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EXIT, VOICE & INNOVATION: HOW HUMAN CAPITAL POLICY IMPACTS EQUALITY (& HOW INEQUALITY HURTS GROWTH)

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ABSTRACT

If an employee believes her organization is failing, she can take action using one of two strategies: exit (leaving the company) or voice (advocating change from within). But what happens when both exit and voice are restricted? Change itself—including both innovation and equality—suffers. This Article, written for the twenty-fourth annual Frankel Lecture, investigates the connections between fields that are usually kept separate: intellectual property and innovation policy; antitrust law and market competition; employment law and contract norms; and antidiscrimination law and equality policy.

In employment, nondisclosure agreements (NDAs), noncompete agreements, innovation assignment clauses, nondisparagement agreements, mandatory arbitration, and secrecy policies all create exit constraints. These restrictive clauses also serve to silence employees, inventors, creators, and entrepreneurs from speaking up and from expressing themselves

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creatively. These trends impede mobility in the job market while also suppressing voice.

The recent steep rise in the use of restrictive clauses has shaped human capital in ways that are harmful to all workers, as well as to industries and innovation at large. Still, the burden of these restrictions is not equally distributed. By integrating economic theory and new empirical research in the field of equality and innovation, this Article shows that restricting mobility and voice has negative effects on gender diversity, particularly with respect to women's opportunities to lead, create, and invent. As a result, industries using these techniques become more concentrated, with less new entry and startup activity, and less gender parity. And because the process operates endogenously, the more an industry is concentrated, the more mobility and equality suffer. This Article argues that recent findings on the gender deficit in patenting activity, intellectual property ownership, leadership, and entrepreneurship should be understood in relation to exit and voice policy infrastructure. It concludes with directions for future research and policy recommendations.

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"*As a rule, then, loyalty holds exit at bay and activates voice*."

—Albert Hirschman[1]

"When no one speaks, and the whole world is silent, then even one voice becomes powerful."

—Malala Yousafzai[2]

I. INTRODUCTION

How does innovation relate to equality? And how do both relate to exit and voice? In 1970, Albert Hirschman, in the now classic *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*, proposed an interplay between three concepts. Hirschman suggested that when things go bad—when there is a breakdown of leadership or when an organization becomes corrupt—individuals can effect change by either leaving the institution or by staying and working from within to right the wrongs. Loyalty, Hirschman argued, moderates the choice between these two strategies—exit and voice.[3] When an institution nourishes loyalty, its members are more likely to use their voices when dissatisfied, choosing to stay and employ their energies to improve the institution. Conversely, when loyalty is absent, participants are likely to leave as soon as they become discontent. This interplay of exit, voice, and loyalty is pertinent to a wide range of economic, social, and political contexts. In corporate settings, employees regularly experience discontent and must decide what form of action to take. But what happens when both exit and voice are restricted? While Hirschman theorized exit and voice as behavioral strategies that alternate, this Article argues that in contemporary organizational settings, exit and voice are both limited in interconnected ways. As a consequence, change itself—including both innovation and equality—suffers. Moreover, neither exit nor voice means a singular static activity. Discontent expresses itself differently with regard to varying challenges ranging from inequality to stagnation. Exit, in particular, in the context of the labor market should be understood as multiple diverging paths rather than one: a move to a competitor, a move to independence and entrepreneurship, and a move out of the industry, the region, or the job market altogether.

1. ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES 78 (1970).

2. HarvardFoundation, *Malala Yousafzai Speaks at Harvard*, YOUTUBE (Oct. 17, 2013), https://www.youtube.com/watch?v=e1tOe4SKbLU [https://perma.cc/S3VA-NWNS].

3. HIRSCHMAN, *supra* note 1, at 76–77.

This Article, written for the twenty-fourth annual Frankel Lecture, investigates the connections between fields that are usually kept separate: intellectual property and innovation policy; antitrust law and competition policy; employment law and contract practices; and antidiscrimination law and equality policy. Employment, nondisclosure agreements (NDAs), noncompete agreements, innovation assignment clauses, nondisparagement agreements, mandatory arbitration, and secrecy policies all create exit constraints.[4] These agreements and policies also silence employees, inventors, creators, and entrepreneurs from speaking up and expressing themselves creatively. By creating impediments to mobility in the job market while also suppressing voice, these restrictions harm innovation. Recently, a steep rise in restrictive clauses and practices has shaped human capital in ways that are harmful to all workers as well as to industries at large. Still, the burden of these restrictions is not equally distributed. Integrating economic theory and new empirical research in the field of equality and innovation, this Article argues that restricting mobility and voice has negative effects on gender diversity, particularly with respect to women's opportunities to lead, create, and invent.[5] These techniques lead to heightened concentration in industries, with less new entry and startup activity and less gender parity. And because this process operates endogenously, the more an industry is concentrated, the more mobility and equality suffer. This Article contends that recent findings on the gender deficit in patenting activity, intellectual property ownership, and entrepreneurship should be understood in relation to exit and voice policy infrastructure.

The Article does not aim to offer definitive or prescriptive answers on the right mix of exit and voice. Instead, it seeks to analyze the complex interactions between four rich concepts: exit, voice, innovation, and equality, and identify particular dynamics that emerge in the labor market. The argument at the heart of this Article is that too often these four concepts are kept separate and studied through different lenses. A central goal of this Article, therefore, is to highlight the importance of the relationship between gender, mobility, and speech in productive settings. Most often, studies on inequality focus on end results—offering data about the lack of participation of women and minorities in certain industries and creative and inventive ventures. Far less attention is given to the quality of participation, opportunity, and innovation in unequal (or equal) settings. While we have a substantial

4. *See infra* Part II.

5. *See infra* Part III.

amount of research on how innovation is unequal, the opposing pathway query—how inequality impacts innovation—is far less explored. At the same time, there is a growing body of empirical evidence and important theoretical writing that can help us connect these frameworks through the lens of exit and voice. The goal of this Article is to illuminate links and patterns, suggesting directions for future research that better connects these complex concepts in work ecologies and policy infrastructure.

The Article proceeds as follows. Part II presents a view of the field of human capital at the intersections of intellectual property law, contract law, employment policy, and antitrust. I show how recent years have brought a rise in boilerplate contracts and corporate practices that increase the risk of both intraorganizational speech and interorganizational mobility. Part III reviews recent findings on the gender deficit in patenting activity, intellectual property ownership, and entrepreneurship. Gender gaps persist in ownership of intellectual property, investment in ventures, and in the impact of market concentration and mobility constraints. Part IV turns to the gendered patterns of exit and voice. Drawing from both economic theory and new empirical research in the field of equality and innovation, I contemplate how restricting mobility and voice has negative effects on gender diversity. Over time, industries that suppress exit and voice become more concentrated and less equal. The process is endogenous: the more an industry is concentrated, the more mobility and equality suffer. Moreover, I develop a typology of labor market exit and voice that challenges simplified understandings of Hirschman's framework. In particular, I argue that exit can take on many forms: mobility to a competitor, entrepreneurial ventures, relocation, professional detours, or moves to nontraditional gig work, such as participating in innovation competitions.[6] Each of these exit patterns shapes the innovation landscape and labor market equality. The Article concludes with directions for future inquiry, including policy recommendations that better reflect the interplay between exit, voice, innovation, and equality.

II. HUMAN CAPITAL POLICY AS A MODERATOR OF EXIT & VOICE

In Ovid's *Metamorphoses*, Tereus, King of Thrace and son of Ares, rapes his sister-in-law Philomela. He then threatens to keep her quiet about the assault, but Philomela is defiant and wishes to speak up. The enraged king cuts out her tongue to permanently

6. *See infra* Section IV.A.

silence her.[7] In more subtle ways, NDAs, noncompetes, innovation assignment clauses, mandatory arbitration, and secrecy policies remove the tongues of employees, inventors, creators, and entrepreneurs, prohibiting them from speaking up against the institution and from using their potential to impact the path of an industry. Most recently, the ways NDAs serve to silence victims of workplace harassment have been at the center of public debates.[8] But such restrictions also limit the ability of employees to dissent, compete, and assert both their concerns and creativity in a wide range of contexts.

In September 2019, two seemingly unrelated publications came out. The first was the best-selling book *She Said: Breaking the Sexual Harassment Story That Helped Ignite a Movement* by journalists Jodi Kantor and Megan Twohey.[9] Kantor and Twohey had exposed Harvey Weinstein's history of sexual harassment and intimidation, the watershed event that propelled the #MeToo movement, to the world in a 2017 *New York Times* article.[10] Their 2019 book is much more than the story of a serial harasser: it is the story of the system that sustained him. Around the same time that Kantor and Twohey released their book, *Forbes* published its annual *America's Most Innovative Leaders* list for 2019, which included exactly one woman and ninety-nine men.[11] *Forbes* defended its method of exclusively selecting male innovators as objective and data-driven.[12] How do these realities relate, aside from the obvious connection that that gender equality is still an aspiration rather than our reality?

She Said is the story of a pervasive system of silencing. Beyond exposing producer Harvey Weinstein and his horrifying

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7. OVID, METAMORPHOSES bk. VI, at 146–51 (Dryden et al. trans., J.F. Dove, St. John's Square 1826).

8. Scott Altman, *Do Non-Disclosure Agreements Hurt or Help Women?*, HILL (Nov. 12, 2019, 11:30 AM), https://thehill.com/opinion/judiciary/470013-do-non-disclosure-agreements-hurt-or-help-women [https://perma.cc/UW2Q-42Z7].

9. JODI KANTOR & MEGAN TWOHEY, SHE SAID: BREAKING THE SEXUAL HARASSMENT STORY THAT HELPED IGNITE A MOVEMENT (2019).

10. Jodi Kantor & Megan Twohey, *Harvey Weinstein Paid Off Sexual Harassment Accusers for Decades*, N.Y. TIMES (Oct. 5, 2017), https://www.nytimes.com/2017/10/05/us/harvey-weinstein-harassment-allegations.html [https://perma.cc/K8SW-SHQ9].

11. *America's Most Innovative Leaders*, FORBES, https://www.forbes.com/lists/innovative-leaders/#303f4e6226aa [https://perma.cc/7EYG-5QZK] (last visited Sept. 27, 2019).

12. Jeff Dyer et al., *How We Rank America's 100 Most Innovative Leaders*, FORBES (Sept. 3, 2019, 10:18 AM), https://www.forbes.com/sites/nathanfurrjeffdyer/2019/09/03/how-we-rank-americas-100-most-innovative-leaders/#5af68d162873 [https://perma.cc/63N4-ALPQ]. *Forbes*'s editor later admitted the methodology was flawed. Jena McGregor, *'We Blew It': Forbes Named 99 Men and Only One Woman on Its List of 'Most Innovative Leaders*,' WASH. POST (Sept. 10, 2019, 6:00 AM), https://www.washingtonpost.com/business/2019/09/10/we-blew-it-forbes-named-men-only-one-woman-its-list-most-innovative-leaders/ [https://perma.cc/GT7S-MGYM].

abuse of his position of power to sexually harass or assault dozens of women, including A-list celebrities, aspiring actresses and models, and employees of his company over the course of decades, Kantor and Twohey reveal how allegations and accounts were "killed" for years when other reporters tried to publish them.[13] Accusers themselves were silenced using contracts, legal threats, money, and professional intimidation.[14] Kantor and Twohey had to work "in the blank spaces between the words."[15] Their reporting exposed an entire system that silences women.[16] As the *Los Angeles Times* wrote: "[T]he alleged crimes of Harvey Weinstein are also the crimes of our culture, and they continue to be committed every day by many men all around the world. Although now, one hopes, without as much silence, secrecy and cultural complacency."[17]

The accusations against Harvey Weinstein triggered a wave of sexual misconduct claims against powerful men.[18] A pervasive pattern emerged: the accused often hid claims of misconduct from the public by private settlement agreements that included NDAs. Weinstein had secretly settled several claims of sexual harassment and unwanted physical conduct, as did other infamous figures including former Fox chair Roger Ailes, Fox anchor Bill O'Reilly, and Grammy-winning artist R. Kelly.[19] Zelda

13. Terry Gross, 'Times' *Reporters Describe How a Paper Trail Helped Break the Weinstein Story*, NPR (Nov. 15, 2017, 4:35 PM), https://www.npr.org/2017/11/15/564310240/times-reporters-describe-how-a-paper-trail-helped-break-the-weinstein-story [https://perma.cc/MSP8-9J4K].

14. *Id.*

15. KANTOR & TWOHEY, *supra* note 9, at 57.

16. Susan Faludi, *'*She Said*' Recounts How Two Times Reporters Broke the Harvey Weinstein Story*, N.Y. TIMES (Sept. 8, 2019), https://www.nytimes.com/2019/09/08/books/review/she-said-jodi-kantor-megan-twohey.html [https://perma.cc/6KMP-JMY8].

17. Mary McNamara, *'*She Said*' Is More Important Than '*All the President's Men.*' There, I Said It*, L.A. TIMES (Sept. 12, 2019, 6:00 AM), https://www.latimes.com/entertainment-arts/books/story/2019-09-11/she-said-is-more-important-that-all-the-presidents-men-there-i-said-it [https://perma.cc/PZN7-JCTP].

18. Belinda Luscombe, *So This Is How Men Like Weinstein Get Away with It for So Long*, TIME (Nov. 9, 2017), https://time.com/4995946/weinstein-workplace-culture/ [https://perma.cc/4U82-BHX9].

19. Orly Lobel, *The Prisoner's Dilemma in Airing Fox's Corporate Culture*, FORTUNE (July 28, 2016, 10:39 AM), https://fortune.com/2016/07/28/fox-corporate-culture-roger-ailes-gretchen-carlson/ [https://perma.cc/YGZ3-URVV]; Elizabeth A. Harris, *Despite #MeToo Glare, Efforts to Ban Secret Settlements Stop Short*, N.Y. TIMES (June 14, 2019), https://www.nytimes.com/2019/06/14/arts/metoo-movement-nda.html [https://perma.cc/Q4QY-ZGU4]. The cases of Bill O'Reilly and Roger Ailes further underscore the culture of secrecy and institutional protection that a company may foster to deflect public scrutiny of sexual misconduct by its stars and executives. Former Fox News chairman and CEO Roger Ailes resigned in 2016 shortly after former anchor Gretchen Carlson accused him of sexual harassment and retaliatory termination, a suit which Fox agreed to settle for $20 million.

Perkins, Weinstein's former assistant, broke her NDA nearly two decades after she settled with him following years of sexual harassment.[20] In filing a lawsuit against Roger Ailes, Gretchen Carlson circumvented the compulsory arbitration clause in her employment contract.[21]

These practices are not limited to the entertainment industry. Google saw a 20,000 employee walkout in November 2018 that was centered around a demand to end compulsory arbitration in cases of sexual discrimination and sexual assault.[22] This spurred Google, Facebook, Airbnb, eBay, and Square to announce that they all would end forced arbitration for cases of sexual harassment.[23] In the wake of the #MeToo movement, several states have initiated reforms to challenge extensive nondisclosure clauses in employee contracts and dispute settlements. In 2018, California, New York, and Washington passed new laws prohibiting confidentiality in settlement agreements pertaining to sexual harassment.[24] A

After Ailes's resignation, an internal investigation brought forth several other women with similar allegations against Ailes. Similarly, Fox News anchor Bill O'Reilly resigned in 2017 soon after investigations revealed that O'Reilly had settled five sexual harassment claims and one verbal abuse claim for nearly $45 million. It became all too clear that there was an entrenched culture of harassment and suppression of accusers within the company. The 18 months of volatility caused by these events did prompt 21st Century Fox, the parent company of Fox News, to create a council to advise senior management of appropriate behavior and revamp procedures for reporting sexual misconduct. However, this advisory step rings hollow as O'Reilly and Ailes were given $25 million and $40 million, respectively, in separation pay—while some of the accusers are still bound by legal documents that extend far beyond their employment with Fox News. *See* Anita Balakrishnan & Michelle Castillo, *Roger Ailes Resigns as CEO of Fox News*, CNBC (July 21, 2016, 6:37 PM), https://www.cnbc.com/2016/07/21/fox-news-confirms-that-roger-ailes-is-leaving-company.html [https://perma.cc/ELG6-R4KH]; Meg James, *Bill O'Reilly to Leave Fox News with $25 Million*, L.A. TIMES (Apr. 20, 2017, 11:49 AM), https://www.latimes.com/business/hollywood/la-fi-ct-bill-oreilly-payout-20170420-story.html [https://perma.cc/N2WE-JJNX]; Emily Steel, *Fox Establishes Workplace Culture Panel After Harassment Scandal*, N.Y. TIMES (Nov. 20, 2017), https://www.nytimes.com/2017/11/20/business/media/fox-news-sexual-harassment.html [https://perma.cc/FJM7-JNCZ]; Emily Steel & Michael S. Schmidt, *Bill O'Reilly Is Forced Out at Fox News*, N.Y. TIMES (Apr. 19, 2017), https://www.nytimes.com/2017/04/19/business/media/bill-oreilly-fox-news-allegations.html [https://perma.cc/Q2S5-GRF8].

20. Nitasha Tiku, *How to Pierce the Secrecy Around Sexual Harassment Cases*, WIRED (Dec. 4, 2017, 7:00 AM), https://www.wired.com/story/how-to-pierce-the-secrecy-around-sexual-harassment-cases/ [https://perma.cc/PKY2-V5K9].

21. *Id.*

22. Shirin Ghaffary, *Google Will End a Practice That Prevents Their Workers from Taking the Company to Court over Workplace Disputes*, VOX (Feb. 21, 2019, 3:44 PM), https://www.vox.com/2019/2/21/18235161/google-workplace-dispute-end-forced-arbitration [https://perma.cc/72B8-2G5T].

23. Shirin Ghaffary & Rani Molla, *Tech Companies Like Google Are Giving Workers the Right to Take Sexual Harassment Claims to Court – but Employees Are Calling for More*, VOX (Nov. 19, 2018, 1:44 PM), https://www.vox.com/2018/11/19/18095426/google-sexual-harassment-forced-arbitration-claim-workplace-lawsuit-sue [https://perma.cc/4NH3-KZK6].

24. S.B. 820, ch. 953, § 1, 2018 Cal. Stat. 96 (codified as amended at CAL. CIV. PROC.

federal bill, the Ending the Monopoly of Power Over Workplace Harassment through Education and Reporting Act (EMPOWER Act), also aims to prohibit nondisclosure clauses regarding workplace harassment and to establish a confidential tip line for reporting systematic workplace harassment.[25]

Secrecy, however, goes far beyond silencing harassment victims.[26] NDAs and mandatory arbitration clauses are baked into standard employment contracts in every industry. The Economic Policy Institute's September 2017 study estimated that more than half of American employers use mandatory arbitration agreements.[27] NDAs were originally designed to protect the company's competitive secrets and innovation, but today NDAs regularly include information beyond traditionally defined secrets under trade secrecy laws, including general know-how, skills, client lists, and salary information.[28] They also include provisions prohibiting the employee from disparaging the company. Courts have been split on whether NDAs can extend to information that is not a trade secret.[29] Courts may find a confidentiality agreement

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CODE § 1001 (West 2019)); N.Y. C.P.L.R. § 7515 (McKinney 2018); N.Y. GEN. OBLIG. LAW § 5-336 (McKinney 2018); N.Y. C.P.L.R. § 5003-B (McKinney 2018); WASH. REV. CODE § 49.44.210 (2018).

25. EMPOWER Act, H.R. 1521, 116th Cong. §§ 103–104 (2019). For a creative proposal to balancing secrecy with transparency, see Ian Ayres, *Targeting Repeat Offender NDAs*, 71 STAN. L. REV. ONLINE 76, 79–86 (2018).

26. *See generally* Rochelle Cooper Dreyfuss & Orly Lobel, *Economic Espionage as Reality or Rhetoric: Equating Trade Secrecy with National Security*, 20 LEWIS & CLARK L. REV. 419 (2016) (arguing that the federal government's efforts to protect trade secrets disrupt information flows, interfere with collaboration, and undermine innovators); Orly Lobel, *The DTSA and the New Secrecy Ecology*, 1 BUS. ENTREPRENEURSHIP & TAX L. REV. 369 (2017) (exploring how the Defend Trade Secrets Act broadens the reach of trade secrets protection and how its reach could impact entrepreneurship); Orly Lobel, *The New Cognitive Property: Human Capital Law and the Reach of Intellectual Property*, 93 TEX. L. REV. 789 (2015) (explaining how the expansion of intellectual property encompasses "cognitive property," and controlling such property curtails efficient economic growth and innovation); Orly Lobel, *NDAs Are Out of Control. Here's What Needs to Change*, HARV. BUS. REV. (Jan. 30, 2018) [hereinafter Lobel, *NDAs Are Out of Control*], https://hbr.org/2018/01/ndas-are-out-of-control-heres-what-needs-to-change [https://perma.cc/CCN6-KNJJ] (discussing the ubiquity of NDAs and their chilling effect on competition and mobility).

27. ALEXANDER J.S. COLVIN, ECON. POLICY INST., THE GROWING USE OF MANDATORY ARBITRATION 5 (2018), https://www.epi.org/files/pdf/144131.pdf [https://perma.cc/L5D9-GQK3].

28. Lobel, *NDAs Are Out of Control*, *supra* note 26; Orly Lobel, *Knowledge Pays: Reversing Information Flows & the Future of Pay Equity*, 120 COLUM. L. REV. (forthcoming 2020) [hereinafter Lobel, *Knowledge Pays*] (manuscript at 38–39), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3373160 [https://perma.cc/8YMH-U29Z].

29. *See, e.g.*, Hecny Transp., Inc. v. Chu, 430 F.3d 402, 404 (7th Cir. 2005); Dow Corning Corp. v. Jie Xiao, No. 11-10008-BC, 2011 WL 2015517, at *14 (E.D. Mich. May 20, 2011); Firetrace USA, LLC v. Jesclard, 800 F. Supp. 2d 1042, 1046–50 (D. Ariz. 2010), *appeal dismissed*, 459 Fed. App'x 906 (Fed. Cir. 2011); Diamond Power Int'l, Inc. v.

void because it is unreasonable and overly broad.[30] Still, the subject matter of confidential information has expanded, and trade secrecy litigation continues to rise, in particular since the passage of the DTSA.[31]

Salary information is a good example of questionable enforceability. Under both federal and state law, salary information should not be the subject of workplace secrecy.[32] At the same time, the practice reveals a gap between law and society. NDAs regularly list salary and other compensation information as proprietary, directing the employee to not discuss such information with anyone inside or outside the organization. Regardless of enforceability, NDAs are routinely expansive and employed to signal to employees that a range of knowledge, information, and speech is off-limits. Salary as proprietary information also shows the connections between market competition, secrecy, and inequality: if women and minorities are in the dark about their undervalued talent, they are less likely to seek exit or to speak up to be equally compensated for their performance.[33] Another such example of trade secrecy expansion that inhibits mobility and equality is information pertaining to diversity. In recent years, major companies have claimed that their diversity information is a trade secret.[34] In 2018 for example, International Business Machines Corp. (IBM) filed a lawsuit

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Davidson, 540 F. Supp. 2d 1322, 1345 (N.D. Ga. 2007); Hauck Mfg. Co. v. Astec Indus., Inc., 375 F. Supp. 2d 649, 657 (E.D. Tenn. 2004); MING W. CHIN ET AL., CAL. PRAC. GUIDE: EMPLOYMENT LITIGATION § 14:455 (2018) ("It is not settled whether a former employee's use of a former employer's confidential information that is not protected as a trade secret constitutes unfair competition." (emphasis omitted)).

30. CSS, Inc. v. Herrington, 306 F. Supp. 3d 857, 880–81 (S.D. W. Va. 2018) (voiding the confidentiality agreement because it was unreasonable, containing no limitation of time or geographic scope); Spirax Sarco, Inc. v. SSI Eng'g, Inc., 122 F. Supp. 3d 408, 425–27 (E.D.N.C. 2015); PC Connection, Inc. v. Price, No. 15-cv-208-PB, 2015 WL 6554546, at *4 (D.N.H. Oct. 29, 2015).

31. *See, e.g.*, Dreyfuss & Lobel, *supra* note 26, at 446; Lobel, *NDAs Are Out of Control*, *supra* note 26; Orly Lobel, *The* Uber-Waymo *Lawsuit: It Should Be Easy to Poach Talent, but Not IP*, HARV. BUS. REV. (June 9, 2017), https://hbr.org/2017/06/the-uber-waymo-lawsuit-it-should-be-easy-to-poach-talent-but-not-ip [https://perma.cc/C6G6-4JJT].

32. National Labor Relations Act, 29 U.S.C. §§ 157–158 (2012); *Board Finds Houston Engineering Firm Unlawfully Fired Employee for Discussing Salaries with Coworkers*, NLRB (Feb. 15, 2013), https://www.nlrb.gov/news-outreach/news-story/board-finds-houston-engineering-firm-unlawfully-fired-employee-discussing [https://perma.cc/F6TX-CVXA].

33. *See* Lobel, *Knowledge Pays*, *supra* note 28 (manuscript at 38) (arguing that to achieve pay equity, "we must move away from insularity, correct for information asymmetry, and move toward more transparency").

34. *See* Jamillah Bowman Williams, *Diversity as a Trade Secret*, 107 GEO. L.J. 1685, 1693–99 (2019); Julianne Pepitone, *Black, Female, and a Silicon Valley 'Trade Secret*,*'* CNN MONEY (Mar. 18, 2013, 11:59 AM), https://money.cnn.com/2013/03/17/technology/diversity-silicon-valley/index.html [https://perma.cc/8V9H-VBZA].

against its former Chief Diversity Officer, who wanted to exit IBM, claiming that the employee had knowledge on how to achieve more inclusion and diversity and which coworkers are valuable diversity recruits.[35] In another case, IBM alleged that the executive held trade secrets, which included diversity data and diversity strategies.[36] More transparency on diversity data can allow workers to make informed decisions. It gives third parties—competitors and reviewers—greater information as well to showcase successes. There are currently multiple awards and rankings of equality and diverse workplaces, but there is opacity in how these are determined.

Beyond NDAs, which impede both internal speech and mobility in the market, noncompetes have similarly become routine features in employment clauses, prohibiting an employee from moving to another company in her industry or founding her own company in the same field after leaving her current employer. A recent Treasury Department report estimates that 30 million workers are bound by such clauses.[37] According to several empirical studies, a majority of executives have signed noncompetes as part of their employment contracts.[38] Moreover, employment clauses that restrict exit from one's current employer are broader than the formal noncompete clause. Employers also insert nonsolicitation clauses that attempt to prohibit recruitment efforts by a former employee of their previous coworkers or customers. Nonsolicitation of clients and coworkers again restricts exit and competition by stripping former employees of their professional network. Instead of being an asset to prospective employers because of their rich experience, experienced employees become liabilities because swaths of the market are off-limits to them. A third type of human capital restriction is the pre-innovation assignment agreement. These agreements often go beyond the subjects that intellectual property deem commodifiable. At times, assignment clauses also include holdover clauses that reach into the future to innovation that would be made postemployment. The enforceability of noncompetes, nonsolicitation, and assignment agreements, like the

35. Chris Dolmetsch, *Microsoft's New Chief Diversity Officer Won't Start Until July After IBM Lawsuit*, BLOOMBERG (Mar. 5, 2018, 5:21 PM), https://www.bloomberg.com/news/articles/2018-03-05/microsoft-s-new-chief-diversity-officer-won-t-start-until-july [https://perma.cc/XM35-K5VF].

36. Complaint at 1, Int'l Bus. Machs. Corp. v. McIntyre, No. 7:18-cv-01210-VB (S.D.N.Y. Feb. 12, 2018).

37. OFFICE OF ECON. POLICY, U.S. DEP'T OF TREASURY, NON-COMPETE CONTRACTS: ECONOMIC EFFECTS AND POLICY IMPLICATIONS 6 (2016).

38. Mark J. Garmaise, *Ties That Truly Bind: Noncompetition Agreements, Executive Compensation, and Firm Investment*, 27 J.L. ECON. & ORG. 376, 396 (2011).

enforceability of NDAs, varies across jurisdictions, but there is mounting evidence that their mere insertion into contracts has an effect of chilling employee mobility. Standard contemporary contracts often include a classic noncompete, a customer nonsolicit, a coworker nonsolicit, a broad nondisclosure agreement, a broad assignment clause, a holdover clause, predispute arbitration, choice of law, reformation, and liquidated damages clauses. As I argue in a forthcoming article, the effects of multiple contractual clauses together are larger than the sum of their parts.[39] When taken together, these clauses form exit and voice penalties that present as ironclad.

The workplace is where most innovation activities happen today. This means that employees effectuate change by employing their creative and inventive energies. The field of human capital examines the ways individuals are motivated and incentivized to use their innovative capacities to increase the performance of their organization. Just as a corporation that is corrupt or unequal can be changed by voices within or by exit, an organization that is stagnating and uninventive can be left or energized. Innovation, however, suffers from a deep, longstanding deficit: women are severely underrepresented in inventive and creative activities and roles. The following Parts present this deficit and then explore its complex links to human capital policies that restrict exit and voice.

III. THE INNOVATION DEFICIT: FINDING THE LOST MARIE CURIES AND FRIDA KAHLOS

When *Forbes* published its annual *America's Most Innovative Leaders* list for 2019, there was a glaring lack of women.[40] In fact, out of a list of 100, only Barbara Rentler, the CEO of Ross Stores, was featured in the sea of male executives.[41] This prompted a follow-up article by *Forbes*'s editor and chief content officer Randall Lane, reflecting on the lack of women featured on the list.[42] While he expressed some empathy for wanting a "subjective list," ultimately Lane defended all *Forbes*'s lists as "data-driven exercises" and insisted that they merely "let the chips fall where they may."[43] Lane did admit that the methodology was skewed,

39. Orly Lobel, *The Contract Thicket: Addition & Supra Addition in Private Law Theory* 12 (Aug. 10, 2019) (unpublished manuscript) (on file with the Author).

40. *America's Most Innovative Leaders*, *supra* note 11.

41. *Id.*

42. Randall Lane, *Opportunity Missed: Reflecting on the Lack of Women on Our Most Innovative Leaders List*, FORBES (Sept. 8, 2019, 11:31 AM), https://www.forbes.com/sites/randalllane/2019/09/08/opportunity-missed-reflecting-on-the-lack-of-women-on-our-most-innovative-leaders-list/#453a58a1c6b6 [https://perma.cc/D6V4-6939].

43. *Id.*

however, as it was applied only to public companies worth $10 billion or more, and women make up just 5% of S&P 500 chief executives.[44] Specific patterns in constructing the selection pool for such lists have also led to low representation of women-led startups on its *Next Billion Dollar Startup* list.[45]

According to *Forbes*, the *Most Innovative Leaders* list's methodology involves four factors: (1) "media reputation for innovation"; (2) "social connections/ . . . capital"; (3) "track record" of value creation; and (4) "investor expectations" for value creation.[46] This presents something that is typical in patterns of discrimination and exclusion: on the one hand, the sorter or decision-maker cites to a seemingly neutral and gender-blind methodology and presents the approach as "data-driven," while at the same time each factor is tainted with subjective bias. In the innovation list, media reputation is founded on a five-year count of the number of articles and media coverage from a list of well-known publications, such as *Forbes* itself, the *Wall Street Journal*, and the *Financial Times*.[47] The social connections factor is a combination of LinkedIn connections and Twitter followers.[48] These factors are given equal weight to value creation and expectations of future value creation.[49] Notably, the metrics look at capitalization at the end of each year and are truly aimed at measuring growth, rather than looking into innovative workplace processes that achieve objectives other than growth.[50] In other words, the methodology sustains a self-fulfilling order: it does not really reflect innovation, but prominence of the CEO and growth.

Beyond these ceremonial and controversially compiled lists, the evidence on an actual innovation deficit is mounting. Women are not patenting, commercializing, receiving funds, or founding entrepreneurial ventures at the same rates as men.[51] One

44. *Id.*

45. *Id.*

46. Dyer et al., *supra* note 12.

47. *Id.*

48. *Id.*

49. *Id.*

50. *Id.*

51. Dana Kanze et al., *We Ask Men to Win and Women Not to Lose: Closing the Gender Gap in Startup Funding*, 61 ACAD. MGMT. J. 586, 590 (2018); Kjersten Bunker Whittington & Laurel Smith-Doerr, *Women Inventors in Context: Disparities in Patenting Across Academia and Industry*, 22 GENDER & SOC'Y 194, 201 (2008) [hereinafter Whittington & Smith-Doerr, *Women Inventors in Context*]; Kjersten Bunker Whittington & Laurel Smith-Doerr, *Gender and Commercial Science: Women's Patenting in the Life Sciences*, 30 J. TECH. TRANSFER 355, 362 (2005) [hereinafter Whittington & Smith-Doerr, *Gender and Commercial Science*]; BERNA DEMIRALP ET AL., NAT'L WOMEN'S BUS. COUNCIL, ON THE COMMERCIALIZATION PATH: ENTREPRENEURSHIP AND INTELLECTUAL PROPERTY

comparison of numbers—72 to 32,362—helps highlight a history of vast disparity. In the United States, between 1790 and 1859, only 72 patents were granted to women inventors while men obtained over 32,000 patents.[52] While this striking disparity has been slowly closing, the gender gap in invention persists. A new study by the United States Patent and Trademark Office (USPTO) found that, despite increases in the rates of women in patenting, the percentage of all patent inventors who are women was still only 12% in 2016.[53] Moreover, the low rates of individual women inventors, all-women teams, or teams in which women are the most experienced inventors have all shown little change over the last three decades.[54] The small increase in the number of women holding patents can instead be largely attributed to increased participation in mixed-gender teams of inventors. In other words—and in findings supported by several other studies—women are less likely to patent alone and are more likely to be parts of teams in which they are the junior inventor.[55]

Like the gender wage gap, which has been stagnating,[56] the findings show the pace of growth in the number of women patenting has similarly slowed. Comparing the women inventor rate with the percentage of women in science and engineering occupations, there is a wide gap. In nearly all fields, women participate at a much higher rate than they patent technology.

OUTPUTS AMONG WOMEN IN STEM 9 (2017), https://cdn.www.nwbc.gov/wp-content/uploads/2017/03/13133831/STEM-Commercialization-website-ready.pdf [https://perma.cc/SZV8-HZUG]; JESSICA MILLI ET AL., INST. FOR WOMEN'S POLICY RESEARCH, EQUITY IN INNOVATION: WOMEN INVENTORS AND PATENTS 3 (2016), https://iwpr.org/wp-content/uploads/wpallimport/files/iwpr-export/publications/C448%20Equity%20in%20Innovation.pdf [https://perma.cc/M3AL-MWT4].

52. *See* B. Zorina Khan, *Married Women's Property Laws and Female Commercial Activity: Evidence from United States Patent Records, 1790–1895*, 56 J. ECON. HIST. 356, 367–68 (1996).

53. USPTO, PROGRESS AND POTENTIAL: A PROFILE OF WOMEN INVESTORS ON U.S. PATENTS 3–4 (2019).

54. *See, e.g.*, Pierre Azoulay et al., *The Determinants of Faculty Patenting Behavior: Demographics or Opportunities?*, 63 J. ECON. BEHAV. & ORG. 599, 615 (2007); Rainer Frietsch et al., *Gender-Specific Patterns in Patenting and Publishing*, 38 RES. POL'Y 590, 594–95 (2009); Jerry G. Thursby & Marie C. Thursby, *Gender Patterns of Research and Licensing Activity of Science and Engineering Faculty*, 30 J. TECH. TRANSFER 343, 351 (2005); Whittington & Smith-Doerr, *Gender and Commercial Science*, *supra* note 51, at 358.

55. James Moody, *The Structure of a Social Science Collaboration Network: Disciplinary Cohesion from 1963 to 1999*, 69 AM. SOC. REV. 213, 234 (2004); KORDULA KUGELE, EUR. STUDIES ON GENDER ASPECTS OF INVENTIONS, STATISTICAL SURVEY AND ANALYSIS OF GENDER IMPACT ON INVENTIONS: ANALYSIS OF STATISTICS OF FEMALE INVENTORS IN EUROPE ¶ 2.6 (2008), http://www.esgi.de/uploads/media/071112_WorkReport1.pdf [https://perma.cc/92G3-AGAK].

56. Lobel, *Knowledge Pays*, *supra* note 28 (manuscript at 5).

Some industries do better than others.[57] In engineering, the women's workforce participation rate resembles the overall women inventor rate. In biotechnology, women accounted for 25% of inventors granted patents—although a low number, it is still higher than the rates in other industries.[58] Women fare far better at research institutions and universities than at private firms. Still, women in academia patent less than men.[59] The USPTO study concludes that "women are specializing in technology fields and sectors where female predecessors have patented before rather than entering into male-dominated fields or firms."[60]

These challenges for women inventors are global. In 2015, the World Intellectual Property Organization (WIPO) looked at data on Patent Cooperation Treaty (PCT) applications from 182 different countries. Women inventors represented 29% of inventors.[61] Patent filings that listed only women were 4.3%. WIPO reports that in the United States only 10% of patent applications include female inventors, while the number drops to 4% in German-speaking nations and doubles to 20% in Spanish-speaking nations.[62] A study by the British Intellectual Property Office, looking at the past century worldwide, finds that women still only represent around 10% of all inventors.[63]

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57. *See, e.g.*, Waverly W. Ding et al., *Gender Differences in Patenting in the Academic Life Sciences*, 313 SCI. 665, 665 (2006); Kjersten Bunker Whittington, *Mothers of Invention? Gender, Motherhood, and New Dimensions of Productivity in the Science Profession*, 38 WORK & OCCUPATIONS 417, 448–49 (2011); Whittington & Smith-Doerr, *Women Inventors in Context*, *supra* note 51, at 198.

58. USPTO, *supra* note 53, at 5, 8, 10 ("Women comprise the smallest share of patent inventors at firms with largely electrical and mechanical engineering technology, such as Deere & Co (4%) and Caterpillar (6%). Interestingly, there is considerable variation in women inventor rates across firms within the same technological sectors, such as IBM (16%) versus Qualcomm (12%) and Apple (9%).").

59. Annette I. Kahler, *Examining Exclusion in Woman-Inventor Patenting: Comparison of Educational Trends and Patent Data in the Era of Computer Engineer Barbie*, 19 AM. U. J. GENDER SOC. POL'Y & L. 773, 776–77 (2011); USPTO, *supra* note 53, at 9.

60. USPTO, *supra* note 53, at 8.

61. Gema Lax Martinez et al., *Identifying the Gender of PCT Inventors* 8 (World Intellectual Prop. Org. Econ. Research & Statistics Series, Working Paper No. 33, 2016), https://www.wipo.int/publications/en/details.jsp?id=4125 [https://perma.cc/49P4-4W2N]; *see also* Fulvio Naldi et al., *Scientific and Technological Performance by Gender*, *in* HANDBOOK OF QUANTITATIVE SCIENCE AND TECHNOLOGY RESEARCH 299, 302 (Henk F. Moed et al. eds., 2004) (discussing the "leaky pipeline" of women in science, even in countries with advanced equality legislation); Rainer Frietsch et al., *supra* note 54, at 594–95 (reporting that while there has been an increase of women in technology output in most countries over time, it is still a relatively low level).

62. Dan L. Burk, *Bridging the Gender Gap in Intellectual Property*, WIPO MAG. (Apr. 2018), https://www.wipo.int/wipo_magazine/en/2018/02/article_0001.html [https://perma.cc/8VZC-C2V4].

63. UK INTELLECTUAL PROP. OFFICE INFORMATICS TEAM, GENDER PROFILES IN

The patent system and the application process are partially to blame. A new study in *Nature Biotechnology* finds that obviously feminine names on patent applications have an 8.2% lower chance of obtaining a patent and are cited 30% less than male patent applications.[64] By contrast, names of ambiguous gender have only a 2.8% lower chance of receiving a patent grant and females with ambiguously gendered names are cited 20% more than patent applications by males with ambiguously gendered names.[65] Consequently, policy recommendations have been oriented to reform the patenting process and the significance of patents, calling for anonymity in filing as well as the granting of a limited period of protection from copying for unregistered inventions, among other things. These changes stand to benefit and encourage women inventors because they underutilize the registered patent system.[66]

However, beyond the patent system itself, the job market and contemporary work environments present persisting impediments to equality in innovation. In 2017, a Harvard research team looked at what they called "the lost Einsteins"—people who had the potential in their early adulthood to become inventors but, because of their life circumstances, never utilized their inventive capacities.[67] Women were found to be disproportionately among the lost Einsteins—or rather lost Marie Curies and Rosalind Franklins.[68] Entrepreneurship too has a strong gender gap. A Kauffman Foundation study finds increased rates of entrepreneurship by women only accounted for 39% of new entrepreneurs in 2016.[69] Moreover, women receive less funding for

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WORLDWIDE PATENTING: AN ANALYSIS OF FEMALE INVENTORSHIP 30 (2016), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/567518/Gender-profiles-in-worldwide-patenting.pdf [https://perma.cc/JU54-4E4G].

64. Kyle Jensen et al., *Gender Differences in Obtaining and Maintaining Patent Rights*, 36 NATURE BIOTECHNOLOGY 307, 309 (2018).

65. *Id.* A different study finds patents owned by women are of equal or better quality than those owned by men. *See* G. Steven McMillan, *Gender Differences in Patenting Activity: An Examination of the US Biotechnology Industry*, 80 SCIENTOMETRICS 683, 690 (2009).

66. Miriam Marcowitz-Bitton et al., *Unregistered Patents & Gender Equality*, 43 HARV. J.L. & GENDER (forthcoming 2020) (manuscript at 4), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3502178 [https://perma.cc/AB6H-4UPC].

67. Alex Bell et al., *Who Becomes an Inventor in America? The Importance of Exposure to Innovation*, 134 Q.J. ECON. 647, 706–09 (2019).

68. *Id.* at 709.

69. Jennifer E. Jennings & Candida G. Brush, *Research on Women Entrepreneurs: Challenges to (and from) the Broader Entrepreneurship Literature?*, 7 ACAD. MGMT. ANNALS 663, 667–70 (2013); EWING MARION KAUFFMAN FOUND., KAUFFMAN INDEX OF STARTUP ACTIVITY: NATIONAL TRENDS 12 (2017), https://www.kauffman.org/wp-content/uploads/2019/09/2017_Kauffman_Index_Startup_Activity_National_Report_Final.pdf [https://perma.

their ventures.[70] One study found that in 2017, only 2.2% of venture capital funding went to women-led companies,[71] and another revealed that women comprised only one-third of the leadership in Kickstarter projects with a single entrepreneur.[72]

While the gendered aspects of other areas of intellectual property law are relatively understudied, a series of recent studies suggest that disparities also exist in copyright ownership. United States Copyright Office registration data reveals that registered authors are predominantly male, especially in music, film, and software.[73] Intellectual property scholars have explored the ways in which legal doctrines exclude the fields of creativity and invention where women have traditionally been more active, such as recipes, fashion, and embroidery.[74] Gender inequality has

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cc/P4PR-44P8]; J. MCGRATH COHOON ET AL., THE KAUFFMAN FOUND. OF ENTREPRENEURSHIP, THE ANATOMY OF AN ENTREPRENEUR: ARE SUCCESSFUL WOMEN ENTREPRENEURS DIFFERENT FROM MEN? 3–4 (2010), https://www.kauffman.org/-/media/kauffman_org/research-reports-and-covers/2009/07/successful_women_entrepreneurs_510.pdf [https://perma.cc/ZWE5-3HAB]; Candida Brush, *Women Entrepreneurs: Bridging the Gender Gap in Venture Capital*, FORBES (Sept. 30, 2014, 10:26 PM), https://www.forbes.com/sites/babson/2014/09/30/women-entrepreneurs-bridging-the-gender-gap-in-venture-capital/#63dc9a833360 [https://perma.cc/JG65-ZE29]; Paul A. Gompers & Sophie Q. Wang, *Diversity in Innovation* 10 (Nat'l Bureau of Econ. Research, Working Paper No. 23082, 2017), https://www.nber.org/papers/w23082.pdf [https://perma.cc/5ZQU-65EG].

70. *See* Ding et al., *supra* note 57, at 665–66 (reporting that female academic patenters generally receive less NIH grant money and exposure to the commercial sector than their male counterparts); *see also* Fiona Murray & Leigh Graham, *Buying Science and Selling Science: Gender Differences in the Market for Commercial Science*, 16 INDUS. & CORP. CHANGE 657, 662 (2007) (examining the gender differences in both the supply and demand in commercialized science); SUE V. ROSSER, BREAKING INTO THE LAB: ENGINEERING PROGRESS FOR WOMEN IN SCIENCE 166–67 (2012) (pointing out that most venture capitalists are men, and gender discounting of women's work may lead to fewer women participating in commercialized science or technology).

71. Jillian Berman, *Why Are Just 12% of Inventors with a U.S. Patent Women?*, MARKETWATCH (Mar. 8, 2019, 10:52 AM), https://www.marketwatch.com/story/just-12-of-american-inventors-with-a-us-patent-are-women-2019-02-15 [https://perma.cc/7R43-HNZG].

72. Hadar Gafni et al., Gender Dynamics in Crowdfunding (Kickstarter): Evidence on Entrepreneurs, Investors, Deals, and Taste-Based Discrimination 17 (Dec. 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2442954 [https://perma.cc/445V-EE4J].

73. Robert Brauneis & Dotan Oliar, *Copyright's Race, Gender and Age: A First Quantitative Look at Registrations* 21–23 (George Washington Univ. Law Sch. Legal Studies Research Paper Series, Paper No. 2016-48, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2831850 [https://perma.cc/8F4L-S6B7]. For a discussion of race and copyright, see K.J. Greene, *African-American Innovators and Copyright Law—From Blues, Soul and Funk to Hip-Hop*, *in* HIP HOP AND THE LAW 277 (Pamela Bridgewater et al. eds., 2015).

74. *See* Debora Halbert, *Feminist Interpretations of Intellectual Property*, 14 AM. U. J. GENDER SOC. POL'Y & L. 431, 439, 445 (2006); Victoria F. Phillips, *Commodification, Intellectual Property and the Quilters of Gee's Bend*, 15 AM. U. J. GENDER SOC. POL'Y & L.

formed around the application of current intellectual property doctrines based on how originality is defined, reflecting and emphasizing social biases that benefit the patriarchy found in cultural inventions and arts.[75] The rules of IP are seemingly neutral, but nonetheless create or have inherent impediments.[76] Traditionally male aspects of innovation—technical inventions—tend to receive stronger protections, while "feminine" fields such as food and fashion are less protected by intellectual property law.[77] In the toy industry, which I studied in my book *You Don't Own Me*, Mattel owns the copyright to cultural icons like Barbie.[78] Mattel's litigation practices against smaller competitors, including former employees, has contributed to the decades-long dominance of the Barbie brand in the fashion doll marketplace. This has been the subject of much feminist discontent: Barbie is unrealistically perfect, plastic, white, and singular in Mattel's messaging. But the women who created much of the doll's designs—the seamstresses and makeup artists—were immigrant freelancers, who were not recognized as innovators or given credit for their creative work. When Mattel designer Carter Bryant had the idea of a competing doll, he turned to these hidden freelance women, who often worked out of their garages in the poorer areas of Los Angeles, to help him create his vision. In her review of *You Don't Own Me*, leading

359, 371–73 (2007); Emily Chaloner, Comment, *A Story of Her Own: A Feminist Critique of Copyright Law*, 6 I/S 221, 241–42 (2010).

75. Kara W. Swanson, *Cat Ladies, Quilters, and Creativity*, LANDSLIDE, Mar.–Apr. 2018, at 47, 48–49.

76. *See* Kara W. Swanson, *Intellectual Property and Gender: Reflections on Accomplishments and Methodology*, 24 AM. U. J. GENDER SOC. POL'Y & L. 175, 182–83 (2015).

77. *See* Ann Bartow, *Women in the Web of Secondary Copyright Liability and Internet Filtering*, 32 N. KY. L. REV. 449, 493 (2005); Dan L. Burk, *Do Patents Have Gender?*, 19 AM. U. J. GENDER SOC. POL'Y & L. 881, 910–11 (2011) [hereinafter Burk, *Do Patents Have Gender?*] (discussing the gendered aspects of feline HIV patent inventorship disputes); Rebecca Tushnet, *My Fair Ladies: Sex, Gender, and Fair Use in Copyright*, 15 AM. U. J. GENDER SOC. POL'Y & L. 273, 303–04 (2007); Swanson, *supra* note 76, at 185; *see also* Dan L. Burk, *Feminism and Dualism in Intellectual Property*, 15 AM. U. J. GENDER SOC. POL'Y & L. 183, 194 (2007) (discussing how the law has bifurcated creativity into mental and physical efforts, and physical efforts do not receive recognition and ownership, which often excludes females); Charles E. Colman, *Design and Deviance: Patent as Symbol, Rhetoric as Metric Part 2*, 56 JURIMETRICS 1, 19–20 (2015) (providing examples of court holdings on intellectual property that indicate gender bias); Laura A. Foster, *Situating Feminism, Patent Law, and the Public Domain*, 20 COLUM. J. GENDER & L. 261, 281–82 (2011) (exploring how copyright law benefits an unequal playing field and encourages a particular type of creativity based on western epistemologies of science); Shlomit Yanisky-Ravid, *Eligible Patent Matter—Gender Analysis of Patent Law: International and Comparative Perspectives*, 19 AM. U. J. GENDER SOC. POL'Y & L. 851, 866–70 (2011) (arguing that IP law promotes a gendered hierarchy where traditional male activities are protected and areas of female activity are excluded).

78. For more background material, please see ORLY LOBEL, YOU DON'T OWN ME: HOW *MATTEL V. MGA ENTERTAINMENT* EXPOSED BARBIE'S DARK SIDE (2017).

scholar Ann Bartow perceptively shows how copyright law shortchanges women both by its gender blindness, such as in the recent Supreme Court case granting intellectual property protection to cheerleading outfits by Starr Athletica, and in its gendered construction of creativity.[79]

The history of intellectual property law is inextricably intertwined with gender inequality. At the time IP was developed, women who created art, literature, music, paintings, and sculptures, or invented new technologies, would regularly provide a name of their male relatives (i.e. husband, father, or brother) and see copyrights and patents issued to these male proxies.[80] The ongoing gap in ownership of IP should be understood as stemming from multiple sources including gender inequality in scientific and technological education, biases, and discrimination at work and in market relations.[81] Moreover, a gender deficit in innovation can lead to innovation blind spots, such as engineering and designing products that fit men but not women. One example are out-of-position drivers, which take into consideration that women are on average shorter than men when testing for injury in automobile crash test dummies. In medicine and biology research, bias is exemplified by the failure to consider gender risk factors and failure to collect data that is diverse and reflects both genders. Another example is in data analysis of transportation and policy design, where data on care work—driving children to school, activities, and errands to care for one's family—is not collected and is discounted as nonmarket activity.[82] Thus, several interrelated strands of IP and equality inform the discussion, including research into the disparities in ownership and participation in creative and inventive activities as well as how intellectual property law may appear neutral but might have a gendered impact.[83]

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79. Ann Bartow, *Barbie in Bondage: What Orly Lobel's Book "*You Don't Own Me: How *Mattel v. MGA Entertainment* Exposed Barbie's Dark Side*" Tells Us About the Commoditization of the Female Body*, 29 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 435, 464, 468 (2019).

80. Burk, *supra* note 62.

81. Swanson, *supra* note 75, at 48; *Innovation, Creativity and the Gender Gap*, WORLD INTELL. PROP. ORG., https://www.wipo.int/ip-outreach/en/ipday/2018/innovation_creativity_gender_gap.html [https://perma.cc/2A5C-F87U] (last visited Feb. 2, 2020).

82. *See What Is Gendered Innovations?*, GENDERED INNOVATIONS, http://genderedinnovations.stanford.edu/what-is-gendered-innovations.html [https://perma.cc/MYJ5-BVUQ] (last visited Feb. 2, 2020).

83. Dan L. Burk, *Diversity Levers*, 23 DUKE J. GENDER L. & POL'Y 25, 42 (2015); Leigh A. Hansmann, *Sex, Selling Power, and Salacious Commentary: Applying the Copyright Fair Use Doctrine in the Trademark Context*, 2008 MICH. ST. L. REV. 843, 871; Sonia K. Katyal, *Performance, Property, and Slashing of Gender in Fan Fiction*, 14 AM. U. J. GENDER SOC.

IV. MODALITIES OF EXIT, VOICE, INNOVATION, EQUALITY

The relationship between innovation and inequality is a growing area of interdisciplinary focus. Here, I aim to connect the seemingly unrelated areas of mobility restrictions, speech rights, innovation, and equality and identify particular dynamics in contemporary labor markets. Hirschman's work was ambitious. He argued that the lens of exit and voice is relevant across the board to—as his book's subtitle suggests—firms, organizations, and states. But exit and voice for Hirschman are each singular paths, and the subjects of these paths choose between the two static options of exit or voice passively through continued work, continued consumerism, continued voting, or a switch in patronage.

Here, I suggest more nuanced ways to talk about exit and voice. Exit from a work position can take many shapes: the founding of another venture; a move to a competitor; a move to a different industry; or a move out of the region or the job market altogether. Similarly, voice is a rich concept. An employee who seeks to impact her work environment can increase her participation and seek more leadership roles, lean into her position, use formal internal grievance channels, or bring a lawsuit, including a class action, against her employer to trigger change. Heather Gerken, writing about the role of exit and voice in a different context, that of democratic participation by citizens, points to what I believe to be a related nuance to Hirschman's framework when she writes:

> Although Hirschman thought loyalty would dampen influence, one can find stray references in his work that hint of a quite different possibility—the possibility that there might be *another* avenue of influence beyond voice and exit. . . . At some points in the book, he vaguely links loyalty to membership and decisionmaking—momentarily moving away from the passive, consumer-oriented account he deploys in most of the book—and ever so briefly contemplates that members might have some direct role in the decisionmaking process.[84]

Restricting exit and voice harms all workers, but its harm to women and minorities is disproportionately greater. Moreover, the

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POL'Y & L. 461, 467–68 (2006); Kara W. Swanson, *Getting a Grip on the Corset: Gender, Sexuality, and Patent Law*, 23 YALE J.L. & FEMINISM 57, 64–65 (2011); Burk, *Do Patents Have Gender?*, *supra* note 77, at 907; Tushnet, *supra* note 77, at 304; Foster, *supra* note 77. *See generally* Bartow, *supra* note 79, at 435–76 (discussing the nexus between gender and intellectual property).

84. Heather K. Gerken, *Exit, Voice, and Disloyalty*, 62 DUKE L.J. 1349, 1361 (2013).

specific paths of exit and voice are patterned by inequality. That exit and voice restrictions can entail disproportionate harms on women should be understood as rising from several interrelated factors. First, women already face, on average, increased difficulties in switching positions and seeking alternative work because of search friction. Women on average are more bound by geographical restrictions and the challenges of dual career relationships. For example, studies of patterns of relocation of spouses with dual careers reveal the prioritization of husbands' careers because of both rational decisions about earning power and as a consequence of traditional gender norms.[85]

Second, because women are more likely to have a strong nonmonetary preference for a workplace that is free from discrimination, their bargaining power is reduced in the market for talent. Ironically, those who need more choices, because their preferences are shaped not simply by higher pay but also by critical factors like a corporate culture free of harassment and hostility, are also more likely to be penalized for seeking exit and voice options. Exit restrictions prevent such an employee from trying to find a company that better appreciates their talent and is more conducive to an ethical and inclusive environment, such as supporting a work-family balance and ethos. Conversely, the more exit opportunities are available, the more an organization will face competitive pressures to create an environment of equality as part of its retention efforts. Take, for example, the scenario where employers demand that mothers change the terms and conditions of their employment. The employee who signed a noncompete has neither voice nor exit under such circumstances; she is likely locked into an at-will relationship that offers neither job security nor outside opportunity.

Third, these disparate effects may further be aggravated by gender behavioral differences. Women's choices and speech are also patterned by increased risk aversion, negotiation deficits, and bias. Women may also disproportionately lack a social network that supports risk taking, making the challenging of the status quo all the more difficult. Drawing on a wealth of research showing gender-aligned differences in negotiations and risk tolerance, exit and voice restrictions are likely invoked and challenged differently along gender lines.[86]

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85. *See* Olav Sorenson & Michael S. Dahl, *Geography, Joint Choices, and the Reproduction of Gender Inequality*, 81 AM. SOC. REV. 900, 901 (2016).

86. Rachel Croson & Uri Gneezy, *Gender Differences in Preferences*, 47 J. ECON. LITERATURE 448, 451, 466 (2009); *see also* Lobel, *Knowledge Pays*, *supra* note 28 (manuscript at 10–13).

A. The Many Paths of Exit

The link between mobility and discrimination is still an underdeveloped field of research, but the empirical evidence is growing that restricting employees from moving competitively in the job market has harmful effects on equality. Economist Gary Becker suggested that discrimination could be eliminated through a competitive job market.[87] If Becker was correct, then the converse is also true: anticompetitive labor markets that restrict exit preserve discriminatory realities. Several new studies confirm that women in the workforce are negatively affected by labor market concentration—that is, they have fewer employers to choose from in an industry, and they face higher levels of friction than males, which in turn contributes to lower mobility and lower earnings.[88] Evidence is also emerging about the effects of reduced job mobility on racial inequality.[89]

Another body of new studies looks directly at noncompete clauses and their relation to gender. These new studies examine variations across regions in enforcement of noncompetes as well as policy changes that void noncompetes in states that previously enforced them, like Oregon and Hawaii. They consistently confirm that noncompetes harm women more than men, by disproportionately reducing their mobility, lowering their wages, and delaying their decision to found their own venture. One new study finds that noncompetes negatively affect women disproportionately, including in likelihood that a woman employee bound by a noncompete will found a new startup.[90] Another new study looking at a change in state law rendering noncompetes unenforceable finds that women disproportionately benefitted from the policy change. Women experienced wage increases of

87. *See* GARY S. BECKER, THE ECONOMICS OF DISCRIMINATION 159 (2d ed. 1971) ("Employer discrimination should, on the average, be less in competitive industries than in monopolistic ones.").

88. *See, e.g.*, Erling Barth & Harald Dale-Olsen, *Monopsonistic Discrimination, Worker Turnover, and the Gender Wage Gap*, 16 LABOUR ECON. 589, 596 (2009); David Card et al., *Firms and Labor Market Inequality: Evidence and Some Theory*, 36 J. LAB. ECON. S13, S32 (2018); Sydnee Caldwell & Emily Oehlsen, Monopsony and the Gender Wage Gap: Experimental Evidence from the Gig Economy 27 (Nov. 29, 2018) (unpublished manuscript), https://sydneec.github.io/Website/Caldwell_Oehlsen.pdf [https://perma.cc/J6B5-HJYC].

89. Pierre Deschamps & José de Sousa, *Labor Mobility and Racial Discrimination* 38 (Munich Pers. RePEc Archive, MPRA Paper No. 60572, 2014), https://mpra.ub.uni-muenchen.de/60572/1/MPRA_paper_60572.pdf [https://perma.cc/6CMC-8289].

90. Matt Marx, Employee Non-Compete Agreements, Gender, and the Timing of Entrepreneurship 23 (May 4, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3173831 [https://perma.cc/S4J5-LC4M].

3.5% relative to 1.5% for men.[91] Finally, a third study finds that noncompetes increase the racial and gender wage gaps. The study finds that the earnings effects of noncompete enforceability on women and black workers is twice as large as the effect on white men.[92]

When employers restrict exit, one obvious result is that exit is reduced. A contract that poses a restraint on one's ability to fully engage in their profession or increases the expected risks of exit leads to fewer employees taking action by exit. This does not mean that employees will never choose to take these risks and ignore the restraint, but this will occur with less frequency and in patterned ways. Thus, beyond the decline in mobility, exit can take on varying shapes and forms. Exit is a complicated patterned premise: an employee that is discontent with her employer can choose several of the following exit paths:

1. **No Exit**: Delayed decision to leave.
2. **Traditional Exit**: Move to a competitor.
3. **Regional Exit**: Move to far away competitor, exiting both the job and region.
4. **Industry Exit**: Move to a noncompetitor, exiting the industry.
5. **Entrepreneurial Exit**: Move to found a company, exiting salaried employment to ownership.
6. **Gig Exit:** Move from traditional modes of work to gigs.
7. **Job Market Exit**: Leaving the job market to pursue full-time education, parenting, early retirement, etc.

As noted above, empirical data reveals that women are impacted by noncompetes more than men in their decision to become an entrepreneur and founder of a new company. In this context, gendered risk aversion might mean that not only is exit overall reduced by covenants that prohibit postemployment competition but exit that does occur is patterned by gender. Entrepreneurial exit, as different from traditional exit, is disproportionately harmed. Now consider the fifth suggested path: gig exit. If women are not valued to the same degree as men in

91. Michael Lipsitz & Evan Starr, Low-Wage Workers and the Enforceability of Non-Compete Agreements 18–22 (Dec. 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3452240 [https://perma.cc/NUN3-SQ9Y] (exploring a legislative change in Oregon).

92. Matthew S. Johnson et al., The Labor Market Effects of Legal Restrictions on Worker Mobility 27 (Sept. 22, 2019) (unpublished manuscript), https://ssrn.com/abstract=3455381 [https://perma.cc/TS3R-CJTY].

traditional settings, might they opt to employ their innovative capacities from outside the regular frames of invention? Harvard Business Professors Karim Lakhani and Lars Jeppesen examined open invention processes and found that innovation at times occurs through outsourced competitions.[93] Global competitions are run by major organizations ranging from NASA to Proctor & Gamble, and typically involve announcing an unsolved problem online and offering awards for submitted solutions. Founded in 2001, InnoCentive is the largest marketplace of problem-solving bids and today has hundreds of thousands of solver-users. Lakhani and Jeppesen studied nearly 200 InnoCentive competitions. They discovered that more often than not, outsiders won. In some competitions, individuals with no experience beat hundreds of insiders who have been working in an industry for years. InnoCentive's blind review process means that the names of the contestants are removed from the files before judges are given access. Lakhani and Jeppesen hypothesized that women would actually do better under these conditions on the premise that if women have been traditionally excluded from traditional inventive settings, then they possessed untapped knowledge as outsiders. A blind-review global online competition would be a great place to tap into their talents. The findings align with this hypothesis and are striking: women who submitted solutions to InnoCentive competitions were 23.4% more likely to win than a male contestant, regardless of the field of competition.[94] The researchers conclude that "women are, on the whole, more likely to be in 'the outer circle' of the scientific establishment." They write that "trained and talented individuals who could not enter core positions in the fields, i.e., 'women scientists,' might be more capable of approaching problems in fresh ways."[95] The finding supports the thesis that we have a wealth of untapped talent pools that is driven out of the traditional creative processes and operates in the margins of market activity. This outer circle in part is impacted by human capital policy that shapes organizational exit and voice.

As Jason Furman, former Chairman of the Council of Economic Advisers of the White House, explained, "By reducing workers' job options, noncompete agreements force workers to accept lower wages in their current jobs, and may sometimes induce workers to leave their occupations entirely, foregoing

93. Lars Bo Jeppesen & Karim R. Lakhani, *Marginality and Problem-Solving Effectiveness in Broadcast Search*, 21 ORG. SCI. 1016, 1020–21 (2010).

94. *Id.* at 1020–21, 1028–30.

95. *Id.* at 1020.

accumulated human capital."[96] This loss to an industry of accumulated human capital that leaves an occupation entirely is a loss for innovation and the economy as a whole, driving valuable employees out of the industry and the region.[97] But it seems that this loss is a disproportionate loss of women and those traditionally underrepresented in innovation, contributing to the vicious cycle of the innovation deficit.

There are reasons to suspect that this deficit cycle also persists with regard to race. In a recent case, for example, on the enforcement of a noncompete, the plaintiff, Tracy Miller was an African-American worker employed by Illinois Central Railroad.[98] After receiving an offer from a competitor, Miller was told by his employer that he could not take it because he had signed a noncompete. Miller argued in the lawsuit that the same noncompete went unenforced multiple times when several of his white coworkers accepted employment with other industry competitors.[99] The recent empirical findings by Matthew Johnson and his collaborators—that a state law reform rendering noncompetes unenforceable led to greater gains for workers of color than for white workers—support such anecdotal cases about disparate burdens that exit restrictions impose on minorities.[100]

Secrecy—on salary information, diversity information, or corporate culture information (harassment patterns or lack thereof at a firm)—also contributes to a push out of women and minorities in the job market altogether. Economists have long shown that the availability and accuracy of job information could reduce workforce dropouts at least as efficiently as, and without the costs of, worker training programs.[101] Exit restrictions might

96. Jason Furman, Chairman, Council of Econ. Advisers, Beyond Antitrust: The Role of Competition Policy in Promoting Inclusive Growth, Address at the Searle Center Conference on Antitrust Economics and Competition Policy 13 (Sept. 16, 2016) (transcript available at https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160916_searle_conference_competition_furman_cea.pdf [https://perma.cc/TBV6-8HT2]) (citing OFFICE OF ECON. POL'Y, *supra* note 37, at 3.

97. *See* Matt Marx et al., *Regional Disadvantage? Employee Non-Compete Agreements and Brain Drain*, 44 RES. POL'Y 394, 397–401 (2015).

98. Complaint at 1, Miller v. Canadian Nat'l R.R. Co., No. 2:19-cv-02152 (W.D. Tenn. Mar. 6, 2019).

99. *Id.* at 2.

100. Johnson et al., *supra* note 92, at 29–30.

101. *See, e.g.*, Edward E. Lawler III, *Secrecy About Management Compensation: Are There Hidden Costs?*, 2 ORGANIZATIONAL BEHAV. & HUM. PERFORMANCE 182, 188 (1967); J.J. McCall, *Economics of Information and Job Search*, 84 Q.J. ECON. 113, 118–19 (1970); Emiliano Huet-Vaughn, *The Unexpected Benefit of Telling People What Their Coworkers Make*, ATLANTIC (Apr. 8, 2014), https://www.theatlantic.com/business/archive/2014/04/the-unexpected-benefit-of-telling-people-what-their-coworkers-make/360301/ [https://perma.cc

mean a professional detour out of the industry or a forced sabbatical out of the labor market or staying longer at a workplace but tracking out of the most competitive internal advancement paths. These exit paths are distinctly gendered.

B. The Multiple Shades of Silence: Voice as an Innovation Resource

The recent revelations about pervasive problematic cultures in certain work environments and codes of silence in large corporations further raise the concern that restrictive covenants disproportionately harm exit and voice of more vulnerable workers, such as women, minorities, and older workers. As I recently examined in an article in *Fortune*, titled *The Prisoner's Dilemma in Airing Fox's Corporate Culture*, company policies and contracts that impose risks for an employee's ability to speak out against unethical and unlawful workplace conduct are contrary to our fundamental principles of freedom of speech. In that article I theorized the dilemma of voice in the workplace as a prisoner's dilemma:

> [O]uting your boss for sexual harassment is akin to what game theorists call "the prisoner's dilemma." To achieve the optimal outcome, every employee must make the correct decision without knowing in advance her co-workers' course of action. What if everyone knows that the tyrant CEO habitually harasses his female employees, but no one risks speaking out? Result: The harassment continues and everyone loses. Alternatively, what if just one woman confronts him? She likely risks being ousted as a troublemaker (Carlson, according to the lawsuit, was called "man-hater," warned to "get along with the boys," and eventually phased out of the network). This is the worst option for a reasonably risk-averse employee. But what if *everyone* airs the network's dirty laundry? Everyone, except for the debauched boss, wins a chance of a healthier work environment.[102]

But voice also impacts innovation and progress. Indeed, in nature and just about every culture, a strong voice is widely considered to be dominant and powerful and to yield the attention

/JJ52-MRWK]; Emiliano Huet-Vaughn, Do Social Comparisons Motivate Workers? A Field Experiment on Relative Earnings, Labor Supply and the Inhibitory Effect of Pay Inequality 3 (Aug. 2015) (unpublished manuscript), https://sites.google.com/site/ehuetvaughn/DoSocialComparisonsMotivateWorkers.pdf [https://perma.cc/6JUG-LUJ2].

102. Lobel, *supra* note 19.

of others.[103] Not surprisingly, as women strive for equality and impact, research shows that women's voices today are significantly deeper than in the past.[104] The relationship between exit restrictions and reduced voice should be also clear: in today's labor markets, when exit involves risks, voice is equally a risky endeavor. In the reality of at-will, the asymmetry is striking—an employee can be fired at any time for no reason but cannot leave.

Silence is toxic. It hides the truth and empowers those who otherwise would fear the truth. Inequality expresses itself in many ways; similarly, the suppression of voice varies across organizations and industries. When corporate contracts, practices, and culture limit employees' ability to speak up against inequality and to advocate for organizational change, the many shades of inequality and status quo are sustained.

Turning to examine how lack of voice plays out in inventive and creative industries is illuminating. In research institutes, women scientists systematically face the challenges of a "chilly climate."[105] The chilly climate refers to institutional environments that systematically exclude women from full participation and power even while they continue to be employed by the institution. A recent high-profile case comes out of the Salk Institute, a short walk from where I live in La Jolla, California. The lawsuits against the Salk Institute revealed it to be "one of the hundreds of STEM institutions characterized by this theory, which posits that STEM companies have a culture of discrimination against women and minorities marked by 'exclusion, devaluation and marginalization' of women, especially pertaining to grants and leadership."[106] In such settings of scientific research, a special emphasis is put on collaboration, partnership, and access to a network. In these environments, women and minorities experience specific challenges. In academia, female researchers remain a minority, publish fewer papers, and hold less prestigious chairs and

103. Joey T. Cheng et al., *Listen, Follow Me: Dynamic Vocal Signals of Dominance Predict Emergent Social Rank in Humans*, 145 J. EXPERIMENTAL PSYCHOL. 536, 542 (2016).

104. Cecilia Pemberton at the University of South Australia studied the voices of two groups of Australian women between the ages of 18–25 years old across separate generations. Cecilia Pemberton et al., *Have Women's Voices Lowered Across Time? A Cross Sectional Study of Australian Women's Voices*, 12 J. VOICE 208, 209–10 (1998).

105. ROBERTA M. HALL & BERNICE R. SANDLER, PROJECT ON THE STATUS & EDUC. OF WOMEN, THE CLASSROOM CLIMATE: A CHILLY ONE FOR WOMEN? 11–12 (1982); Cheryl L. Maranto & Andrea E.C. Griffin, *The Antecedents of a 'Chilly Climate' for Women Faculty in Higher Education*, 64 HUM. REL. 139, 153–54 (2011); Daphne E. Pedersen & Krista Lynn Minnotte, *Workplace Climate and STEM Faculty Women's Job Burnout*, 29 J. FEMINIST FAM. THERAPY 45, 49 (2017).

106. Charlotte Pearson, *Emerson, Lundblad, and Jones v. The Salk Institute*, WOMEN LEADING CHANGE, Oct. 10, 2018, at 37, 38 (quoting Maranto & Griffin, *supra* note 105, at 140).

positions. The Salk case demonstrates the distinct challenges that perpetuate gender disparity in research. In 2017, Beverly Emerson, Ph.D., Victoria Lundblad, Ph.D., and Katherine Jones filed complaints against the Salk Institute alleging gender discrimination.[107] These women made up three of the four female Full Professors at the Salk Institute, which they alleged operates as an "old boys' club,"[108] employing twenty-nine male Full Professors.[109] Although the Salk Institute has claimed itself an Equal Opportunity Employer "committed to an environment that is free from all forms of harassment, discrimination, bullying or other inappropriate or disrespectful conduct, whether physical, verbal or visual,"[110] this had not been the experience of the top scientists who had stayed at Salk in their combined seventy-four years at the Institute.[111] Reports about the Institute in 2003 and 2016 provided additional evidence of a "substantial and long-standing problem in recruiting, promoting and retaining women faculty."[112] IRS forms revealed that the women's salaries were the lowest among faculty, including a male professor who had accomplished less and had been at the Institute for significantly less time.[113] At the Institute, women primary investigators were systematically disadvantaged by lower grant funding, less access to donors, and smaller work spaces. And here lies one significant voice suppression: who gets to speak to donors. In the lawsuit, the three women scientists' laboratories were small and understaffed. They claimed that they received less space and less resources and were excluded from high-value funding opportunities. The largest female Full Professor's laboratory at the Salk Institute had four staff members. The average male Full Professors' laboratories had eleven staff members, with the largest lab having fifty-three members. The women scientists were routinely asked to successively fire staff, ultimately reducing their laboratory size significantly—a practice referred to, according to the lawsuit, as

107. Complaint at 1, 3, Emerson v. Salk Inst. for Biological Studies, No. 37-2017-00026375-CU-OE-CTL (Cal. Super. Ct. July 18, 2017) [hereinafter Emerson Complaint]; Complaint at 1, 13, Lundblad v. Salk Inst. for Biological Studies, No. 37-2017-00025248-CU-OE-CTL (Cal. Super. Ct. July 11, 2017) [hereinafter Lundblad Complaint]; Complaint at 1–2, Jones v. Salk Inst. for Biological Studies, No. 37-2017-00025159-CU-OE-CTL (Cal. Super. Ct. July 11, 2017) [hereinafter Jones Complaint].

108. Emerson Complaint, *supra* note 107, at 2 & n.1, 11; Lundblad Complaint, *supra* note 107, at 4, 11; Jones Complaint, *supra* note 107, at 2, 5.

109. Jones Complaint, *supra* note 107, at 6.

110. *Conduct Policy*, SALK INST. FOR BIOLOGICAL STUD., https://www.salk.edu/conduct-policy/ [https://perma.cc/82EY-VMAF] (last visited Mar. 27, 2020).

111. Emerson Complaint, *supra* note 107, at 3; Lundbland Complaint, *supra* note 107, at 4; Jones Complaint, *supra* note 107, at 5.

112. Emerson Complaint, *supra* note 107, at 6–7.

113. *Id.* at 12–13; Jones Complaint, *supra* note 107, at 8.

the "Death Spiral."[114] It's a vicious circle: by reducing laboratory staff, the laboratory becomes less productive, and grants are not renewed, further reducing the resources available for the women scientists. Like so many other cases, the discrimination case against the Salk Institute ended with a settlement, which includes a nondisclosure agreement, such that the women involved in the lawsuit are now prohibited from speaking any further about their experience.[115]

In institutional settings, voice can also take the form of credit and participation in key innovation and leadership roles. There is evidence that women scientists at times opt to receive credit in the authorship of research papers and give up patent rights, though they are entitled to both.[116] Again, these patterns suggest ways in which nonmonetary preferences of voice shape participation (and the formal path of participation, e.g., patent authorship) in inventive activity.

Like exit, voice is a layered premise: an employee has, or lacks, multiple tools and avenues of expression including:

1. Leadership
2. Access to Financial Resources
3. Credit
4. Alliances
5. Promotion
6. Job Security
7. Impact
8. Knowledge
9. Reporting Channels

Above, we explored a range of categories of information that is increasingly subject to nondisclosure—know-how and skill, compensation information, diversity information, and knowledge about harassment and hostile work environment. This means that employees incur risks if they attempt to share what they know with coworkers, prospective employers, investors, or prospective colleagues. A closer look at the experience of women industry by industry can help shed light on the dynamics of exit, voice, innovation, and equality.

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114. Emerson Complaint, *supra* note 107, at 6, 15–16.

115. *See* Mallory Pickett, '*I Want What My Male Colleague Has, and That Will Cost a Few Million Dollars*,' N.Y. TIMES (Apr. 18, 2019), https://www.nytimes.com/2019/04/18/magazine/salk-institute-discrimination-science.html [https://perma.cc/SCM3-CYV3].

116. Francesco Lissoni et al., *Inventorship and Authorship as Attribution Rights: An Enquiry into the Economics of Scientific Credit*, 95 J. ECON. BEHAV. & ORG. 49, 67 (2013).

The absence of voice also relates to patterns of exit. One of the great impediments to meaningful diversity in the inventive and creative industries is the leaky pipeline. Women start in the lower ranks—in Ph.D. programs, postdocs, lower-level tech positions—at rather good rates, but the attrition rates for women in STEM are high.[117] Women in high tech are far more likely than men to leave the industry within one year because they experience gender bias.[118] To mix metaphors, diversity becomes a revolving door rather than a secure pipeline.[119] Moreover, the act of exit itself can involve voice or silence. When an employee leaves a company, they can describe their discontent publicly or leave quietly, silently, and hide. Settlement agreements, secrecy signed as part of a severance package, and nondisparagement clauses all serve to reduce voice upon exit. The quiet exodus of women means that change doesn't happen, and it signals to other women that voice is not a viable option.

There is a dearth of studies examining how an equal environment that values diverse voices relates to innovation. But some evidence exists suggesting a positive correlation. A 2019 industry study by Accenture finds that firms with a culture of equality also have a nearly six times higher innovation mindset than their counterparts.[120] Using a model that combined employee survey results with published labor force data, Accenture measured the willingness and ability of employees to innovate as well as the company's approach to equality, including an empowering environment. The research surveyed more than 18,000 professionals in twenty-seven countries online and more than 150 C-suite executives in eight countries via phone. The research found that employees in robust cultures of equality are six times more likely to say that nothing holds them back from innovating (40% in most equal cultures versus 7% in least equal cultures).[121] Among the strongest factors for a culture of equality, the research finds, are obviously diversity, including a diverse

117. Pedersen & Minnotte, *supra* note 105, at 49.

118. Jena McGregor, *Keeping Women in High-Tech Fields Is Big Challenge, Report Finds*, WASH. POST (Feb. 12, 2014), https://www.washingtonpost.com/business/economy/keeping-women-in-high-tech-fields-is-big-challenge-report-finds/2014/02/12/8a53c6ac-93fe-11e3-b46a-5a3d0d2130da_story.html [https://perma.cc/4QVN-93FC].

119. Lisen Stromberg, *Problem with Women in Tech? The Pipeline or the Revolving Door*, HUFFPOST (June 3, 2015), https://www.huffpost.com/entry/problem-with-women-in-tech-the-pipeline-or-the-revolving-door_b_6992522 [https://perma.cc/6JPZ-TZ5U].

120. ELLYN SHOOK & JULIE SWEET, ACCENTURE, GETTING TO EQUAL 2019: CREATING A CULTURE THAT DRIVES INNOVATION 2, 32 (2019), https://www.accenture.com/_acnmedia/Thought-Leadership-Assets/PDF/Accenture-Equality-Equals-Innovation-Gender-Equality-Research-Report-IWD-2019.pdf [https://perma.cc/U3HC-FPUH].

121. *Id.* at 7–8, 27–32.

leadership team, but also such factors as providing skills training, flexible working arrangements, and respect for work-life balance.[122] According to the study, "global gross domestic product would increase by up to US$8 trillion by 2028 if innovation mindset in all countries were raised by 10%."[123]

The report connects the feeling of belonging to the likelihood of innovation: "No matter who or where they are, if people feel a sense of belonging and are valued by their employers for their unique contributions, perspectives and circumstances, they are empowered to innovate more."[124] A culture of equality is multifaceted. It includes conveying trust and respect of employees, transparency on measures of equality, and policies that support work-family balance and flexibility. The Accenture report concludes that "building a culture of equality . . . is not just an ethical imperative, but a business priority."[125]

When equality is viewed as not only morally desirable but strategically valuable, industries could have an increased incentive to focus on equality and voice as a competitive advantage. Regional competition over one's talents can be a strategy for equality, innovation, and voice. An early case of geographies of exit and voice is that of the passing of Married Women's Property Acts in the mid-nineteenth century. Northeastern and Western states needed women for the workforce. The ability of women to legally control their earned wages and enter into contracts in these states was a draw to move to these states and encouraged women to change residences.[126] Today, cities vary in their ability to draw diverse talent. Sociologist Richard Florida researched what he calls a city's "bohemian index"[127] as well as its "[g]ay [i]ndex."[128] He finds that

122. *Id.* at 18–19.

123. *Id.* at 3. In a controversial book, *The Spirit Level*, which has been subject to much criticism on its empirical accuracy, Richard Wilkinson and Kate Pickett argued that more equal societies also have other economic benefits including higher patenting rates. "We used data from the World Intellectual Patent Organi[z]ation. This shows patents per capita for Portugal at 0.6 and the USA at 1.0. In contrast, patents per capita for Japan are 7.8 and for Sweden 30.1." RICHARD WILKINSON & KATE PICKETT, THE SPIRIT LEVEL: WHY GREATER EQUALITY MAKES SOCIETIES STRONGER 225 (2011); *The Spirit Level Debate – A Summary*, UK TAXPAYERS' ALLIANCE (Jan. 4, 2011), https://www.taxpayersalliance.com/the_spirit_level_debate_a_summary# [https://perma.cc/6WJX-6GWQ].

124. SHOOK & SWEET, *supra* note 120, at 3.

125. *Id.* at 2.

126. *See* Jayme S. Lemke, *Interjurisdictional Competition and the Married Women's Property Acts*, 166 PUB. CHOICE 291, 295, 299 (2016).

127. Richard Florida, *Bohemia and Economic Geography*, 2 J. ECON. GEOGRAPHY 55, 59 (2002).

128. Richard Florida, *The Geography of Tolerance*, CITYLAB (July 16, 2012), htt

places that have more tolerance and openness to gay communities also experience more creativity. Agglomeration economies—geographical clusters of innovation—are a draw for diversity. Research also shows that "power couples—couples in which both spouses" have college degrees—are highly concentrated in cities.[129] Returning to the recent patenting studies, the data shows a correlation, though of course causal inferences are something we need to tread cautiously. Women fare better in these geographic areas. The states on the West and East coasts have a higher share of women inventors, though still very low—around 15% in New York and Massachusetts and 14% in California.[130]

V. CONCLUSION

The exploration of exit and voice and their relation to innovation and equality underscores the need to better integrate policy fields. A decade ago, I wrote an article called *The Renew Deal*, in which I argued that law as well as legal scholarship is overly fragmented into distinct, specified subfields and that "doctrinal divides and boundaries between legal fields are contingent and are often defined through negotiation and revision."[131] I suggested that most social problems involve multiple issues and interconnections between fields of law, such as employment, business, and intellectual property. I suggested that "the focus of our zoom lens determines much of what we see in the complex world we face."[132] As the framework of exit, voice, innovation, and equality shows, we need to ask questions about the bridges and patterns that form at the intersections of policy.

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ps://www.citylab.com/equity/2012/07/geography-tolerance/2241/ [https://perma.cc/NT8C-SJQN].

129. Janice Compton & Robert A. Pollack, *Why Are Power Couples Increasingly Concentrated in Large Metropolitan Areas?* 2, 25 (Nat'l Bureau of Econ. Research, Working Paper No. 10918, 2006), https://www.nber.org/papers/w10918.pdf [https://perma.cc/WHW4-UXYE]; Richard Florida, *The Rise of the Urban Power Couple*, CITYLAB (Nov. 1, 2018), https://www.citylab.com/life/2018/11/rise-urban-power-couple/571807/ [https://perma.cc/3GW5-MPYE].

130. USPTO, *supra* note 53, at 7 (reflecting the women investor rates by state during 2012–2016).

131. Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 385 (2004).

132. *Id.*