https://perma.cc/G8TP-ZZS9>]. It also applies to “[s]imilar [r]ights[, 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.*

⁴⁵³ *Open Source Smell Culture Formulas Database*, *supra* note 403.

⁴⁵⁴ *Id.*

⁴⁵⁵ *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. *Open Source Smell Culture Formulas Database*, *supra* note 403.

⁴⁵⁶ CP stands for Creating Perfume. CREATING PERFUME, <https://creatingperfumes.com> [<https://perma.cc/JY6V-M4UZ>].

⁴⁵⁷ PA stands for Perfumer’s Apprentice. PERFUMERS APPRENTICE, <https://shop.perfumersapprentice.com> [<https://perma.cc/7PK7-UKZA>].

⁴⁵⁸ WEL stands for Wellington Fragrance. WELLINGTON FRAGRANCE CO., <https://wellingtonfragrance.com> [<https://perma.cc/ZZ5F-85HP>].

⁴⁵⁹ VIG stands for Vigon. VIGON, <https://www.vigon.com> [<https://perma.cc/5E3A-8FXW>].

Terpineol Alpha Acetate	PA	10	0.495	
Ambrinol	PA	1	0.165	
Castoreum	CP	10	0.165	

FURTHER COMMENTS

<p>DIRTY KITTY PEE. DUST. MORNING DEW. COSY CASHMERAN. VERSION 1-4 CAME OFF TOO PAMPERED + PRETTY—PERSIAN CAT IN THE BOUDOUIR—FLORAL + ANIMALIC, BUT GRAIN-FREE CRUNCHIES ANIMALIC. TERPINEOL + AMBRINOL AT THE END HELPED BRING IT BACK OUTDOORS, BUT MORE DUST + SUN WOULD BE BETTER.</p>

<p>A response to Helen McClory's short fiction about LA mountain lion, P-22.</p>
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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.”⁴⁶⁰ Sourcing information, such as whether an ingredient was purchased from Perfumer’s Apprentice, are akin to a phone book: comprised of uncopyrightable facts.⁴⁶¹ Only one component is protectable by copyright: Shelley’s poetic descriptions, which are short yet substantive literary works.⁴⁶² 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

⁴⁶⁰ U.S. COPYRIGHT OFF., CIRCULAR 33, WORKS NOT PROTECTED BY COPYRIGHT 2 (2021), <https://www.copyright.gov/circs/circ33.pdf> [<https://perma.cc/9V7N-CVZR>].

⁴⁶¹ Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 360 (1991).

⁴⁶² 17 U.S.C. § 102(a)(1).

or packaging, as well as publicity rights in marketing materials, are retained and can be used to protect perfumes from counterfeiting.⁴⁶³

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.

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 1990s. The scent opens with an initial hit of gasoline, which comes from a chemical called hexanol-3-cis.⁴⁶⁴ The note acts as a reminder that fossil fuels power the data centers that support the web.⁴⁶⁵ 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.⁴⁶⁶ And a warm, lingering musk rises from the trademark-protected

⁴⁶³ 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>].

⁴⁶⁴ *Open Source Perfume*, CYBERSPACE & TECH. LAB, <https://www.catlab.tech/open-source-perfume> [<https://perma.cc/3MVR-S6Q2>].

⁴⁶⁵ *Id.*

⁴⁶⁶ *Id.*

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 OSHWA.⁴⁶⁷

OSHWA 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.⁴⁶⁸ **“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.**⁴⁶⁹

Choosing a license provides an additional opportunity for perfumers to make their perfumes maximally available to aspiring perfumemakers. OSHWA asks prospective certifiers to identify their hardware, software, and documentation licenses, only the latter of which applies to perfume.⁴⁷⁰ OSHWA 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.⁴⁷¹ **“Other” is also an option.**⁴⁷²

An alternative to the Attribution-ShareAlike license is CC0. CC0 is **“no rights reserved,” effectively releasing perfumes into the public domain.**⁴⁷³ 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.”**⁴⁷⁴ 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.⁴⁷⁵

OSHWA also offers an alternate, elegant way to connect open source perfumes. By identifying perfumes using the same project types,

⁴⁶⁷ *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/2PB2-8JFP>].

⁴⁶⁸ *Certify a Project*, OPEN SOURCE HARDWARE ASS’N, <https://application.oshwa.org/apply> [<https://perma.cc/R2KU-SZW>].

⁴⁶⁹ I’ve certified all three of my open source perfumes as wearables.

⁴⁷⁰ *Certify a Project*, *supra* note 468.

⁴⁷¹ *Id.* The other licenses are variations on GPL, the license pioneered by Richard Stallman. *Id.*; *see also History*, FREE SOFTWARE FOUND., <https://www.fsf.org/history> [<https://perma.cc/9A7M-DCGD>].

⁴⁷² *Certify a Project*, *supra* note 468.

⁴⁷³ *CC0*, *supra* note 429.

⁴⁷⁴ U.S. COPYRIGHT OFF., *supra* note 460, at 2.

⁴⁷⁵ *Id.*; *Certify a Project*, *supra* note 468. CC0 is the license I use for my open source perfumes. *Open Source Perfume*, *supra* note 464.

“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.⁴⁷⁶ New certifiers can then include citations to those existing open source perfumes, both OSHWA-certified or elsewhere, which generates a link back to those formulas.⁴⁷⁷

Certifying open source perfumes through OSHWA 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.⁴⁷⁸ It is useful but somewhat outdated, with the most recent scent being from 2019.⁴⁷⁹ While the database includes a promising tab for public domain formulas, like those released using CC0, it is empty.⁴⁸⁰ Established and emerging perfumemakers may swap formulas on fragrance forums, but finding the right ones can be frustrating.⁴⁸¹ By providing an intuitive, searchable certified projects list, OSHWA 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.⁴⁸²

CONCLUSION

Three millennia ago, a scribe recorded the recipe for the first documented perfume.⁴⁸³ The fragrance consisted of flowers, calamus root, cyperus, myrrh, balsam, and oil.⁴⁸⁴ Its nose was not a man from Grasse, but rather a Babylonian woman of color named Tapputi, who is

⁴⁷⁶ *Certify a Project*, *supra* note 468.

⁴⁷⁷ *Id.*

⁴⁷⁸ *Open Source Smell Culture Formulas Database*, *supra* note 403.

⁴⁷⁹ *Id.*

⁴⁸⁰ *Id.*

⁴⁸¹ 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-SRXK>]; Chris Bartlett, *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-LPOB>].

⁴⁸² *World Wide Web*, *supra* note 25.

⁴⁸³ Altunaş, *supra* note 29.

⁴⁸⁴ *Id.*

widely regarded as the first professional perfumer.⁴⁸⁵ Even then, the nascent perfume industry was exclusionary. Only royalty could use certain scents.⁴⁸⁶ 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.⁴⁸⁷ 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.⁴⁸⁸ Which is why women, particularly women of color, have been working to democratize fragrance. Maiya Nicole Smith launched *Black Girls Smell Good* to create “a safe space to learn about fragrance without feeling like an outsider.”⁴⁸⁹ She shares her knowledge and passion with her ninety thousand social media followers, some of whom are longtime fragrance lovers and others who are just getting started.⁴⁹⁰ She also makes space to highlight Black-owned perfumeries.⁴⁹¹ Some of those wares are available at Kimberly Waters’s 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.⁴⁹² Wilson-Brown has also been a leader in democratizing fragrance through her educational and experiential efforts with the Institute for Art and Olfaction.⁴⁹³

This Article joins the endeavors of these and so many other perfumemakers 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

⁴⁸⁵ 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 29.

⁴⁸⁶ JONATHAN REINARZ, PAST SCENTS: HISTORICAL PERSPECTIVES ON SMELL 145–76 (2014).

⁴⁸⁷ Beardsley, *supra* note 21.

⁴⁸⁸ Almost everybody. People with Multiple Chemical Sensitivity may experience headaches, rashes, asthma, muscle and joint aches, fatigue, memory loss, and confusion as a result of exposure to perfumes, excluding them from hobbyist perfumemaking. *Multiple Chemical Sensitivity*, JOHNS HOPKINS MED., <https://www.hopkinsmedicine.org/health/conditions-and-diseases/multiple-chemical-sensitivity> [https://perma.cc/UYK4-98Q3]. Mindful perfume wearing—including forgoing it—can create a more inclusive working or travel environment. Thanks to Doron Dorfman for this note.

⁴⁸⁹ Denton-Hurst, *supra* note 18.

⁴⁹⁰ *Id.*

⁴⁹¹ *Id.*

⁴⁹² *Id.*

⁴⁹³ *Saskia Wilson-Brown, supra* note 401.

cookbooks.⁴⁹⁴ 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.⁴⁹⁵ 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 perfumemakers are. But if baking sourdough were more like perfumery, Western bakeries would be largely **led by French bakers who trained at the Parisian L'école Lenôte.** 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.⁴⁹⁶ During quarantine, many children helped their parents bake bread, but society rarely teaches children the perfumery skills of olfactory memory or aroma curiosity.⁴⁹⁷ **As McCartney lamented, “You can't go to your local community center. You can do your yoga class, you can do your water aerobics. You can do poetry, you can learn how to play the guitar, [but] nobody teaches anybody perfume.”**⁴⁹⁸ Without exposure to perfumemaking, aspiring perfumemakers face challenges to getting

⁴⁹⁴ See, e.g., Simply Recipes, YOUTUBE, <https://www.youtube.com/c/simplyrecipes> [<https://perma.cc/MTG8-9E7C>]; THE WOKS OF LIFE, <https://thewoksoflife.com> [<https://perma.cc/LTL9-L5CG>]. 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 (Nov. 15, 2022) <https://www.youtube.com/watch?v=V-bWm2FnVk4> [<https://web.archive.org/web/20240204232627/https://www.youtube.com/watch?v=V-bWm2FnVk4>]; G.W. SEPTIMUS PIESSE, *THE ART OF PERFUMERY, AND THE METHODS OF OBTAINING THE ODOURS OF PLANTS* (Philadelphia, Lindsay & Blakiston 1867).

⁴⁹⁵ The narrativization of recipes is likely strategic legally (or, more cynically, provides 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> [<https://perma.cc/3ERT-D2QH>].

⁴⁹⁶ 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, 12:00 PM), <https://www.forbes.com/sites/annakang/2020/06/11/the-french-actor-who-turned-quarantine-baking-into-a-thriving-business> [<https://perma.cc/533F-EVE7>]; 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> [<https://web.archive.org/web/20211008012500/https://www.nytimes.com/2020/10/21/world/americas/mexico-city-quarantine-baking.html>].

⁴⁹⁷ THE BIG BOOK OF PERFUME: FOR AN OLFACTORY CULTURE, *supra* note 281, at 73.

⁴⁹⁸ McCartney Interview, *supra* note 12.

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 perfumemakers. Importantly, open source perfume works in practice. **Within weeks of World Wide Web’s release, aspiring perfumemakers sampled the scent to create their own versions.⁴⁹⁹** 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.

⁴⁹⁹ See, e.g., @James_Carey, X (Jan. 28, 2023, 1:19 PM), https://twitter.com/James__Carey/status/1619399842354315264 [<https://perma.cc/NJX8-L7DL>].

APPENDIX A: PROFILED PERFUMES

This Article discusses the following fragrances, in order of appearance⁵⁰⁰:

- Le Labo Santal 33 (Estée Lauder)
- Maison Louis Marie Bois de Balincourt*
- CAT Lab World Wide Web*
- 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)
- **Pierre Armingeat Rêve d'Or** (defunct)
- Georges Darzens Floramyne (defunct)
- Zoologist Civet*
- Meleg Civet Cat Chypre*
- 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*
- 4160 Tuesdays The Sexiest Scent on the Planet. Ever. (I.M.H.O.)*
- MR P-22*
- CAT Lab Search Engine*
- CAT Lab Touch Grass.*
- CAT Lab Buddy List*

⁵⁰⁰ Independent perfumes are annotated with an asterisk, to the best of my knowledge. Noses for these perfumes are findable on websites like Fragrantica.