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Attorney Competence in the Algorithm Age

Nantiya Ruan

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Introduction

Without much fanfare, in 2014, Amazon began building an automated hiring system to review resumes to more efficiently and effectively search for top talent.[1] Much like how their shoppers rate products on Amazon, the AI hiring tool gave candidates scores from one to five stars, which Amazon hoped would lead them to choosing the best candidates for their jobs. A major problem became apparent within a year: for their software developer jobs, the program discriminated against women, to the benefit of hiring men, and Amazon scrapped the project.[2]

The surprising part of this story is not that Amazon invested so heavily in AI hiring—algorithmic decision making in hiring is becoming increasingly popular, with one estimate suggesting that vendors selling such products is a $500 million dollar business.[3] Other large companies are investing in similar technologies, including Goldman Sachs and Hilton Worldwide Holdings, in order to automate portions of the hiring process.[4]

What is notable is that a company, especially one the size of Amazon, found the discrimination and deleted the project before launching and allowing its destructive effects to be felt in the labor market. And what is missing from the Reuters investigative report is the role Amazon's attorneys had in the project and resulting decision to dismantle the program.

This article makes the case for labor and employment attorneys—especially in-house counsel and management attorneys—to find

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1. Jeffrey Dastin, *Amazon Scraps Secret AI Recruiting Tool That Showed Bias Against Women*, Reuters (Oct. 10, 2018, 6:04 PM), https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G [https://perma.cc/5PDU-CF4F].

2. *Id.*

3. Cathy O'Neil, Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy 108 (2016).

4. *See* Dastin, *supra* note 1.

guidance from their state's professional responsibility rules in advising their corporate clients about algorithmic decision-making in recruiting and hiring workers. The ethical rules outlining attorneys' duties of competence and advisement combine to require due diligence for attorneys to become familiar with the technology relied upon by their clients in hiring, including its effects and outcomes related to protected categories of workers.

Even though this technology too often lacks transparency, attorneys cannot blindly rely on algorithmic decision making without becoming familiar with its effects and consulting with experts. First, this article outlines the two professional responsibility rules most relevant to the emerging recruitment and hiring technologies: Model Rule 1.1 (the duty of attorney competency) and Model Rule 2.1 (the duty of client advisement). These rules work together to impose a duty of technology competence on attorneys who advise clients using emerging technologies in their hiring practices. Next, the article analyzes three recruitment and hiring practices using algorithmic decision-making: online advertisement platforms; applicant screening tools; and psychometric assessments (personality tests, digital interviewing, and gamified assessments). These practices are becoming more prevalent in candidate selection and hiring, but they come with significant risk that attorneys should be aware of. Lastly, the article concludes by discussing the ways that employment lawyers can use reasonable care in representing employers who recruit and hire in this algorithmic age.

I. Attorneys' Ethical Duties in Technology Competence and Advising Clients

The professional responsibility standards for attorneys include two model rules that together, guide attorneys on their responsibity in emerging technologies in selection and hiring practices. Attorneys are required to engage in competent representation (Model Rule 1.1),[5] while also providing competent advisement (Model Rule 2.1).[6] As analyzed below, these rules work together to counsel due diligence for attorneys to become familiar with the technology relied upon by their clients in hiring, including its effects and outcomes.

A. Competent Representation and Emerging Technologies

As part of their professional responsibilities, attorneys are obligated to provide competent representation to their clients. "Maintaining the integrity and improving the competence of the bar to meet the highest standards is the ethical responsibility of every lawyer."[7] Competence is both a general policy goal and a specific obligation that is

5. Model Rules of Pro. Conduct r. 1.1 (Am. Bar Ass'n 2016).
6. *Id.* r. 2.1.
7. Model Code of Pro. Resp. EC 1-1 (Am. Bar Ass'n 1980).

owed to clients, courts, as well as adversaries, and an attorney's failure to act competently may result in disciplinary action.[8]

As to the duty owed to clients, the ABA Model Rules of Professional Conduct (Model Rules) require: "A lawyer shall provide competent representation to a client. Competent representation requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation."[9] Moreover, several ABA Model Code of Professional Responsibility (Model Code) provisions address the need for competency in lawyering. Ethical Consideration 6-1 states:

> Because of [a lawyer's] vital role in the legal process, a lawyer should act with competence and proper care in representing clients. [The lawyer] should strive to become and remain proficient in [] practice and should accept employment only in matters which [the lawyer] is or intends to become competent to handle.[10]

Indeed, as Ethical Consideration 2-30 points out that "[e]mployment should not be accepted by a lawyer when [the lawyer] is unable to render competent service."[11] Disciplinary Rule 6-101(A) requires that a lawyer "shall not . . . [h]andle a legal matter which [the lawyer] knows or should know that [the lawyer] is not competent to handle, without associating with [] a lawyer who is competent to handle it."[12] Accordingly, if an attorney cannot provide competent service, the attorney must decline to represent the potential client.[13]

These notions of attorney competency harken back to the early days of the legal profession—as bedrock principles that promote lawyering as a profession with a strong ethical code. More recently, developing technologies have rapidly impacted the practice of law in ways that challenge traditional notions of attorney competency. In 2009, the ABA convened the Ethics 20/20 Commission to study how the Model Rules should address the use of technology in legal practice.[14] The Commission drafted a set of six Resolutions as the culmination of its three-year study of how "globalization and technology are transforming the practice of law and how the regulation of lawyers should be updated in light of those developments."[15] The focus of the Commission was to provide guidance for how the Model Rules should adapt to the

8. *Id.* DR 6-101.

9. Model Rules of Pro. Conduct r. 1.1.

10. Model Code of Pro. Resp. EC 6-1.

11. *Id.* EC 2-30(A).

12. *Id.* DR 6-101(a)(1).

13. See Bruce Ching, *Attorney Referral, Negligence, and Vicarious Liability*, 33 S. Ill. U. L.J. 217, 220 (2009).

14. Am. Bar Ass'n Comm'n on Ethics 20/20, Introduction & Overview 1, 2 (2013), https://www.americanbar.org/content/dam/aba/administrative/ethics_2020/20121112_ethics_20_20_overarching_report_final_with_disclaimer.pdf [https://perma.cc/WN34-RSG3].

15. *Id.* at 1.

ever-changing world of technology and its future impact on the legal profession.[16]

Some commentators have been critical of the limitations of the Resolutions.[17] One academic pointed out:

> To a large extent, the ABA's attitude to modern technology reminds me of the famous Australian folk song, Waltzing Matilda: the song is not a waltz, and it is not about a woman named Matilda. The ABA's recent changes to the Model Rules purport to make the Rules up-to-date and contemporary in light of high technology, but they do not. They refer to modern technology, but they are not about it. For that reason, these revisions may not be very influential.[18]

One of the Resolutions adopted to amend the Model Rules was a revision to the Duty of Competence. The ABA's House of Delegates voted to amend Comment 8 to Model Rule 1.1: "To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, *including the benefits and risks associated with relevant technology*, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject."[19]

Comment 8's lack of specificity may be intentional: the Chief Reporter of the 20/20 Commission explained "the specific skills lawyers will need in the decades ahead are difficult to imagine."[20] While the Comment does not impose any specific obligations on lawyers, "it does act as a reminder that providing competent representation includes adapting to technological changes."[21] The language of the Comment indicates that a lawyer is obligated to be knowledgeable of practice technology, and it can also be read to impose an obligation to keep abreast of the specific "technology in the industries to which their

16. AM BAR ASS'N COMM.N ON ETHICS 20/20, REVISED RESOLUTION 105A, at 1 (2012), https://www.americanbar.org/content/dam/aba/administrative/ethics_2020/20120808_revised_resolution_105a_as_amended.authcheckdam.pdf [https://perma.cc/SGF6-43SG]

17. *See, e.g.*, Katherine Medianik, *Artificially Intelligent Lawyers: Updating the Model Rules of Professional Conduct in Accordance with the New Technological Era*, 39 CARDOZO L. REV. 1497, 1514 (2018) (commenting that Comment 8 is "insufficient" and "does not provide a concrete course of action for lawyers to take to avoid incompetence"); Ronald D. Rotunda, *Applying the Revised ABA Model Rules in the Age of the Internet: The Problem of Metadata*, 42 HOFSTRA L. REV. 175, 177 (2013).

18. Rotunda, *supra* note 17, at 177.

19. MODEL RULES OF PRO. CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2016) (emphasis added).

20. Steven M. Puiszis, A Lawyer's Duty of Technological Competence 1 (2017) (unpublished manuscript), https://www.americanbar.org/content/dam/aba/events/professional_responsibility/2017%20Meetings/Conference/conference_materials/session4_information_governance/puiszis_lawyers_duty_technological_competence.pdf [https://perma.cc/2S4E-GA6J] (citing Andrew Perlman, *The Twenty-First Century Lawyer's Evolving Ethical Duty of Competence*, 22 PRO. LAW. 24, 25 (2014)).

21. Jamie J. Baker, *Beyond the Information Age: The Duty of Technology Competence in the Algorithmic Society*, 69 S.C. L. REV. 557, 560–61 (2018).

clients belong."[22] And "[g]iven that this falls under the Duty of Competence . . . the foundation of technology competence means, in part, that lawyers are now 'required to take reasonable steps to protect their clients from ill-conceived uses of technology.'"[23]

As of 2018, thirty-one states had adopted this "Duty of Technology Competence," with twenty-five doing so verbatim.[24] A few states go further than Comment 8 by being "ahead of the ethical curve in directly [holding lawyers] responsible for competent use of [new] technology."[25] Florida, for example, requires attorneys "to maintain the requisite knowledge and skill, [noting that] a lawyer should engage in continuing study and education,"[26] while New York similarly mandates that attorneys use "reasonable care [to] stay abreast of technological advances."[27] Delaware took it a step further when its supreme court "amended its rules as they relate to technology and created a new arm of the court, the Commission on Law and Technology, to educate both the bench and the bar on matters related to technology and the newly amended rules."[28] Importantly, Arizona instituted a significantly more stringent standard, requiring lawyers to "have . . . competence [in] evaluat[ing] the nature of the potential threat to client[s] . . . and to evaluate and deploy appropriate computer [resolutions]."[29]

B. Attorney Specialization and the Duty of Advisement

Attorneys also have a duty to be competent advisors of their clients. The heading of Model Rule 2.1 is "The Lawyer as Advisor." Model Rule 2.1 requires that "[i]n representing a client, a lawyer shall exercise independent professional judgement and render candid advice." [30] The second sentence of the Rule is permissive: "In rendering advice, a lawyer may refer not only to law but to other considerations such as moral, economic, social and political factors, that may be relevant to the

22. Jamila Jefferson-Jones, *Advising the "Smart City": When Artificial Intelligence and Big Data Are the Subjects of Professional Advice, What Is a Local Government Lawyer to Do?*, 50 U. Tol. L. Rev. 447, 448 (2019).

23. Baker, *supra* note 21, at 561 (citing Anthony E. Davis, *The Ethical Obligation to Be Technologically Competent*, N.Y. L.J. (Jan. 8, 2016, 3:00 AM), https://www.law.com/newyorklawjournal/almID/1202746527203/the-ethical-obligation-to-bo-technologically-competent [https://perma.cc/YZ4J-VWQN]).

24. *Id.* at 562–63 (citing state rules and analyzing differences in state adoption).

25. Ash Mayfield, *Decrypting the Code of Ethics: The Relationship Between an Attorney's Ethical Duties and Network Security*, 60 Okla. L. Rev. 547, 563 (2007).

26. Fla. Bar Pro. Ethics Comm., Formal Op. 06-2 (2006); *see also* Medianik, *supra* note 17, at 1515 (citing examples).

27. N.Y. State Bar Ass'n Comm. on Pro. Ethics, Formal Op. 782 (2004) ("Reasonable care may, in some circumstances, call for the lawyer to stay abreast of technological advances and the potential risks . . . in order to make an appropriate decision . . . ."); *see also* N.Y. State Bar Ass'n, Comm. on Pro. Ethics, Formal Op. 709 (1998).

28. Medianik, *supra* note 17, at 1515

29. State Bar of Ariz. Comm. on the Rules of Pro. Conduct, Formal Op. 05-04 (2005).

30. Model Rules of Pro. Conduct r. 2.1 (Am. Bar Ass'n 2016).

client's situation."[31] The Model Code expounds upon attorneys' duty to use their independent professional judgment in advising clients. Ethical Consideration 5-1 requires that "[t]he professional judgment of a lawyer should be exercised, within the bounds of the law, solely for the benefit of [the lawyer's] client and free of compromising influences and loyalties."[32] The "candid" and "independent" judgment required by the ethics rules does not mean only independence from outside influences; it also includes independence from client pressure.[33] The Comment to Rule 2.1 provides that "a lawyer should not be deterred from giving candid advice by the prospect that the advice will be unpalatable to the client."[34] Therefore, attorneys must provide "straightforward advice expressing the lawyer's honest assessment."[35]

Rule 2.1's Comments provide further guidance: "In general, a lawyer is not expected to give advice until asked by the client . . . . A lawyer ordinarily has no duty to initiate investigation of a client's affairs or to give advice that the client has indicated is unwanted, but a lawyer may initiate advice to a client when doing so appears to be in the client's interest."[36] As Rule 2.1 indicates, lawyers must be prepared to advise their clients outside the realm of legal issues and to "see themselves as advisors in a general sense."[37] Consistent with these principles, the Duty of Advisement requires attorneys to use their professional judgment in advising their clients, while still upholding the professional ethical standards to promote "societal trust in the practice of law."[38] In concert with the previous discussion, this mandate includes technology use and its impacts on client interests.

The Duty of Technology Competency, combined with the Duty of Advisement, has important ramifications for labor and employment lawyers as specialists in a field impacted heavily by emerging technologies, as discussed further below. In-house counsel, management attorneys, and worker advocates are all specialists because they endeavor to exercise the degree of skill and knowledge in the field of labor and employment and hold themselves out as such. The recognition of a specialty is simply an "acknowledgment of the need for special skill and knowledge that is not part of the ordinary attorney's equipment."[39] "It

31. *Id.*

32. Model Code of Pro. Resp. EC 5-1 (Am. Bar Ass'n 1980).

33. See David Luban, "That the Laws Be Faithfully Executed": The Perils of the Government Legal Advisor, 38 Ohio N.U. L. Rev. 1043, 1044 (2012).

34. Model Rules of Pro. Conduct r. 2.1 cmt 1.

35. *Id.*

36. Model Rules of Pro. Conduct r. 2.1 cmt. 5.

37. Drew Hoffman, *Martha Stewart's Insider Trading Case: A Practical Application of Rule 2.1*, 20 Geo. J. Legal Ethics 707, 713 (2007).

38. Medianik, *supra* note 17, at 1531 (citing Keith A. Petty, *Professional Responsibility Compliance and National Security Attorneys: Adopting the Normative Framework of Internalized Legal Ethics*, 2011 Utah L. Rev. 1563, 1598).

39. 2 Ronald E. Mallen, Legal Malpractice § 20:4 (2019 ed.).

is not unfair to require that an attorney, who practices in a specialty, to exercise the skills and possess the knowledge required to competently represent a client."[40] While Law and Technology is a specialization in and of itself, labor and employment attorneys must be knowledgeable and advise their clients on the impact that emerging technologies have on their clients' interests.

II. Employment Hiring: Data Analytics in Recruitment and Applicant Screening Tools

Using data to sort and rank workers is not new. What is new is the ever-increasing strength of data analytic tools and the way that big data and AI control access to employment opportunities. Over the last decade, technology companies (third-party vendors) have launched "talent acquisition" or "people analytics" services that provide data- or AI-based products for recruiting job applicants, screening candidates, and making hiring decisions based on an individual's likelihood of success at a particular job.[41] These third-party vendors of new data analytic tools market their products as a way for employers to make better decisions faster, fairer, and more efficiently by being more objective.[42]

Employers are buying what they are selling. For example, LinkedIn conducted a 2018 survey of 9,000 hiring managers and recruiting professionals on workplace hiring trends, with half of survey respondents identifying data analytics as "very" or "extremely important" to the future of hiring and nearly one-fifth stating they had "mostly" or "completely adopted" its use in their hiring practices.[43] A popular human resource website predicts that "predictive analytics will find adoption amongst a majority of firms across the globe, for the hiring and management of external applicants and internal employee progression pathways."[44]

This article addresses three recruitment and hiring practices that deserve attention by labor and employment attorneys: online advertisement platforms; applicant screening tools; and psychometric assessments (personality tests, digital interviewing, and gamification).

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40. *Id.*

41. *See* Pauline T. Kim, *Data-Driven Discrimination at Work*, 58 Wm. & Mary L. Rev. 857, 860 (2017).

42. *See* Stephanie Bornstein, *Antidiscriminatory Algorithms*, 70 Ala. L. Rev. 519, 530 (2018) (citing Jenny Roper, *What Do We Mean When We Walk About Talent?*, HR Mag. (June 15, 2015), http://www.hrmagazine.co.uk/article-details/what-do-we-mean-when-we-talk-about-talent).

43. *Id.* at 521 (citing LinkedIn Talent Solutions, Global Recruiting Trends 2018, https://business.linkedin.com/content/dam/me/business/en-us/talent-solutions/resources/pdfs/linkedin-global-recruiting-trends-2018-en-us2.pdf [https://perma.cc/SAT9-7TQ5]).

44. Chiradeep BasuMallick, *3 Ways Predictive Analytics Is Changing Recruitment Practices*, HRTechnologist (May 31, 2018), https://www.hrtechnologist.com/articles/recruitment-onboarding/3-ways-predictive-analytics-is-changing-recruitment-practices [https://perma.cc/CNB5-BRZL].

A. Online Advertising Platforms

In the days before the Internet, employment opportunities came in the form of advertisements in newspapers, radio, and television. Congress recognized that these opportunities must be available equally, as codified in Section 1981 of the Civil Rights Act of 1866,[45] and Title VII of the Civil Rights Act of 1964.[46] Courts held that not only were explicit prohibitions, such as "Blacks Need Not Apply," unlawful, but also subtler forms of discrimination violated the civil rights laws' equal opportunity mandate; and courts held advertisers liable for their discriminatory ads.[47]

Since the advent of the Internet, online advertising has become big business. Social media recruiting reaches ever-widening audiences; Facebook, with its 2.38 billion users, relies upon advertising on its website for significant revenue.[48] In recent years, Facebook has emerged as one of the largest venues for employers to seek applicants for employment and for workers to find job opportunities. A 2015 survey reported that ninety-two percent of employment recruiters used social media to recruit applicants for employment.[49] In addition, a 2016 study by the Society for Human Resource Management found that sixty-six percent of employers who recruit via social media employ Facebook to recruit applicants for employment.[50] The ability to recruit passive job candidates is the top reason that employers use social media to recruit applicants for employment, with many employers using social media as their primary source of recruiting.[51]

Social media platforms, like Facebook, offer tools that allow job advertisers to target a particular audience based on demographic information and the data that it mines, such as location, age, and gender. And Facebook mines *a lot* of data from its billions of users.[52] From this

45. 42 U.S.C. § 1981.

46. 42 U.S.C. § 2000e.

47. *See, e.g.*, Ragin v. N.Y. Times Co., 923 F.2d 995, 999–1000 (2d Cir. 1991) ("Ordinary readers may reasonably infer a racial message from advertisements that are more subtle than the hypothetical swastika or burning cross, and we read the word 'preference' to describe any ad that would discourage an ordinary reader of a particular race from answering it.").

48. Facebook reported $55.838 billion dollars in revenue in 2018. *See* H. Tanovska, *Facebook's Annual Revenue from 2009 to 2020*, STATISTA (Feb. 5, 2021), https://www.statista.com/statistics/268604/annual-revenue-of-facebook [https://perma.cc/KW7J-PQVL].

49. Kimberlee Morrison, *Survey: 92% of Recruiters Use Social Media to Find High-Quality Candidates*, ADWEEK (Sept. 22, 2015), http://www.adweek.com/socialtimes/survey-96-of-recruiters-use-social-media-to-find-high-quality-candidates/627040 [https://perma.cc/FHJ7-ETZE].

50. SOC'Y FOR HUM. RES. MGMT., SHRM SURVEY FINDINGS: USING SOCIAL MEDIA FOR TALENT ACQUISITION—RECRUITMENT AND SCREENING 9 (2016), https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/SHRM-Social-Media-Recruiting-Screening-2015.pdf [https://perma.cc/7RLL-8LQZ].

51. *Id.* at 7, 11.

52. *See* Dylan Curran, *Are You Ready? Here Is All the Data Facebook and Google Have on You*, GUARDIAN (Mar. 30, 2018, 3:17 PM), https://www.theguardian.com/com-

data mining, Facebook infers "attributes," including characteristics, preferences, and interests from its users. Facebook allows its advertisers to microtarget the audience for its job ads by utilizing the attributes mined by Facebook. Moreover, until recently, Facebook required job advertisers to select mandatory filters (location (which can be used as a proxy for race), age, and gender) before placing the ad.[53]

When Facebook places an ad on a person's Facebook page on behalf of an employer, the person sees the text and content of the ad that the employer has directed Facebook to publish. In addition, the person may click on a portion of the ad to display additional information about the ad itself. Through this "Why am I seeing this ad" section of the sponsored ad, Facebook and the employer who purchased the ad give the Facebook user the opportunity to see why he or she has been selected to see that particular ad, which informs the user why the employer selected that user and other users to receive the advertisement.[54]

Facebook also offers a tool to help the advertiser determine which users should be in the audience to receive the ad by identifying Facebook users who are similar in various ways (including demographically) to the Facebook users whom the advertiser identifies to Facebook as the "source audience."[55] In the context of employment advertising and recruiting, the creation and use of a "Lookalike" audience to recruit workers looks like word-of-mouth hiring, which has been considered a discriminatory employment practice.[56]

The risk in targeted online advertising is that an employer can intentionally and expressly rely on protected characteristics to select who is included and excluded from receiving a job advertisement. The author's firm, Outten & Golden LLP, co-counseled with the ACLU to file, litigate, and settle several class action lawsuits against Facebook for its advertising platform and attendance policies, by arguing that

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mentisfree/2018/mar/28/all-the-data-facebook-google-has-on-you-privacy [https://perma.cc/G3P6-JVH2]; Julia Angwin, Surya Mattu & Terry Parris, Jr., *Facebook Doesn't Tell Users Everything It Really Knows About Them*, ProPublica (Dec. 27, 2016, 9:00 AM), https://www.propublica.org/article/facebook-doesnt-tell-users-everything-it-really-knows-about-them [https://perma.cc/HBA5-EZBR].

53. *See* Roy Maurer, *Facebook Close to Finalizing Changes for Job Ads*, Soc'y for Hum. Res. Mgmt. (July 23, 2019), https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/facebook-close-to-finalizing-changes-for-job-ads.aspx.

54. *How Does Facebook Decide Which Ads to Show Me*, Facebook, https://www.facebook.com/help/562973647153813 (last visited Mar. 5, 2021).

55. *About Lookalike Audiences*, Facebook for Business, https://www.facebook.com/business/help/164749007013531 [https://perma.cc/J5PU-85E4].

56. *See, e.g.*, EEOC v. Metal Serv. Co., 892 F.2d 341, 350 (3d Cir. 1990) ("[W]ord-of-mouth hiring practices that carry forward racial imbalances are discriminatory.") (collecting cases); Barnett v. W. T. Grant Co., 518 F.2d 543, 549 (4th Cir. 1975) ("Word-of-mouth hiring, . . . is discriminatory because of its tendency to perpetuate the all-white composition of a work force."); Stender v. Lucky Stores, Inc., 803 F. Supp. 259, 321 (N.D. Cal. 1992) ("[A] system in which promotional opportunities are not posted but rather publicized by word-of-mouth is a discriminatory practice because of its tendency to perpetuate the all-male composition of higher prestige, better paying jobs.").

Facebook failed to protect against discrimination based race, age, and gender.[57] In settling the class suits in March 2019, Facebook agreed to the following:

1. create a separate portal for employment/housing/credit ads with a more limited set of targeting options so that advertisers cannot target ads based on Facebook users' age, gender, race, or categories that are associated with membership in protected groups, or based on zip code or a geographic area that is less than a fifteen-mile radius, and cannot consider users' age, gender, or zip code when creating "Lookalike" audiences for advertisers;
2. implement a system of automated and human review of ads;
3. create a "self-certification" requirement for all advertisers to certify compliance with anti-discrimination laws, and provide education for advertisers on those laws;
4. study the potential for unintended biases in algorithmic modeling on Facebook; and
5. monitor the implementation of the reforms that Facebook is undertaking for three years.[58]

Class lawsuits against the employers who published alleged discriminatory ads on Facebook remain in active litigation.[59]

B. Applicant Screening Tools

Another technological advancement that has changed the landscape of employment hiring is the use of automated screening tools for employers seeking an efficient way to sort through multitudes of applicants. Third-party vendors "harvest information from the internet about job applicants" and "exploit the information in large datasets containing thousands of bits of individual attributes and behaviors."[60] Vendors create automated decision-making programs that analyze these large datasets to find statistical relationship between variables. "The relationships that are uncovered are used to build models

57. *See, e.g.*, Noam Scheiber & Mike Issac, *Facebook Halts Ad Targeting Cited in Bias Complaint*, N.Y. TIMES (Mar. 19, 2019), https://www.nytimes.com/2019/03/19/technology/facebook-discrimination-ads.html [https://perma.cc/TBM7-HN66].

58. Joint Statement from Facebook, Nat'l Fair Hous. All., Commc'ns Workers of Am., Emery Celli Brinckerhoff & Abady LLP, Outten & Golden & ACLU, Summary of Settlements Between Civil Rights Advocates and Facebook 1 (Mar. 19, 2019), https://www.aclu.org/sites/default/files/field_document/3.18.2019_joint_statement_final_0.pdf; *see* Jack Gillum & Ariana Tobin, *Facebook Won't Let Employers, Landlords or Lenders Discriminate in Ads Anymore*, PROPUBLICA (Mar. 19, 2019, 2:00 PM), https://www.propublica.org/article/facebook-ads-discrimination-settlement-housing-employment-credit [https://perma.cc/274G-ENFZ]; Matt Hamilton, *The Comprehensive Guide to Facebook's New Requirements for Housing Ads*, HOMESPOTTER BLOG (Dec. 4, 2019), https://blog.homespotter.com/2019/08/20/the-comprehensive-guide-to-facebooks-new-requirements-for-housing-ads [https://perma.cc/CD4U-JQU2]; Maurer, *supra* note 53.

59. *See, e.g.*, Bradley v. T-Mobile U.S., Inc., No. 17-cv-07232-BLF, 2020 WL 1233924 (N.D. Cal. Mar. 13, 2020).

60. Kim, *supra* note 41, at 861.

to predict future cases. An algorithm is simply the set of instructions derived from that analysis."[61]

The automated screening tools employ algorithms to "make sense of it all—to screen, score, and evaluate individual workers for particular jobs."[62] As Professor Pauline Kim surmised: "This is kind of like Tinder for the HR department, except that the computer swipes left and right instead of a human. In screening or scoring applicants, the algorithm is making predictions about which applicants will perform best on the job."[63] Tech companies offer to examine multitudes of variables about candidates, analyze an employer's past hiring practices, and, from that, recommend candidates to the employer. Other vendors build applicant tracking programs that scour resumes for key words or phrases.[64]

The nearly ubiquitous use of online applications makes sorting by automated hiring platforms that much easier. Recently, social science researchers Professors Ifeoma Ajunwa and David Greene surveyed the top twenty private employers on the U.S. Fortune 500 list (which were mostly retail companies) and found that nearly all job applications for retail jobs must be submitted online, where they were first sorted by automated hiring platforms powered by algorithms.[65]

Professor Kim cites Gild as an example of another type of third-party vendor that markets itself as offering "a smart hiring platform" to help companies find "the right talent quicker."[66] Gild uses an algorithm that

> crunches thousands of bits of information in calculating around 300 larger variables about an individual: the sites where a person hangs out; the types of language, positive or negative, that he or she uses to describe technology of various kinds; self-reported skills on LinkedIn; [and] the projects a person has worked on, and for how long as well as traditional criteria such as education and college major.[67]

What these third-party vendors are doing is predicting who is a good match for an employer by identifying patterns through inferring characteristics from a dataset of information about candidates.[68] These

61. Pauline T. Kim, *Big Data and Artificial Intelligence: New Challenges for Workplace Equality*, 57 Univ. Louisville L. Rev. 313, 317 (2019).

62. Kim, *supra* note 41, at 862.

63. Kim, *supra* note 61, at 317.

64. *See, e.g.*, Jan Tegze, *Modifying Your Resume to Beat ATS Algorithms*, LinkedIn (Sept. 10, 2015), https://www.linkedin.com/pulse/modifying-your-resume-beat-ats-algorithms-jan-tegze [https://perma.cc/N9QK-ADKE].

65. Ifeoma Ajunwa & Daniel Greene, *Platforms at Work: Automated Hiring Platforms and Other New Intermediaries in the Organization of Work*, 33 Rsch. Socio. Work 61, 71–90 (2019).

66. Kim, *supra* note 41, at 862.

67. *Id.*

68. *See* Ari E. Waldman, *Power, Process, and Automated Decision-Making*, 88 Fordham L. Rev. 613, 617 (2019) ("Algorithms cannot predict the future. They can, however, estimate the probability that something will happen based on existing data.").

observed correlations attempt to make predictions to forecast how candidates will behave on the job. As Professor Kim and others have pointed out, "because these predictions are often not based on causal factors, they can result in significant errors or biases."[69]

C. Psychometric Assessments

Psychometric assessments testing has been around for decades—to test candidates for personality traits, competencies, values, and intelligence. In the 1950s, psychometric tests began to be used in the workplace by companies outside of the armed services.[70] In the 1960s and 1970s, industrial/organization (IO) psychologists began reintroducing personality tests based on new behavioral and social science research and techniques.[71] Several rose to the top: the Minnesota Multiphasic Personality Inventory (MMPI), the Myers-Briggs Type Indicator, the Rorschach Test, and the Thematic Apperception Test are among the most well-known and popular tests.[72] To varying degrees, these personality tests incorporate the use of the "Big Five Model" to categorize an applicant's personality traits.[73] The Big Five Model categorizes five personality dimensions to forecast job performance: neuroticism/emotional stability; extraversion; openness to experience; agreeableness; and conscientiousness.[74] Proponents of the tests argue that the five traits are connected to job performance and are predictors of certain outcomes, such as "avoiding counterproductive behavior, reducing turnover and absenteeism, exhibiting more teamwork and leadership, providing more effective customer service, contributing more citizenship behavior, influencing job satisfaction and commitment to the firm, and enhancing safety."[75]

The persuasiveness of the vendors' marketing strategies, in conjunction with employer willingness to try new and innovative ways to hire with more efficiency with less worker turnover, have landed on fertile ground. One study approximates that seventy-six percent of all

69. Kim, *supra* note 61, at 318.

70. Patrick J. McKenna, *Analyzing A Leadership Candidate's Strengths*, OF COUNSEL, Jan. 2017, at 5, 5.

71. Nathan Newman, *Reengineering Workplace Bargaining: How Big Data Drives Lower Wages and How Reframing Labor Law Can Restore Information Equality in the Workplace*, 85 CIN. L. REV. 693, 711–12 (2017) (noting that IOs were at first "largely rooted in the business world itself rather than academia").

72. Elizabeth D. De Armond, *To Cloak the Within: Protecting Employees from Personality Testing*, 61 DEPAUL L. REV. 1129, 1139 (2012).

73. Matthew T. Bodie, Miriam A. Cherry, Marcia L. McCormick & Jintong Tang, *The Law and Policy of People Analytics*, 88 UNIV. COLO. L. REV. 961, 993–94 (2017) (citing Tomas Chamorro-Premuzic & Christopher Steinmetz, *The Perfect Hire*, SCI. AM. MIND, July/Aug. 2013, at 42, 43).

74. *Id.*

75. H. Beau Baez III, *Law's Failure to Keep Pace with Empirical Science: An Examination of Personality and Emotional Intelligence Testing in the Workplace*, 41 OHIO N. UNIV. L. REV. 1, 16 (2014).

companies with more than 100 employees are using personality tests, with the number expected to grow.[76]

Additionally, vendors are marketing ways to screen applicants with virtual interviews that analyze facial expression, vocal indications, word choice, and other indicia to select optimal candidates for hire. For example, the company HireVue offers virtual interviews to sort and grade video job applicants and uses AI algorithms to evaluate their performance, analyze the interview, and predict their performance based on the interview.[77] However, researchers have found this new software technology unreliable and as posing a significant risk of bias for people of color, noting that "facial analysis systems can struggle to read the faces of women with darker skin."[78]

Another recent category of psychometric testing takes advantage of new technology to add game-like characteristics to assessments and make them more appealing to applicants. This "gamification" goes beyond personality questions by "add[ing] features such as rules; competition; scores; medals, badges, or trinkets won; levels of progress; and comparisons of performance against other 'players,' typically in work-related scenarios."[79] For example, one vendor, GapJumpers, models itself on the competition television show "The Voice" and provides "an online technology platform that enables hiring managers to hold blind audition challenges," in which "job applicants are given mini assignments that are designed to assess the applicant for the specific skills required for the open position."[80]

Today, headhunters such as Heidrick & Struggles, Egon Zehnder, and Korn/Ferry, and consultants such as Deloitte and Bain, rely upon psychometric testing because the vendors market them as a "relatively

76. Wendy F. Hensel, *People with Autism Spectrum Disorder in the Workplace: An Expanding Legal Frontier*, 52 Harv. C.R.-C.L. L. Rev. 73, 91 (2017) (citing Tomas Chamorro-Premuzic, *Ace the Assessment*, Harv. Bus. Rev. (July 2015), https://hbr.org/2015/07/ace-the-assessment [https://perma.cc/BJM2-DRPF]).

77. *See* Joe Avella & Richard Feloni, *We Tried the AI Software Companies Like Goldman Sach and Unilever Use to Analyze Job Applicants*, Bus. Insider (Aug. 29, 2017), https://www.businessinsider.com/hirevue-uses-ai-for-job-interview-applicants-goldman-sachs-unilever-2017-8 [https://perma.cc/6YJL-ZNXM].

78. Joy Buolamwini & Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, 81 Proc. Mach. Learning Rsch.: Conf. on Fairness, Accountability & Transparency 77 (2018), http://proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf [https://perma.cc/JB23-JDWS].

79. Jessica M. Walker & Don Moretti, Visibility Comm., Soc'y for Indus. & Org. Psych., Recent Trends in Preemployment Assessment 4 (2018), http://www.siop.org/Portals/84/docs/White%20Papers/PreAssess.pdf [https://perma.cc/X383-UCXY] ("The intent is to provide a more captivating candidate experience that assesses specific skills while keeping the applicant engaged.").

80. Stephanie Bornstein, *Reckless Discrimination*, 105 Calif. L. Rev. 1055, 1102 (2017) (citing Marianne Cooper, *The False Promise of Meritocracy*, Atlantic (Dec. 1, 2015), http://www.theatlantic.com/business/archive/2015/12/meritocracy/418074 [https://perma.cc/P4S9-QL8R]; *Discover Great Talent "The Voice" Way*, GapJumpers, https://www.gapjumpers.me [https://perma.cc/PN68-DZW5]).

inexpensive" way that allows companies "to assess a shortlist of candidates with minimal effort."[81] Yet, the research has yet to support these claims. With regard to gamification, the Society of Industrial Organization Psychologists (SIOP) published a white paper that recognized that gamification testing for hiring has not developed enough to be scientifically studied and needs "further empirical testing in accuracy of job performance predictivity and accuracy in general."[82]

As for personality tests, the most recent meta-analysis of research conducted over the past century shows that they are amongst the *least* effective measures for success in employment.[83] And as described below, they are subject to significant legal challenges for discrimination.

III. Employment Attorneys' Duty in Algorithmic Recruiting and Hiring

A. Bias and Discrimination in Data Analytics in Recruitment and Hiring

Risk of bias entering the hiring process with the onslaught of modern technological advances merits concern for employment attorneys. Over twenty years ago, computer science Professor Batya Friedman and philosophy Professor Helen Nissenbaum described three central types of bias in computer systems in their influential article, *Bias in Computer Systems*.[84] First, they described "preexisting bias," which reflects the personal biases of individuals who design the system.[85] Bias of this type can enter either explicitly or implicitly, regardless of intent.[86] Second, there can be "technical bias," which includes (1) limitations in hardware, software, or peripherals; (2) "the process of ascribing social meaning to algorithms developed out of context"; and (3) "when we quantify the qualitative, discretize the continuous, or formalize the nonformal."[87] Third, Professors Friedman and Nissenbaum identified "emergent bias," which appears only after the design has been completed.[88] Today, their observations about emergent bias are

81. McKenna, *supra* note 70, at 5.

82. WALKER & MORETTI, *supra* note 79, at 4 (citing Winfred Arthur, Jr., Dennis Doverspike, Ted B. Kinney & Matthew O'Connell, *The Impact of Emerging Technologies on Selection Models and Research: Mobile Devices and Gamification as Exemplars*, *in* HANDBOOK OF EMPLOYEE SELECTION 967 (Nancy T. Tippins & James L. Farr eds., 2017)).

83. Whitney Martin, *The Problem with Using Personality Tests for Hiring*, HARV. BUS. REV., (Aug. 27, 2014), https://hbr.org/2014/08/the-problem-with-using-personality-tests-for-hiring [https://perma.cc/JX4W-3E9H] (citing Frank Schmidt and Jon Hunter's meta analysis of workplace productivity data, Frank L. Schmidt & John E. Hunter, *The Validity and Utility of Selection Methods in Personnel Psychology: Practical and Theoretical Implications of 85 Years of Research Findings*, 124 PSYCH. BULL. 262 (1998)).

84. Batya Friedman & Helen Nissenbaum, *Bias in Computer Systems*, 14 ACM TRANSACTIONS ON INFO. SYS. 330, 330 (1996).

85. *Id.* at 333.

86. *Id.* at 334.

87. *Id.* at 335.

88. *Id.* at 336.

particularly relevant, given how it "almost perfectly captures the risks inherent in machine learning, where preexisting biases can merge with technical biases, producing dynamic results that can disadvantage particular groups."[89]

Building on this work, legal academics and social scientists continue to examine the ways in which bias (preexisting, technical, and emerging) exist in algorithmic decision-making. The recruiting and hiring processes addressed above (online advertising platforms, applicant screening tools, and psychometric assessments testing) include myriad ways that bias and discrimination can pervade the systems.

First, online advertisement platforms allow for employers, including employment agencies and recruiters, to rely on protected categories to select who receives, and who are excluded from seeing, information about a job opening. Because job openings are a valuable resource, such targeted advertising can significantly harm those excluded based on race, age, or gender. As seen above, an employer might be unintentionally discriminating: instead of choosing an explicit discriminatory exclusion (such as an age range), the employer can choose to target audiences with attributes that correlate with that characteristic, such as "Young Professionals" or "Millennials."[90] Employers can also easily intentionally discriminate on the advertising platform by allowing those employers to target or exclude based on protected characteristics to mask their motive. "Masking is a term that describes how data can be used to hide an explicit discriminatory motive,"[91] such as using a proxy attribute that causes inclusion or exclusion of receipt of ads based on a protected characteristic (*e.g.*, choosing a zip code to exclude applicants of color).

With regard to applicant screening tools, there are multiple ways that these tools can discriminate. The term *algorithmic bias* refers to the catalogue of potential sources that bias enters: "biased data inputs, skewed training data, missing variables, selection of biased target variables, measurement errors, or intentional efforts to mask discriminatory motives."[92] Concerns that a data model disadvantages some applicants "cannot be resolved simply by eliminating protected characteristics like race and sex from the data"[93] because close proxies are used instead. Similar to targeted advertising, selection or scoring algorithms can rely on proxy attributes to sort applicants on the basis of a protected characteristic. For example, "certain types of personal

89. Sonia K. Katyal, *Private Accountability in the Age of Artificial Intelligence*, 66 UCLA L. Rev. 54, 89 (2019).

90. Kim, *supra* note 61, at 319.

91. Bodie et al., *supra* note 73, at 1014.

92. Pauline T. Kim, *Auditing Algorithms for Discrimination*, 166 Univ. Pa. L. Rev. Online 189, 194 (2017) (citing Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact,* 104 Cal. L. Rev. 671, 677–93 (2016)).

93. Kim, *supra* note 41, at 880.

data might be correlated with health conditions in a way that causes the algorithm to implicitly discriminate against individuals with disabilities, even if the employer neither knows nor intends to screen on that basis."[94]

At its core, algorithmic decision making is predictive: it identifies relationships and correlations and makes predictions based on the strength of the statistical correlation. But without rigorous study to determine whether an observed relationship between variables is causal (through scientific methodology incorporating validity retesting), there is no way to know if the correlation is "meaningful or spurious."[95] "Because data mining is concerned only with identifying relationships, the model's creators often do not know whether correlations that are uncovered represent genuine relationships between factors in the real world or are artifacts of the data mining process."[96] The result is highly destructive in the hiring context: "if non-causal correlations are used to decide who should be hired, some workers will lose out on jobs for reasons that turn out to be completely arbitrary."[97]

Moreover, although AI proponents argue that machine learning will self-correct (or "computer correct" as the case may be) as more and newer data enter the program,[98] bias in the hiring context is actually a "closed feedback loop" that reinforces inequality.[99] Simply put, the errors made in employment decisions are often not observable and therefore learnable by the program. For example, algorithmic decision making sorts candidates as qualified versus unqualified, and employers rely on that sorting to hire the candidate the algorithm identified as most qualified. After hiring the "qualified" individual, the employer observes that worker's job performance and learns if the program's classification of the worker as qualified was valid. But when the algorithm identifies an individual as "unqualified," that person is never hired and the employer never observes that person's job performance, denying the employer an opportunity to learn the error and feed that observation into the program.[100] As Professor Kim noted, "If those errors are not randomly distributed, but are systematically biased against certain groups, they can themselves produce feedback effects."[101]

94. Kim, *supra* note 61, at 320.
95. Kim, *supra* note 41, at 881.
96. *Id.* at 880.
97. Kim, *supra* note 61, at 322.
98. *See* Kim, *supra* note 41, at 879 (citing VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK 12 (2013)).
99. *See, e.g.*, Iyad Rahwan, *Society-in-the-Loop: Programming the Algorithmic Social Contract*, 20 ETHICS INFO. TECH. 5, 6 (2017).
100. *See* Kim, *supra* note 41, at 882.
101. Kim, *supra* note 61, at 323.

Lastly, psychometric assessments, such as personality tests, virtual interviews, and gamified assessments, are popular tools for employers looking for cost-effective ways to sort and ultimately hire desirable workers. Personality tests have a history of litigation challenges over privacy, disability discrimination, and disparate impact concerns.[102] The inclusion of algorithmic decision making into these formerly paper-and-pen tests have only increased scrutiny.[103] In *Weapons of Math Destruction*, mathematician Cathy O'Neil argues that algorithms have a destructive disparate impact on poor candidates because wealthier individuals are more likely to benefit from personal input. "A white-shoe law firm or an exclusive prep school will lean far more on recommendations and face-to-face interviews than will a fast-food chain or cash-strapped urban school district. The privileged . . . are processed more by people, the masses by machines."[104]

As evidence, O'Neil recounts the story of Kyle Behm, an applicant for a part-time hourly position at a Kroger's grocery store, who failed to receive a call back and learned from a friend at Kroger's that he had been rejected for failing a test modeled after the "Five Factor Model" personality test.[105] Behm, despite earning a near perfect SAT score, had left college due to struggles with bipolar disorder.[106] Kroger's personality test asked questions such as, "[w]hich adjective best describes you at work, unique or orderly?" but did not include an answer for "all of the above."[107] The software that analyzed the answers was developed by vendor Kronos Inc., a workforce management company; the program determined that applicants who answered "unique" were "narcissis[tic]," while those who answering "orderly," were "conscientious," and from those answers, rejected those applicants who failed the test.[108] Behm's father, an attorney, brought suit challenging the test as a violation of the Americans with Disabilities Act (ADA) because it was an unlawful pre-hire medical test.[109]

The ADA prohibits certain inquiries into employee disabilities or other health conditions, either prior to or contemporaneous with an

102. *See, e.g.*, Susan J. Stabile, *The Use of Personality Tests as a Hiring Tool: Is the Benefit Worth the Cost?*, 4 Univ. Pa. J. Lab. & Emp. L. 279, 287 (2002).

103. *See* De Armond, *supra* note 72, at 1129 ("Employers increasingly want to examine the personalities of applicants and employees, but the testing of individuals can inflict distinct privacy harms that are not always justified by the employers' needs.").

104. O'Neil, *supra* note 3, at 8 (2016). *See generally* Virginia Eubanks, Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor (2018); Frank Pasquale, The Black Box Society: The Secret Algorithms That Control Money and Information (2015).

105. O'Neil, *supra* note 3, at 105–06.

106. *Id.*

107. *Id.* at 110.

108. *Id.*

109. *Id.* at 106–07.

offer of employment.[110] Tests, including personality tests, administered before an employer extends a conditional employment offer may violate the ADA's prohibition against using medical exams at the pre-offer stage. Whether or not such tests qualify as "medical exams" remains controversial. To analyze this issue, the EEOC considers (1) whether the test is administered by a health care professional; (2) whether the test is interpreted by a health care professional; (3) the purpose of the test; (4) whether the test is invasive; (5) what the test measures (e.g., physiological responses or task performance); (6) whether the test is normally given in a medical facility; and (7) whether medical equipment is used.[111]

Courts and regulators have found personality tests in certain circumstances to be impermissible medical exams under the ADA. The Seventh Circuit and district courts have held that an employer's administration of the personality test MMPI is a medical examination that violates the ADA.[112] In *Karraker v. Rent-A-Center*, the employer did not argue that the MMPI test was "job-related and consistent with business necessity," but instead that it had used it only to measure personality traits using vocational scoring.[113] The Seventh Circuit recognized that the test was designed to reveal mental illnesses, thereby hurting the employment prospects of applicants with disabilities.[114] The court held that the MMPI was a medical examination prohibited pre-offer by the ADA. Similarly, regulators in Rhode Island found that CVS Pharmacy was illegally screening out applicants with mental illnesses when a personality test required respondents to agree or disagree with such statements as: "People do a lot of things that make you angry" and "[t]here's no use having close friends; they always let you down."[115]

Despite these holdings and the most recent research that suggest personality tests are significantly less effective in predicting job

110. 42 U.S.C. § 12112(d)(3); 29 C.F.R. § 1630.14(a) (2020).

111. EEOC, Notice No. 915.002, Enforcement Guidance: Pre-Employment Disability-Related Inquiries and Medical Examinations of Employees Under the Americans with Disabilities Act of 1990, at 4 (July 27, 2000), https://babel.hathitrust.org/cgi/pt?id=umn.31951d01166337b&view=1up&seq=3; *see also Enforcement Guidance on Disability Related Inquiries and Medical Examinations of Employees Under the ADA*, EEOC (July 27, 2000), https://www.eeoc.gov/laws/guidance/enforcement-guidance-disability-related-inquiries-and-medical-examinations-employees#4 (scroll down to "2. What is a 'medical examination'?").

112. Karraker v. Rent-A-Center, 411 F.3d 831, 837 (7th Cir. 2005); Barnes v. Cochran, 944 F. Supp. 897, 905 (S.D. Fla. 1996) (finding that MMPI administered as part of psychological testing constituted a medical exam).

113. *Karraker*, 411 F.3d at 835.

114. *Id.* at 836–37.

115. Cathy O'Neil, *How Algorithms Rule Our Working Lives*, GUARDIAN (Sept. 1, 2016), https://www.theguardian.com/science/2016/sep/01/how-algorithms-rule-our-working-lives [https://perma.cc/BS2Y-CLZ2].

performance,[116] employers' reliance on such assessments have only grown—automation in the hiring process has become a $500 million per year industry.[117]

B. Automation in Hiring and the Ethical Obligations of Employment Attorneys

Pursuant to the Duty of Technology Competence and Duty of Advisement, employment attorneys who counsel employers are best advised to learn how algorithmic decision-making works and share the dangers that it poses in recruitment and hiring. Attorneys are not expected to be experts—they are neither social scientists, nor are they IO psychologists. But those disciplines teach society at large of the harm such programs can cause; yet attorneys and human resource (HR) professionals are not paying attention.

Researchers conducted a study to determine whether the beliefs of HR professionals were consistent with established research findings on the effectiveness of various HR practices, surveying 1,000 Society for Human Resource Management (SHRM) members (HR managers, directors, and vice presidents) with an average experience of fourteen years.[118] With regard to hiring assessments, more than half of respondents were unfamiliar with prevailing research findings.[119] A *Harvard Business Review* article suggested an explanation for the lack of HR knowledge on this topic: "HR professionals often don't have time to read the latest research; the research itself is often present with technically complex language and data; and that the prospect of introducing an entirely new screening measure is daunting from multiple angles."[120]

In-house counsel and management attorneys have a duty to ensure that their clients, including business owners, HR staff, and supervisors who hire, have the requisite knowledge before instituting an automated hiring system using emerging technologies.[121] This endeavor is made harder by the "Black Box" problem: algorithmic systems are too often not held accountable because their inner workings are not transparent. This lack of transparency is made more difficult by the third-party vendors selling their products as protected trade secrets, with proprietary algorithms. They are also built using machine learn-

116. *See* Martin, *supra* note 83.

117. O'Neil, *supra* note 3, at 108.

118. Sara L. Rynes, Amy E. Colbert & Kenneth G. Brown, *HR Professionals' Beliefs About Effective Human Resource Practices: Correspondence Between Research and Practice*, 41 Hum. Res. Mgmt. 149, 151 (2002), http://www.cebma.org/wp-content/uploads/Rynes-et-al-HR-Professionals-belief-about-effective-human-resource-practices-HRM-2002.pdf [https://perma.cc/2KBL-X2FD].

119. *Id.*

120. Martin, *supra* note 83.

121. *See* Ignacio N. Cofone, *Algorithmic Discrimination is an Information Problem*, 70 Hastings L.J. 1389, 1442 (2019) ("But humans still make the most relevant decisions in algorithmic decision-making processes.").

ing techniques that do not always require a person programming the system to specify the inputs or factors the model considers or weighs.[122] Because it is the computer that constructs the program "by exploiting the [complex] relationships it uncovers between variables in the data," "the resulting model is completely opaque, even to its creators."[123]

In this context, the lack of transparency makes it imperative for employment attorneys to observe actual outcomes of the algorithmic decision-making to determine whether there are discriminatory effects. "Because so many potential sources of bias lie outside the code, no amount of technical design can ensure that automated decision systems will never operate in a discriminatory manner."[124] Therefore, "avoiding discrimination requires not only attention to fairness in design, but also scrutiny on how these systems operate in practice."[125] That is where the role of the employment attorney is crucial.

Employment attorneys are guided by the Duty of Technology Competence that when using a third-party vendor, they should "conduct a due diligence investigation of the provider and its services and cannot rely on lack technological sophistication to excuse the failure to do so."[126] The employment attorney's duty is "ongoing [and] requires long-term reasonable care."[127] This requires employment attorneys to monitor their clients' use of technology vendors and their use of algorithms in making decisions, as clients rely on that information in making decisions about recruitment and hiring practices that could unlawfully discriminate.

First, attorneys that counsel clients who hire people using these technologies must become familiar with the technological landscape. Plenty of continuing legal education courses and conferences are available to educate attorneys in this area,[128] as well as courses designed by

122. *See* Kim, *supra* note 41, at 881.

123. *Id.*

124. Kim, *supra* note 92, at 196.

125. *Id.*

126. Wash. Bar Ass'n Comm. on Pro. Ethics, Advisory Op. 2215 (2012), https://mcle.mywsba.org/IO/print.aspx?ID=1662 [https://perma.cc/2VNK-L884].

127. *See* Baker, *supra* note 21, at 572–73.

128. For lawyers seeking to start their education in algorithmic decision making, many bar associations offer CLEs on the topic; additionally, the Future of Privacy Forum released *The Privacy Expert's Guide to AI and Machine Learning*, a good starting point. FUTURE OF PRIVACY F., THE PRIVACY EXPERT'S GUIDE TO AI AND MACHINE LEARNING (2018), https://fpf.org/wp-content/uploads/2018/10/FPF_Artificial-Intelligence_Digital.pdf. For resources in becoming "bilingual" in law and technology, MIT's Schwarzman College of Computing is a new interdisciplinary center to "transform education and research in societal, public policy, and ethical considerations relevant to computing." *See* MIT SCHWARZMAN COLL. OF COMPUTING, https://computing.mit.edu [https://perma.cc/c699-K7EL].

See Rob Maurer, *Recruiters Struggle with Predictive Data Analytics*, SOC'Y FOR HUM. RES. MGMT. (Sept. 21, 2018), https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/recruiters-struggle-predictive-data-analytics.aspx [https://perma.cc/S4YC-RY79].

the Society of Industrial and Organizational Pscyhology (SIOP)[129] and the Society for Human Resource Management (SHRM).[130] As the State Bar of California advises, attorneys representing clients using these technologies must "(1) become familiar with the technology, (2) consult with or delegate to someone who is familiar with the technology, or (3) decline to represent the client."[131] Employment attorneys, even those outside of California, would do well to take heed.

Next, attorneys must take steps to confirm that their clients understand what they are buying from third-party vendors and monitor functionality. Despite the fact that analytics use complicated algorithms and non-transparent computations, attorneys must counsel their clients to question and learn from their vendors about the systems that they are using. A vendor should ensure that a data scientist is on staff and can work with the clients in a way that the company can use it effectively, explain it to others, and benefit from it. Attorneys should conduct a thorough due diligence of the vendor and its products for their clients, asking to view the algorithm and its different permutations, and ensuring that the vendor continually updates the technology to consistently improve upon it.[132]

Additionally, attorneys must work with clients to ensure appropriate data-security measures are in place. One management attorney advises his clients who hire using AI-selected applicant pools and candidates to "[i]mplement appropriate data-security measures, such as determining how relevant data will be hosted and identifying a core group of individuals within HR who will have access to that data"; "[u]nderstand document-retention obligations to comply with Equal Employment Opportunity Commission guidance, U.S. Department of Labor regulations and state law"; and "[d]etermine what to do with the data and how to access it when the agreement with the vendor ends or litigation occurs."[133]

Lastly, employers must ensure that clients working with these technologies are evaluating their business outcomes and impacts. Attorneys can assist companies by conducting a periodic statistical sampling of the applicant pool and candidates selected through these technologies and engaging in a thorough adverse-impact analysis.[134] The only way for an employer to confirm that its practices are not

129. Soc'y for Indus. & Org. Psych., https://www.siop.org.

130. Soc'y for Hum. Res. Mgmt., https://www.shrm.org/pages/default.aspx.

131. O'Neil, *supra* note 3, at 937 (citing State Bar of Cal. Standing Comm. on Pro. Responsibility & Conduct, Formal Op. 2015-193 (2015) (concerning e-discovery)).

132. *See* Adam S. Forman, Nathaniel M. Glasser & Matthew S. Aibel, *Minimize Risks When Using Big Data Analytics in Hiring*, Soc'y for Hum. Res. Mgmt. (July 12, 2018), https://www.shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/big-data-analytics-in-hiring.aspx [https:perma.cc/MH68-KHQ8].

133. *Id.*

134. *See id.*

adversely impacting certain people, such as women or people of color, is for the company to show that its hiring practices are valid. Validity requires that the practices predict not only who will be a good employee in meaningful and statistically significant ways, but also that there are no alternatives that would predict as well with less adverse impact. Such an analysis must be conducted with data on the employer's own applicants and hires. As one author noted, "The fact that the vendor that sold you the test you use has evidence that it was valid in other contexts is not sufficient."[135]

Conclusion

Many commentators agree that algorithmic decision making, ubiquitous in our current culture and growing in popularity in the recruitment and hiring context, must be monitored and its discriminatory effects resolved. But they disagree on how that is best done. Some argue for accountability by way of computer design for procedural regularity at the outset,[136] while others believe auditing algorithms for discrimination is the key to address the causes of bias that do not lie in the code, but in the broader social processes.[137] As computer scientists, mathematicians, IO psychologists, and other social scientists continually strive for better outcomes, it is the employment attorneys' duty to make sure that their clients are using technology in recruitment and hiring responsibly, ethically, and legally. This article is a call for employment attorneys to engage and more fully embrace that duty.

135. Peter Cappelli, *Your Approach to Hiring Is All Wrong*, HARV. BUS. REV., May/June 2019, at 49, 51.

136. *See* Joshua A. Kroll, Joanna Huey, Solon Barocas, Edward W. Felten, Joel R. Reidenberg, David G. Robinson & Harlan Yu, *Accountable Algorithms*, 165 UNIV. PA. L. REV. 633, 656 (2017).

137. *See* Kim, *supra* note 92, at 191.